

# AJAX PROJECT

## Environmental Assessment Certificate Application / Environmental Impact Statement for a Comprehensive Study

### TABLE OF CONTENTS

Preface to the Application / EIS

Executive Summary

Résumé

Acknowledgements

Table of Concordance

Table of Contents .....	ToC 1
List of Figures .....	ToC 71
List of Tables .....	ToC 85
List of Plates .....	ToC 127
List of Appendices.....	ToC 127

Acronyms and Abbreviations

Glossary

#### PART A. INTRODUCTION AND BACKGROUND

1.	Purpose of the Application / Environmental Impact Statement (EIS) .....	1-1
1.1	Purpose and Organization of Document.....	1-1
1.1.1	Purpose of Document .....	1-1
1.1.2	Organization of Document .....	1-2
1.1.2.1	Part A: Introduction and Background .....	1-2
1.1.2.2	Part B: Assessment of Potential Effects, Mitigation, Residual Effects Significance.....	1-2
1.1.2.3	Part C: Aboriginal Groups Information Requirements.....	1-3
1.1.2.4	Part D: Federal Information Requirements.....	1-3
1.1.2.5	Part E: Conclusions.....	1-3
1.2	References.....	1-4

2.	Project Overview .....	2-1
2.1	Introduction.....	2-1
2.1.1	Proponent Description.....	2-1
2.1.2	Consultants.....	2-2
2.2	Project Background .....	2-2
2.2.1	Provincial and Federal Triggers .....	2-2
2.2.2	Project Location .....	2-3
2.2.2.1	Climate .....	2-4
2.2.3	Project History .....	2-4
2.2.4	Project Schedule.....	2-8
2.2.5	Environmental Management System .....	2-8
2.3	Provincial Scope of the Project.....	2-10
2.4	Federal Scope of the Project .....	2-11
2.5	Alternative Means of Undertaking the Project.....	2-11
2.6	Project Land Use .....	2-12
2.6.1	Land Use and Aboriginal Territories.....	2-12
2.6.1.1	Project Land and Mineral Tenure.....	2-12
2.6.1.2	Background and Aboriginal Group Setting.....	2-23
2.6.1.3	Land Use Context .....	2-23
2.7	Project Benefits.....	2-25
2.7.1	Introduction .....	2-25
2.7.2	Economic Impacts .....	2-27
2.7.2.1	Construction Phase.....	2-27
2.7.2.2	Operations Phase .....	2-29
2.7.2.3	Decommissioning and Closure Phase .....	2-30
2.7.3	Labour Force, Employment, and Training.....	2-30
2.7.3.1	Workforce Requirements.....	2-32
2.7.3.2	Local Hire Scenarios.....	2-35
2.7.3.3	Training.....	2-38
2.7.4	Income.....	2-39
2.7.5	Business Opportunities.....	2-40
2.7.6	Economic Diversification .....	2-42
2.7.7	Healthy Living and Health Education .....	2-42
2.7.8	Community Development .....	2-43
2.8	Applicable Permits .....	2-44
2.8.1	Permits and Approvals.....	2-44
2.8.1.1	First Nations Consultation and Accommodation .....	2-44

2.8.1.2	British Columbia <i>Mines Act</i> .....	2-44
2.8.1.3	<i>Water Act</i> .....	2-45
2.8.1.4	<i>Land Act and Transportation Act</i> .....	2-45
2.8.1.5	<i>Environmental Management Act</i> .....	2-45
2.8.1.6	<i>Fisheries Act</i> .....	2-45
2.8.1.7	<i>Forest Act</i> .....	2-46
2.8.1.8	<i>Mineral Tenure Act</i> .....	2-46
2.8.2	List of Permits and Approvals.....	2-46
2.8.3	Permitting Process.....	2-49
2.9	References.....	2-50
3.	Detailed Project Description.....	3-1
3.1	Introduction.....	3-1
3.1.1	Project Summary.....	3-1
3.1.2	Project Schedule.....	3-2
3.1.3	Construction Activities.....	3-3
3.1.4	Operation Activities.....	3-5
3.1.5	Closure Activities.....	3-6
3.1.5.1	Planned Closure Activities.....	3-6
3.1.5.2	Temporary Closure Activities.....	3-7
3.2	Project Design Considerations.....	3-8
3.2.1	Environment.....	3-8
3.2.2	Climate Change.....	3-10
3.2.3	Application of the Precautionary Principle.....	3-10
3.2.4	Worker Health and Safety.....	3-11
3.2.5	Socio-economic Conditions.....	3-11
3.2.6	Archaeological and Heritage/Cultural Sites.....	3-12
3.2.7	Consideration of Current Land Use Activities.....	3-12
3.2.8	First Nation Engagement and Traditional Knowledge.....	3-12
3.2.9	Community Engagement.....	3-13
3.2.10	Future Development.....	3-14
3.3	Geology.....	3-14
3.3.1	Regional Geology.....	3-14
3.3.2	Local Geology.....	3-16
3.3.3	Mineralization.....	3-17
3.3.4	Veining.....	3-18
3.3.5	Structure.....	3-18
3.3.6	Surficial Geology.....	3-20

3.3.7	Mineral Resources .....	3-20
3.3.8	Geotechnical Investigations .....	3-22
3.4	Site Geochemistry .....	3-22
3.4.1	Characterization and Screening .....	3-22
3.4.1.1	Mine Rock.....	3-22
3.4.1.2	Ore .....	3-23
3.4.1.3	Tailings.....	3-23
3.4.1.4	Overburden .....	3-23
3.4.2	Source Terms and Predictive Modelling.....	3-24
3.5	Ajax Pit Development .....	3-24
3.5.1	Open Pit Geotechnical Design.....	3-24
3.5.1.1	Open Pit Slope Design Consideration .....	3-25
3.5.1.2	Hydrogeological Assessment.....	3-25
3.5.1.3	Kinder Morgan Pipeline .....	3-26
3.5.2	Pioneering Work.....	3-26
3.5.3	Pit Development.....	3-26
3.5.3.1	Year -2 to Year 2.....	3-26
3.5.3.2	Up to Year 5.....	3-27
3.5.3.3	Up to Year 10.....	3-27
3.5.3.4	Up to Year 23.....	3-27
3.5.4	Ore Quality Control .....	3-28
3.5.5	Drilling and Blasting.....	3-28
3.5.6	Loading and Hauling.....	3-28
3.6	Mine Production Schedule .....	3-43
3.7	Process Plant and Ore Processing .....	3-43
3.7.1	Overview .....	3-43
3.7.2	Primary Crushing and Conveying.....	3-44
3.7.3	Rougher Flotation.....	3-46
3.7.4	Primary Regrind .....	3-46
3.7.5	Cleaner Flotation & Secondary Regrind .....	3-46
3.7.6	Reagent Handling and Storage.....	3-46
3.7.7	Laboratory Services.....	3-48
3.8	Tailings Storage Facility and Tailings Management.....	3-48
3.8.1	Site Selection .....	3-48
3.8.2	Design and Operating Objectives .....	3-48
3.8.3	Thickened Tailings Strategy.....	3-49
3.8.4	General Description of TSF and Distribution System .....	3-49

3.8.5	Runoff and Seepage Control.....	3-51
3.8.6	Monitoring and Reporting.....	3-52
3.9	Mine Rock Storage and Ore Stockpiles.....	3-55
3.9.1	Mine Rock Storage Facilities.....	3-55
3.9.1.1	Year -2 to Year 2.....	3-56
3.9.1.2	Year 5.....	3-56
3.9.1.3	Year 10.....	3-56
3.9.1.4	Year 20.....	3-56
3.9.2	Ore Stockpiles.....	3-57
3.10	Overburden and Topsoil Stockpiles.....	3-57
3.11	Equipment.....	3-57
3.11.1	Construction and Reclamation Equipment.....	3-57
3.11.2	Mining Equipment.....	3-58
3.11.3	Surface Equipment.....	3-58
3.12	Explosives.....	3-59
3.12.1	Explosives Manufacturing and Storage.....	3-59
3.12.2	Transportation of Explosives to Work Sites.....	3-60
3.12.3	Blast Pattern and Management.....	3-61
3.13	Ancillary Infrastructure.....	3-61
3.13.1	Truck Maintenance Facility, Warehouse, and Mine Dry Facilities.....	3-61
3.13.2	Administration Building and Emergency Services.....	3-62
3.13.3	Cold Storage Warehouse.....	3-62
3.13.4	Reagents Storage Building.....	3-62
3.13.5	Concentrate Storage.....	3-62
3.13.6	Fuel Supply and Storage.....	3-62
3.13.7	Wastewater (Sewage, Greywater).....	3-63
3.13.7.1	Sanitary Sewage.....	3-63
3.13.7.2	Truck Wash.....	3-64
3.13.7.3	Landfarm.....	3-64
3.13.8	Solid Waste.....	3-64
3.13.8.1	Waste Types.....	3-64
3.13.9	Waste Management.....	3-66
3.13.10	Emergency Services.....	3-66
3.13.11	Fire Response and Protection.....	3-67
3.13.12	Project Security and Public Access to Site and Roads.....	3-67
3.13.13	Communications.....	3-67
3.14	Site Water Management.....	3-68

3.14.1	Goose Lake, Peterson Creek, and Jacko Lake.....	3-68
3.14.2	Water Management during Construction.....	3-69
3.14.3	Water Management during Operation.....	3-71
3.14.4	Water Management during Closure.....	3-74
3.15	Power Supply.....	3-74
3.16	Traffic and Project Access.....	3-77
3.16.1	Project Traffic.....	3-77
3.16.1.1	Construction Phase Traffic Estimate.....	3-77
3.16.1.2	Operational Phase Traffic Estimates.....	3-78
3.16.2	Project Access.....	3-79
3.16.2.1	Temporary Access Plan.....	3-80
3.16.2.2	Primary Access Plan.....	3-80
3.17	Closure and Reclamation.....	3-81
3.17.1	Introduction.....	3-81
3.17.2	Overview of Mine Closure and Reclamation Plan.....	3-82
3.17.3	Regulatory Framework.....	3-82
3.17.3.1	BC <i>Mines Act</i> and Health, Safety and Reclamation Code.....	3-82
3.17.3.2	Metal Mining Effluent Regulations.....	3-83
3.17.3.3	<i>Environmental Management Act</i> and <i>Canadian Environmental Protection Act</i> .....	3-83
3.17.3.4	<i>Water Act</i> .....	3-84
3.17.4	Closure and Reclamation Objectives.....	3-84
3.17.4.1	Long-Term Stability.....	3-86
3.17.5	Soil Management.....	3-90
3.17.5.1	Soil Assessment.....	3-91
3.17.5.2	Materials Balance.....	3-95
3.17.5.3	Soil Quality.....	3-95
3.17.5.4	Soil Salvage.....	3-95
3.17.5.5	Soil Stockpiling.....	3-97
3.17.5.6	Soil Placement.....	3-97
3.17.6	Re-vegetation.....	3-98
3.17.6.1	Progressive Reclamation.....	3-99
3.17.7	Mine Closure and Reclamation Components.....	3-100
3.17.7.1	Tailings Storage Facility.....	3-103
3.17.7.2	Mine Rock Storage Facilities.....	3-105
3.17.7.3	Stockpiles.....	3-106
3.17.7.4	Open Pit.....	3-107

3.17.7.5	Infrastructure and Equipment .....	3-107
3.17.7.6	Roads .....	3-108
3.17.7.7	Pipelines and Power .....	3-109
3.17.7.8	Solid Waste Management Facilities .....	3-109
3.17.7.9	Water Management Systems.....	3-110
3.17.8	Temporary and Final Mine Closure.....	3-112
3.17.8.1	Temporary Mine Closure .....	3-112
3.17.8.2	Final Mine Closure .....	3-115
3.17.9	Monitoring.....	3-115
3.17.9.1	Reclamation Monitoring and Maintenance .....	3-116
3.17.10	Mine Closure Cost Estimate.....	3-117
3.17.10.1	Closure Costs.....	3-117
3.17.10.2	Reclamation Costs .....	3-117
3.17.10.3	Monitoring and Indirect Costs.....	3-117
3.17.10.4	Closure and Reclamation Plan Updating.....	3-118
3.18	Human Resources.....	3-118
3.18.1	Construction Workforce .....	3-118
3.18.2	Operation Workforce .....	3-118
3.18.3	Closure Workforce .....	3-119
3.19	References.....	3-120
4.	Assessment Process.....	4-1
4.1	British Columbia <i>Environmental Assessment Act</i> Requirements.....	4-1
4.1.1	Reviewable Projects Regulation (BC Reg. 370/2002) .....	4-2
4.1.2	Prescribed Time Limits Regulation (BC Reg. 372/2002).....	4-2
4.1.3	Public Consultation Policy Regulation (BC Reg. 373/2002).....	4-2
4.1.4	Concurrent Approval Regulation (BC Reg. 371/2002) .....	4-2
4.1.5	Environmental Assessment Fee Regulation (BC Reg. 50/2014) .....	4-3
4.1.6	Guidance Documents.....	4-3
4.2	<i>Canadian Environmental Assessment Act</i> Requirements .....	4-3
4.2.1	Comprehensive Study List Regulations (SOR/94-638).....	4-4
4.2.2	Law List Regulations (SOR/94-636) .....	4-4
4.2.3	Establishing Timelines for Comprehensive Studies Regulations (SOR/2011-139).....	4-4
4.2.4	Guidance Documents and Operational Policy Statements.....	4-5
4.3	Environmental Assessment Process.....	4-5
4.3.1	Cooperative Environmental Assessment.....	4-5
4.3.2	Joint Environmental Assessment Working Group .....	4-6

4.4	Provincial Environmental Assessment Process.....	4-7
4.4.1	Pre-Application Stage.....	4-7
4.4.1.1	Project Description.....	4-7
4.4.1.2	Application Information Requirements.....	4-10
4.4.1.3	Preparation of the Application.....	4-12
4.4.1.4	Screening of the Application.....	4-12
4.4.2	Application Stage.....	4-13
4.4.2.1	180-Day Review of the Application.....	4-13
4.4.2.2	Assessment Report.....	4-13
4.4.3	Minister’s Decision.....	4-14
4.4.4	Provincial Milestones.....	4-14
4.5	Federal Environmental Assessment Review Process.....	4-15
4.5.1	Project Description.....	4-15
4.5.2	Notice of Commencement.....	4-15
4.5.2.1	Background Information.....	4-17
4.5.2.2	Scope of Project.....	4-17
4.5.2.3	Major Projects Management Office.....	4-18
4.5.3	Environmental Impact Statement.....	4-18
4.5.3.1	Environmental Impact Statement Guidelines.....	4-18
4.5.3.2	Preparation of the Environmental Impact Statement.....	4-18
4.5.3.3	Screening of the Environmental Impact Statement.....	4-18
4.5.3.4	Review of the Environmental Impact Statement.....	4-19
4.5.3.5	Comprehensive Study Report.....	4-19
4.5.4	Minister’s Decision.....	4-19
4.5.5	Federal Milestones.....	4-20
4.5.6	Federal Participant Funding Program.....	4-21
4.6	Aboriginal Information Distribution and Consultation.....	4-23
4.6.1	Pre-Application/EIS Consultation.....	4-24
4.6.1.1	Information Distribution Methods.....	4-24
4.6.1.2	Environmental Assessment Procedures.....	4-25
4.6.1.3	Consultation Activities.....	4-28
4.6.1.4	Issues and Concerns Raised by Aboriginal Groups.....	4-35
4.6.2	Consultation during Application/EIS Review.....	4-40
4.6.2.1	Proposed Aboriginal Consultation during Application Review.....	4-40
4.6.2.2	Process for Resolving Outstanding Issues.....	4-42
4.6.3	Consultation during Permitting.....	4-42

4.7	Public and Agency Information Distribution and Consultation.....	4-43
4.7.1	Overview .....	4-43
4.7.1.1	Introduction.....	4-43
4.7.1.2	Consultation Objectives.....	4-43
4.7.1.3	Consultation Requirements.....	4-45
4.7.1.4	Public Consultation Plan .....	4-47
4.7.2	Pre-Application/EIS Consultation Phase .....	4-51
4.7.2.1	Initial Engagement with Community (2011 to May 2014).....	4-51
4.7.2.2	Pre-Application/EIS Consultation with Government Agencies and Local Governments.....	4-60
4.7.2.3	Key Issues / Concerns Raised in Pre-Application Pre-EIS Phase.....	4-65
4.7.2.4	New “Ajax South” General Arrangement (May 29, 2014).....	4-76
4.7.2.5	Post-GA Announcement Consultation Phase (June 2014 to EIS Submission).....	4-77
4.7.2.6	Assessing the Pre-Application Pre-EIS Consultation Process/Best Practices for Application Review Phase.....	4-79
4.7.3	Consultation Planned during Application/EIS Review .....	4-84
4.7.3.1	Consultation Activities Planned with the Public .....	4-84
4.7.3.2	Consultation Activities Planned with Government/ Agencies .....	4-91
4.7.4	Post-Application/EIS Review Phase .....	4-91
4.7.5	Conclusion.....	4-92
4.8	References.....	4-93
PART B. ASSESSMENT OF POTENTIAL EFFECTS, MITIGATION MEASURES, AND SIGNIFICANCE OF RESIDUAL EFFECTS		
5.	Effects Assessment Methodology .....	5-1
5.1	Introduction and Approach .....	5-1
5.1.1	Introduction .....	5-1
5.1.2	Approach and Presentation .....	5-4
5.2	Assessment Methodology .....	5-4
5.2.1	Rationale .....	5-4
5.2.2	Background .....	5-7
5.2.2.1	Regional Overview.....	5-7
5.2.2.2	Historical Activities.....	5-7
5.2.2.3	Baseline Studies .....	5-7
5.2.3	Assessment Boundaries.....	5-9

5.2.3.1	Spatial Boundaries.....	5-9
5.2.3.2	Temporal Boundaries.....	5-10
5.2.3.3	Administrative Boundaries .....	5-10
5.2.3.4	Technical Boundaries .....	5-11
5.2.4	Potential Effects and Proposed Mitigation Measures .....	5-11
5.2.4.1	Identify Potential Effects .....	5-11
5.2.4.2	Discuss Potential Effects.....	5-16
5.2.4.3	Mitigation Measures .....	5-17
5.2.5	Residual Project Effects and their Significance .....	5-18
5.2.5.1	Summary of Residual Effects.....	5-18
5.2.5.2	Criteria for Characterization of Residual Effects .....	5-18
5.2.5.3	Characterization of Residual Effects .....	5-20
5.2.5.4	Significance of Residual Project Effects.....	5-21
5.2.5.5	Characterization of Likelihood and Confidence .....	5-23
5.2.5.6	Summary of Residual Effects Assessment and Significance.....	5-23
5.3	Cumulative Effects .....	5-23
5.3.1	Identification of Other Actions that May Affect Project Valued Components .....	5-24
5.3.1.1	Past Industrial Actions.....	5-30
5.3.1.2	Ongoing Industrial Actions.....	5-32
5.3.1.3	Future Industrial Actions .....	5-34
5.3.1.4	Other Land Use Activities .....	5-36
5.3.1.5	Community Infrastructure .....	5-38
5.3.1.6	Transportation Infrastructure .....	5-40
5.3.2	Interaction between Residual Project and Other Project Effects.....	5-43
5.3.3	Proposed Mitigation Measures.....	5-43
5.3.4	Evaluation of Significance of Residual Cumulative Effects .....	5-44
5.4	Conclusion.....	5-46
5.5	References.....	5-47
6.	Assessment of Potential Environmental Effects.....	6.1-1
6.1	Greenhouse Gas Management.....	6.1-1
6.1.1	Rationale .....	6.1-1
6.1.2	Background .....	6.1-4
6.1.2.1	Regional Overview.....	6.1-4
6.1.2.2	Historical Activities.....	6.1-4
6.1.2.3	Baseline Studies .....	6.1-6

6.1.3	Assessment Boundaries.....	6.1-21
6.1.3.1	Spatial Boundaries.....	6.1-21
6.1.3.2	Temporal Boundaries.....	6.1-25
6.1.3.3	Administrative Boundaries.....	6.1-25
6.1.3.4	Technical Boundaries.....	6.1-25
6.1.4	Potential Effects of the Project and Proposed Mitigation for Greenhouse Gas Management.....	6.1-25
6.1.4.1	Identifying Potential Effects on Greenhouse Gas Management.....	6.1-25
6.1.4.2	Effects on Greenhouse Gas Management.....	6.1-26
6.1.4.3	Mitigation Measures for Greenhouse Gas Management .....	6.1-43
6.1.5	Residual Project Effects and Their Significance .....	6.1-45
6.1.5.1	Summary of Residual Effects.....	6.1-45
6.1.5.2	Criteria for Characterization of Residual Effects .....	6.1-49
6.1.5.3	Characterization of Residual Effects.....	6.1-49
6.1.5.4	Significance of Residual Effects .....	6.1-49
6.1.5.5	Characterization of Likelihood and Confidence .....	6.1-50
6.1.5.6	Summary of Residual Effects Assessment and Significance.....	6.1-50
6.1.6	Cumulative Effects .....	6.1-50
6.1.7	Conclusion.....	6.1-53
6.2	Geology, Landforms, and Soils.....	6.2-1
6.2.1	Rationale .....	6.2-1
6.2.2	Background .....	6.2-2
6.2.2.1	Regional Overview.....	6.2-2
6.2.2.2	Historical Activities.....	6.2-4
6.2.2.3	Baseline Studies .....	6.2-4
6.2.3	Assessment Boundaries.....	6.2-24
6.2.3.1	Spatial Boundaries.....	6.2-24
6.2.3.2	Temporal Boundaries.....	6.2-27
6.2.3.3	Technical Boundaries.....	6.2-27
6.2.4	Potential Effects of the Project and Proposed Mitigation for Geology, Landforms and Soils .....	6.2-27
6.2.4.1	Identifying Potential Effects on Geology, Landforms and Soils.....	6.2-27
6.2.4.2	Effects on Geology, Landforms and Soils .....	6.2-32
6.2.4.3	Mitigation Measures for Geology, Landforms and Soils .....	6.2-39
6.2.5	Residual Effects and Their Significance .....	6.2-44

	6.2.5.1	Summary of Residual Effects .....	6.2-44
	6.2.5.2	Characterization of Residual Effects .....	6.2-45
	6.2.5.3	Significance of Residual Effects .....	6.2-45
	6.2.5.4	Characterization of Likelihood and Confidence .....	6.2-45
	6.2.5.5	Summary of Residual Effects Assessment and Significance.....	6.2-46
6.2.6		Cumulative Effects Assessment .....	6.2-46
	6.2.6.1	Introduction.....	6.2-46
	6.2.6.2	Identification of Other Actions that May Affect Geology, Landforms and Soils .....	6.2-46
6.2.7		Conclusion.....	6.2-46
6.3		Surface Water Quality .....	6.3-1
	6.3.1	Rationale .....	6.3-1
	6.3.2	Background .....	6.3-5
	6.3.2.1	Regional Overview .....	6.3-5
	6.3.2.2	Historical Activities.....	6.3-6
	6.3.2.3	Baseline Studies .....	6.3-9
6.3.3		Assessment Boundaries.....	6.3-55
	6.3.3.1	Spatial Boundaries.....	6.3-55
	6.3.3.2	Temporal Boundaries.....	6.3-55
	6.3.3.3	Administrative Boundaries .....	6.3-56
	6.3.3.4	Technical Boundaries .....	6.3-56
6.3.4		Potential Effects of the Project and Proposed Mitigation for Surface Water Quality.....	6.3-57
	6.3.4.1	Identifying Potential Effects on Surface Water Quality .....	6.3-57
	6.3.4.2	Effects on Surface Water Quality.....	6.3-62
	6.3.4.3	Mitigation Measures for Surface Water Quality .....	6.3-102
6.3.5		Residual Effects and Their Significance .....	6.3-108
	6.3.5.1	Summary of Residual Effects .....	6.3-108
	6.3.5.2	Criteria for Characterization of Residual Effects .....	6.3-116
	6.3.5.3	Characterization of Residual Effects .....	6.3-119
	6.3.5.4	Significance of Residual Effects .....	6.3-126
	6.3.5.5	Characterization of Likelihood and Confidence .....	6.3-127
	6.3.5.6	Summary of Residual Effects Assessment and Significance.....	6.3-128
6.3.6		Cumulative Effects Assessment .....	6.3-128
	6.3.6.1	Introduction.....	6.3-128

6.3.6.2	Identification of Other Actions that May Affect Surface Water Quality .....	6.3-129
6.3.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.3-130
6.3.6.4	Proposed Mitigation Measures .....	6.3-130
6.3.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.3-130
6.3.7	Conclusion .....	6.3-133
6.4	Surface Water Quantity .....	6.4-1
6.4.1	Rationale .....	6.4-1
6.4.2	Background .....	6.4-2
6.4.2.1	Regional Overview .....	6.4-2
6.4.2.2	Historical Activities .....	6.4-4
6.4.2.3	Baseline Studies .....	6.4-7
6.4.3	Assessment Boundaries .....	6.4-18
6.4.3.1	Spatial Boundaries .....	6.4-19
6.4.3.2	Temporal Boundaries .....	6.4-20
6.4.3.3	Administrative Boundaries .....	6.4-20
6.4.3.4	Technical Boundaries .....	6.4-20
6.4.4	Potential Effects of the Project and Proposed Mitigation for Surface Water Quantity .....	6.4-20
6.4.4.1	Identifying Potential Effects on Surface Water Quantity .....	6.4-25
6.4.4.2	Key Effects on Surface Water Quantity .....	6.4-30
6.4.4.3	Mitigation Measures for Surface Water Quantity .....	6.4-33
6.4.5	Residual Effects and Their Significance .....	6.4-34
6.4.5.1	Quantification of Residual Effects .....	6.4-34
6.4.5.2	Summary of Residual Effects .....	6.4-44
6.4.5.3	Criteria for Characterization of Residual Effects .....	6.4-44
6.4.5.4	Characterization of Residual Effects .....	6.4-44
6.4.5.5	Characterization of Residual Effects .....	6.4-52
6.4.5.6	Significance of Residual Effects .....	6.4-54
6.4.5.7	Characterization of Likelihood and Confidence .....	6.4-54
6.4.5.8	Summary of Residual Effects Assessment and Significance .....	6.4-55
6.4.6	Cumulative Effects Assessment .....	6.4-56
6.4.6.1	Introduction .....	6.4-56
6.4.6.2	Identification of Other Actions that May Affect Surface Water Quantity .....	6.4-56

	6.4.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.4-56
	6.4.6.4	Proposed Mitigation Measures.....	6.4-59
	6.4.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.4-59
	6.4.7	Conclusion.....	6.4-61
6.5		Groundwater Quality.....	6.5-1
	6.5.1	Rationale .....	6.5-1
	6.5.2	Background .....	6.5-5
	6.5.2.1	Regional Overview.....	6.5-5
	6.5.2.2	Historical Activities.....	6.5-5
	6.5.2.3	Baseline Studies .....	6.5-6
	6.5.3	Assessment Boundaries.....	6.5-18
	6.5.3.1	Spatial Boundaries.....	6.5-18
	6.5.3.2	Temporal Boundaries.....	6.5-21
	6.5.3.3	Administrative Boundaries .....	6.5-21
	6.5.3.4	Technical Boundaries .....	6.5-21
	6.5.4	Potential Effects of the Project and Proposed Mitigation for Groundwater Quality .....	6.5-21
	6.5.4.1	Identifying Potential Effects on Groundwater Quality .....	6.5-21
	6.5.4.2	Effects on Groundwater Quality .....	6.5-26
	6.5.4.3	Mitigation Measures for Groundwater Quality .....	6.5-31
	6.5.5	Residual Effects and Their Significance .....	6.5-35
	6.5.5.1	Summary of Residual Effects.....	6.5-35
	6.5.5.2	Criteria for Characterization of Residual Effects .....	6.5-36
	6.5.5.3	Characterization of Residual Effects.....	6.5-38
	6.5.5.4	Significance of Residual Effects .....	6.5-39
	6.5.5.5	Characterization of Likelihood and Confidence .....	6.5-39
	6.5.5.6	Summary of Residual Effects Assessment and Significance.....	6.5-39
	6.5.6	Cumulative Effects Assessment .....	6.5-40
	6.5.7	Conclusion.....	6.5-40
6.6		Groundwater Quantity .....	6.6-1
	6.6.1	Rationale .....	6.6-1
	6.6.2	Background .....	6.6-4
	6.6.2.1	Regional Overview.....	6.6-4
	6.6.2.2	Historical Activities.....	6.6-7
	6.6.2.3	Baseline Studies .....	6.6-9

6.6.3	Assessment Boundaries.....	6.6-29
6.6.3.1	Spatial Boundaries.....	6.6-29
6.6.3.2	Temporal Boundaries.....	6.6-30
6.6.3.3	Administrative Boundaries.....	6.6-30
6.6.3.4	Technical Boundaries.....	6.6-31
6.6.4	Potential Effects of the Project and Proposed Mitigation for Groundwater Quantity.....	6.6-32
6.6.4.1	Identifying Potential Effects on Groundwater Quantity.....	6.6-32
6.6.4.2	Effects on Groundwater Quantity.....	6.6-37
6.6.4.3	Mitigation Measures for Groundwater Quantity.....	6.6-49
6.6.5	Residual Project Effects and Their Significance.....	6.6-51
6.6.5.1	Summary of Residual Effects.....	6.6-51
6.6.5.2	Criteria for Characterization of Residual Effects.....	6.6-51
6.6.5.3	Characterization of Residual Effects.....	6.6-51
6.6.5.4	Significance of Residual Effects.....	6.6-55
6.6.5.5	Characterization of Likelihood and Confidence.....	6.6-57
6.6.5.6	Summary of Residual Effects Assessment and Significance.....	6.6-57
6.6.6	Cumulative Effects Assessment.....	6.6-57
6.6.6.1	Introduction.....	6.6-57
6.6.6.2	Identification of Other Actions that May Affect Groundwater Quantity.....	6.6-58
6.6.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects.....	6.6-58
6.6.6.4	Proposed Mitigation Measures.....	6.6-61
6.6.6.5	Evaluation of Significance of Residual Cumulative Effects.....	6.6-61
6.6.7	Conclusion.....	6.6-61
6.7	Fish Populations and Fish Habitat.....	6.7-1
6.7.1	Rationale.....	6.7-1
6.7.2	Background.....	6.7-4
6.7.2.1	Regional Overview.....	6.7-4
6.7.2.2	Historical Activities.....	6.7-8
6.7.2.3	Baseline Studies.....	6.7-9
6.7.3	Assessment Boundaries.....	6.7-33
6.7.3.1	Spatial Boundaries.....	6.7-33
6.7.3.2	Temporal Boundaries.....	6.7-34
6.7.3.3	Administrative Boundaries.....	6.7-34

	6.7.3.4	Technical Boundaries .....	6.7-34
6.7.4		Potential Effects of the Project and Proposed Mitigation for Fish and Fish Habitat .....	6.7-34
	6.7.4.1	Identifying Potential Effects on Fish and Fish Habitat.....	6.7-34
	6.7.4.2	Effects on Fish and Fish Habitat .....	6.7-39
	6.7.4.3	Mitigation Measures for Fish and Fish Habitat.....	6.7-63
6.7.5		Residual Effects and Their Significance .....	6.7-77
	6.7.5.1	Summary of Residual Effects .....	6.7-77
	6.7.5.2	Criteria for Characterization of Residual Effects .....	6.7-78
	6.7.5.3	Characterization of Residual Effects .....	6.7-78
	6.7.5.4	Significance of Residual Effects .....	6.7-85
	6.7.5.5	Characterization of Likelihood and Confidence .....	6.7-86
	6.7.5.6	Summary of Residual Effects Assessment and Significance.....	6.7-86
6.7.6		Cumulative Effects Assessment .....	6.7-86
	6.7.6.1	Introduction.....	6.7-86
	6.7.6.2	Identification of Other Actions that May Affect Fish and Fish Habitat .....	6.7-86
	6.7.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.7-91
	6.7.6.4	Proposed Mitigation Measures.....	6.7-91
	6.7.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.7-91
6.7.7		Conclusion.....	6.7-91
6.8		Rare Plants .....	6.8-1
	6.8.1	Rationale .....	6.8-1
	6.8.1.1	Selection of Rare Plants as a Valued Component .....	6.8-3
	6.8.1.2	Selection of Indicators.....	6.8-3
6.8.2		Assessment Boundaries.....	6.8-4
	6.8.2.1	Spatial Boundaries.....	6.8-5
	6.8.2.2	Temporal Boundaries.....	6.8-6
	6.8.2.3	Administrative Boundaries .....	6.8-6
	6.8.2.4	Technical Boundaries .....	6.8-6
6.8.3		Background .....	6.8-6
	6.8.3.1	Regulatory and Policy Framework .....	6.8-6
	6.8.3.2	Regional Overview .....	6.8-12
	6.8.3.3	Historical Activities.....	6.8-13
	6.8.3.4	Baseline Studies .....	6.8-13

6.8.4	Potential Effects of the Project and Proposed Mitigation for Rare Plants.....	6.8-25
6.8.4.1	Identifying Potential Effects on Rare Plants .....	6.8-25
6.8.4.2	Effects on Rare Plants.....	6.8-30
6.8.4.3	Mitigation Measures for Rare Plants .....	6.8-41
6.8.5	Residual Effects and Their Significance .....	6.8-43
6.8.5.1	Summary of Residual Effects.....	6.8-43
6.8.5.2	Criteria for Characterization of Residual Effects .....	6.8-43
6.8.5.3	Characterization of Residual Effects.....	6.8-43
6.8.5.4	Significance of Residual Effects .....	6.8-44
6.8.5.5	Characterization of Likelihood and Confidence .....	6.8-44
6.8.5.6	Summary of Residual Effects Assessment and Significance.....	6.8-44
6.8.6	Cumulative Effects Assessment .....	6.8-44
6.8.6.1	Introduction.....	6.8-44
6.8.6.1	Identification of Other Actions that May Affect Rare Plants .....	6.8-47
6.8.6.2	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.8-47
6.8.6.3	Proposed Mitigation Measures.....	6.8-48
6.8.6.4	Evaluation of Significance of Residual Cumulative Effects .....	6.8-53
6.8.7	Conclusion.....	6.8-54
6.9	Rare and Sensitive Ecological Communities .....	6.9-1
6.9.1	Rationale .....	6.9-1
6.9.1.1	Selection of Rare and Sensitive Ecological Communities as a Valued Component.....	6.9-1
6.9.1.2	Selection of Indicators .....	6.9-2
6.9.2	Assessment Boundaries.....	6.9-5
6.9.2.1	Spatial Boundaries.....	6.9-5
6.9.2.2	Temporal Boundaries.....	6.9-6
6.9.2.1	Administrative Boundaries .....	6.9-11
6.9.2.2	Technical Boundaries .....	6.9-11
6.9.3	Background .....	6.9-11
6.9.3.1	Regulatory and Policy Framework .....	6.9-11
6.9.3.2	Regional Overview.....	6.9-12
6.9.3.3	Historical Activities.....	6.9-14
6.9.3.4	Baseline Studies .....	6.9-15

6.9.4	Potential Effects of the Project and Proposed Mitigation for RSEC .....	6.9-22
6.9.4.1	Identifying Potential Effects on RSEC .....	6.9-22
6.9.4.2	Effects on RSEC.....	6.9-26
6.9.4.3	Mitigation Measures for RSEC .....	6.9-41
6.9.5	Residual Effects and Their Significance .....	6.9-45
6.9.5.1	Summary of Residual Effects .....	6.9-45
6.9.5.2	Criteria for Characterization of Residual Effects .....	6.9-45
6.9.5.3	Characterization of Residual Effects .....	6.9-46
6.9.5.4	Significance of Residual Effects .....	6.9-46
6.9.5.5	Characterization of Likelihood and Confidence .....	6.9-46
6.9.5.6	Summary of Residual Effects Assessment and Significance.....	6.9-47
6.9.6	Cumulative Effects Assessment .....	6.9-47
6.9.6.1	Introduction.....	6.9-47
6.9.6.2	Identification of Other Actions that May Affect RSEC.....	6.9-48
6.9.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.9-48
6.9.6.4	Proposed Mitigation Measures.....	6.9-54
6.9.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.9-54
6.9.7	Conclusion.....	6.9-55
6.9.7.1	ECAR.....	6.9-55
6.9.7.2	Wetlands .....	6.9-55
6.9.7.3	Rock Outcrop .....	6.9-56
6.9.7.4	Old-growth Forests .....	6.9-56
6.10	Grasslands .....	6.10-1
6.10.1	Rationale .....	6.10-1
6.10.1.1	Selection of Grasslands as a Valued Component.....	6.10-3
6.10.1.2	Selection of Indicators .....	6.10-3
6.10.2	Assessment Boundaries.....	6.10-4
6.10.2.1	Spatial Boundaries.....	6.10-4
6.10.2.2	Temporal Boundaries.....	6.10-7
6.10.2.3	Administrative Boundaries .....	6.10-8
6.10.2.4	Technical Boundaries .....	6.10-8
6.10.3	Background .....	6.10-8
6.10.3.1	Regulatory and Policy Framework .....	6.10-8
6.10.3.2	Regional Overview .....	6.10-11
6.10.3.3	Historical Activities.....	6.10-11

6.10.3.4	Baseline Studies .....	6.10-12
6.10.4	Potential Effects of the Project and Proposed Mitigation for Grasslands .....	6.10-18
6.10.4.1	Identifying Potential Effects on Grasslands.....	6.10-18
6.10.4.2	Effects on Grasslands .....	6.10-24
6.10.4.3	Mitigation Measures for Grasslands.....	6.10-32
6.10.5	Residual Effects and Their Significance .....	6.10-39
6.10.5.1	Summary of Residual Effects.....	6.10-39
6.10.5.2	Criteria for Characterization of Residual Effects .....	6.10-39
6.10.5.3	Characterization of Residual Effects.....	6.10-40
6.10.5.4	Significance of Residual Effects .....	6.10-40
6.10.5.5	Characterization of Likelihood and Confidence .....	6.10-40
6.10.5.6	Summary of Residual Effects Assessment and Significance.....	6.10-43
6.10.6	Cumulative Effects Assessment .....	6.10-43
6.10.6.1	Introduction.....	6.10-43
6.10.6.2	Identification of Other Actions that May Affect Grasslands .....	6.10-45
6.10.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects.....	6.10-45
6.10.6.4	Proposed Mitigation Measures.....	6.10-45
6.10.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.10-46
6.10.7	Conclusion.....	6.10-46
6.11	Terrestrial Invertebrates.....	6.11-1
6.11.1	Rationale .....	6.11-1
6.11.1.1	Selection of Terrestrial Invertebrates as a Valued Component.....	6.11-1
6.11.1.2	Selection of Indicators.....	6.11-3
6.11.2	Assessment Boundaries.....	6.11-5
6.11.2.1	Spatial Boundaries.....	6.11-5
6.11.2.2	Temporal Boundaries.....	6.11-6
6.11.2.3	Administrative Boundaries .....	6.11-6
6.11.2.4	Technical Boundaries .....	6.11-11
6.11.3	Background .....	6.11-11
6.11.3.1	Regulatory and Policy Framework .....	6.11-11
6.11.3.2	Regional Overview .....	6.11-12
6.11.3.3	Historical Activities.....	6.11-16

	6.11.3.4	Baseline Studies .....	6.11-17
6.11.4		Potential Effects of the Project and Proposed Mitigation for Terrestrial Invertebrates .....	6.11-22
	6.11.4.1	Identifying Potential Effects on Terrestrial Invertebrates .....	6.11-22
	6.11.4.2	Effects on Terrestrial Invertebrates .....	6.11-27
	6.11.4.3	Mitigation Measures for Terrestrial Invertebrates .....	6.11-29
6.11.5		Residual Effects and their Significance .....	6.11-31
	6.11.5.1	Summary of Residual Effects .....	6.11-31
6.11.6		Conclusion.....	6.11-32
6.12		Amphibians .....	6.12-1
	6.12.1	Rationale.....	6.12-1
	6.12.1.1	Selection of Amphibians as a VC .....	6.12-3
	6.12.1.2	Selection of Indicators .....	6.12-4
6.12.2		Assessment Boundaries.....	6.12-5
	6.12.2.1	Spatial Boundaries.....	6.12-5
	6.12.2.2	Temporal Boundaries.....	6.12-6
	6.12.2.3	Administrative Boundaries .....	6.12-6
	6.12.2.4	Technical Boundaries .....	6.12-11
6.12.3		Background .....	6.12-11
	6.12.3.1	Regulatory and Policy Framework .....	6.12-11
	6.12.3.2	Regional Overview.....	6.12-12
	6.12.3.3	Historical Activities.....	6.12-13
	6.12.3.4	Baseline Studies .....	6.12-13
6.12.4		Potential Effects of the Project and Proposed Mitigation for Amphibians.....	6.12-22
	6.12.4.1	Identifying Potential Effects on Amphibians.....	6.12-22
	6.12.4.2	Effects on Amphibians.....	6.12-32
	6.12.4.3	Mitigation Measures for Amphibians.....	6.12-56
6.12.5		Residual Effects and Their Significance .....	6.12-64
	6.12.5.1	Summary of Residual Effects .....	6.12-64
	6.12.5.2	Criteria for Characterization of Residual Effects .....	6.12-65
	6.12.5.3	Characterization of Residual Effects .....	6.12-65
	6.12.5.4	Significance of Residual Effects .....	6.12-66
	6.12.5.5	Characterization of Likelihood and Confidence .....	6.12-69
	6.12.5.6	Summary of Residual Effects Assessment and Significance.....	6.12-69
6.12.6		Cumulative Effects Assessment .....	6.12-70
	6.12.6.1	Introduction.....	6.12-70

6.12.6.2	Identification of Other Actions that May Affect Amphibians .....	6.12-70
6.12.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.12-74
6.12.6.4	Proposed Mitigation Measures.....	6.12-75
6.12.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.12-76
6.12.7	Conclusion.....	6.12-79
6.13	Reptiles.....	6.13-1
6.13.1	Rationale .....	6.13-1
6.13.1.1	Selection of Reptiles as a VC .....	6.13-3
6.13.1.2	Selection of Indicators .....	6.13-3
6.13.2	Assessment Boundaries.....	6.13-5
6.13.2.1	Spatial Boundaries.....	6.13-5
6.13.2.2	Temporal Boundaries.....	6.13-6
6.13.2.3	Administrative Boundaries .....	6.13-6
6.13.2.4	Technical Boundaries .....	6.13-6
6.13.3	Background .....	6.13-11
6.13.3.1	Regulatory and Policy Framework .....	6.13-11
6.13.3.2	Regional Overview .....	6.13-12
6.13.3.3	Historical Activities.....	6.13-15
6.13.3.4	Baseline Studies .....	6.13-16
6.13.4	Potential Effects of the Project and Proposed Mitigation for Reptiles ...	6.13-22
6.13.4.1	Identifying Potential Effects on Reptiles .....	6.13-22
6.13.4.2	Effects on Reptiles.....	6.13-37
6.13.4.3	Mitigation Measures for Reptiles .....	6.13-43
6.13.5	Residual Effects and Their Significance .....	6.13-45
6.13.6	Cumulative Effects Assessment .....	6.13-45
6.13.7	Conclusion.....	6.13-45
6.14	Migratory Birds.....	6.14-1
6.14.1	Rationale .....	6.14-1
6.14.1.1	Selection of Migratory Birds as a Valued Component .....	6.14-1
6.14.1.2	Selection of Indicators .....	6.14-3
6.14.2	Assessment Boundaries.....	6.14-6
6.14.2.1	Spatial Boundaries.....	6.14-6
6.14.2.2	Temporal Boundaries.....	6.14-9
6.14.2.3	Administrative Boundaries .....	6.14-10
6.14.2.4	Technical Boundaries .....	6.14-10

6.14.3	Background .....	6.14-10
6.14.3.1	Regulatory and Policy Framework .....	6.14-10
6.14.3.2	Regional Overview .....	6.14-14
6.14.3.3	Historical Activities.....	6.14-17
6.14.3.4	Baseline Studies .....	6.14-17
6.14.4	Potential Effects of the Project and Proposed Mitigation for Migratory Birds .....	6.14-44
6.14.4.1	Identifying Potential Effects on Migratory Birds .....	6.14-44
6.14.4.2	Effects on Migratory Birds .....	6.14-48
6.14.4.3	Mitigation Measures for Migratory Birds .....	6.14-63
6.14.5	Residual Effects and Their Significance .....	6.14-72
6.14.5.1	Summary of Residual Effects .....	6.14-72
6.14.5.2	Criteria for Characterization of Residual Effects .....	6.14-73
6.14.5.3	Characterization of Residual Effects .....	6.14-73
6.14.5.4	Significance of Residual Effects .....	6.14-74
6.14.5.5	Characterization of Likelihood and Confidence .....	6.14-74
6.14.5.6	Summary of Residual Effects Assessment and Significance.....	6.14-77
6.14.6	Cumulative Effects Assessment .....	6.14-77
6.14.6.1	Introduction.....	6.14-77
6.14.6.2	Identification of Other Actions that May Affect Migratory Birds.....	6.14-77
6.14.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.14-78
6.14.6.4	Proposed Mitigation Measures.....	6.14-82
6.14.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.14-82
6.14.7	Conclusion.....	6.14-83
6.15	Raptors .....	6.15-1
6.15.1	Rationale .....	6.15-1
6.15.1.1	Selection of Raptors as a Valued Component.....	6.15-3
6.15.1.2	Selection of Indicators .....	6.15-3
6.15.2	Assessment Boundaries.....	6.15-6
6.15.2.1	Spatial Boundaries.....	6.15-7
6.15.2.2	Temporal Boundaries.....	6.15-8
6.15.2.3	Administrative Boundaries .....	6.15-8
6.15.2.4	Technical Boundaries .....	6.15-8
6.15.3	Background .....	6.15-8

6.15.3.1	Regulatory and Policy Framework .....	6.15-8
6.15.3.2	Regional Overview .....	6.15-13
6.15.3.3	Historical Activities .....	6.15-16
6.15.3.4	Baseline Studies .....	6.15-17
6.15.4	Potential Effects of the Project and Proposed Mitigation for Raptors ...	6.15-31
6.15.4.1	Identifying Potential Effects on Raptors.....	6.15-32
6.15.4.2	Effects on Raptors.....	6.15-36
6.15.4.3	Mitigation Measures for Raptors.....	6.15-50
6.15.5	Residual Effects and Their Significance .....	6.15-54
6.15.5.1	Summary of Residual Effects .....	6.15-54
6.15.5.2	Criteria for Characterization of Residual Effects .....	6.15-54
6.15.5.3	Characterization of Residual Effects .....	6.15-55
6.15.5.4	Significance of Residual Effects .....	6.15-56
6.15.5.5	Characterization of Likelihood and Confidence .....	6.15-56
6.15.5.6	Summary of Residual Effects Assessment and Significance.....	6.15-56
6.15.6	Cumulative Effects Assessment .....	6.15-58
6.15.6.1	Introduction.....	6.15-58
6.15.6.2	Identification of Other Actions that May Affect Raptors.....	6.15-60
6.15.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.15-60
6.15.6.4	Proposed Mitigation Measures.....	6.15-63
6.15.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.15-63
6.15.7	Conclusion.....	6.15-64
6.16	Non-migratory Gamebirds.....	6.16-1
6.16.1	Rationale .....	6.16-1
6.16.1.1	Selection of Non-migratory Gamebirds as a Valued Component .....	6.16-3
6.16.1.2	Selection of Indicators .....	6.16-3
6.16.2	Assessment Boundaries .....	6.16-5
6.16.2.1	Spatial Boundaries.....	6.16-5
6.16.2.2	Temporal Boundaries.....	6.16-6
6.16.2.3	Administrative Boundaries .....	6.16-11
6.16.2.4	Technical Boundaries .....	6.16-11
6.16.3	Background .....	6.16-11
6.16.3.1	Regulatory and Policy Framework .....	6.16-11
6.16.3.2	Regional Overview.....	6.16-12

6.16.3.3	Historical Activities.....	6.16-13
6.16.3.4	Baseline Studies .....	6.16-13
6.16.4	Potential Effects of the Project and Proposed Mitigation for Non-migratory Gamebirds .....	6.16-24
6.16.4.1	Identifying Potential Effects on Non-migratory Gamebirds .....	6.16-24
6.16.4.2	Effects on Non-migratory Gamebirds .....	6.16-32
6.16.4.3	Mitigation Measures for Non-migratory Gamebirds .....	6.16-45
6.16.5	Residual Effects and their Significance .....	6.16-50
6.16.5.1	Summary of Residual Effects.....	6.16-50
6.16.5.2	Criteria for Characterization of Residual Effects .....	6.16-50
6.16.5.3	Characterization of Residual Effects.....	6.16-50
6.16.5.4	Significance.....	6.16-53
6.16.5.5	Characterization of Likelihood and Confidence .....	6.16-54
6.16.5.6	Summary of Residual Effects Assessment and Significance.....	6.16-54
6.16.6	Cumulative Effects Assessment .....	6.16-54
6.16.6.1	Introduction.....	6.16-54
6.16.6.2	Identification of Other Actions That May Affect Non-migratory Gamebirds.....	6.16-55
6.16.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	6.16-55
6.16.6.4	Proposed Mitigation Measures.....	6.16-59
6.16.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.16-60
6.16.7	Conclusion.....	6.16-61
6.17	Mammals .....	6.17-1
6.17.1	Rationale .....	6.17-1
6.17.1.1	Selection of Mammals as a Valued Component.....	6.17-3
6.17.1.2	Selection of Indicators .....	6.17-3
6.17.2	Assessment Boundaries.....	6.17-8
6.17.2.1	Spatial Boundaries.....	6.17-8
6.17.2.2	Temporal Boundaries.....	6.17-11
6.17.2.3	Administrative Boundaries .....	6.17-12
6.17.2.4	Technical Boundaries .....	6.17-12
6.17.3	Background .....	6.17-12
6.17.3.1	Regulatory and Policy Framework .....	6.17-12
6.17.3.2	Regional Overview.....	6.17-15

6.17.3.3	Historical Activities.....	6.17-18
6.17.3.4	Baseline Studies .....	6.17-19
6.17.4	Potential Effects of the Project and Proposed Mitigation for Mammals.....	6.17-36
6.17.4.1	Identifying Potential Effects on Mammals.....	6.17-36
6.17.4.2	Effects on Mammals.....	6.17-46
6.17.4.3	Mitigation Measures for Mammals.....	6.17-69
6.17.5	Residual Effects and Their Significance .....	6.17-74
6.17.5.1	Summary of Residual Effects.....	6.17-74
6.17.5.2	Criteria for Characterization of Residual Effects .....	6.17-75
6.17.5.3	Characterization of Residual Effects.....	6.17-76
6.17.5.4	Significance of Residual Effects .....	6.17-79
6.17.5.5	Characterization of Likelihood and Confidence .....	6.17-80
6.17.5.6	Summary of Residual Effects Assessment and Significance.....	6.17-81
6.17.6	Cumulative Effects Assessment .....	6.17-82
6.17.6.1	Introduction.....	6.17-82
6.17.6.2	Identification of Other Actions That May Affect Mammals .....	6.17-82
6.17.6.3	Project Effects and Other Project or Activity Effects .....	6.17-82
6.17.6.4	Proposed Mitigation Measures.....	6.17-84
6.17.6.5	Evaluation of Significance of Residual Cumulative Effects .....	6.17-88
6.17.7	Conclusions .....	6.17-91
6.18	Summary of Assessment of Potential Environmental Effects .....	6.18-1
6.19	References.....	6.19-1
7.	Assessment of Potential Economic Effects.....	7.1-1
7.1	Economic Growth.....	7.1-1
7.1.1	Rationale .....	7.1-1
7.1.2	Background .....	7.1-2
7.1.2.1	Regional Overview .....	7.1-2
7.1.2.2	Historical Activities.....	7.1-4
7.1.2.3	Baseline Studies .....	7.1-7
7.1.3	Assessment Boundaries.....	7.1-11
7.1.3.1	Spatial Boundaries.....	7.1-11
7.1.3.2	Temporal Boundaries.....	7.1-12
7.1.3.3	Administrative Boundaries .....	7.1-12

	7.1.3.4	Technical Boundaries .....	7.1-12
7.1.4		Project Benefits Related to Economic Growth.....	7.1-15
	7.1.4.1	Construction Phase.....	7.1-15
	7.1.4.2	Operations Phase.....	7.1-16
	7.1.4.3	Decommissioning and Closure, and Post Closure Phases.....	7.1-18
7.1.5		Potential Adverse Effects of the Project and Proposed Mitigation for Economic Growth.....	7.1-18
	7.1.5.1	Identifying Potential Adverse Effects on Economic Growth .....	7.1-19
	7.1.5.2	Effects on Economic Growth.....	7.1-22
	7.1.5.3	Mitigation Measures for Economic Growth .....	7.1-23
	7.1.5.4	Measures to Enhance Project Benefits .....	7.1-24
7.1.6		Residual Effects and Their Significance .....	7.1-24
	7.1.6.1	Summary of Residual Effects.....	7.1-24
	7.1.6.2	Criteria for Characterization of Residual Effects .....	7.1-26
	7.1.6.3	Characterization of Residual Effects.....	7.1-26
	7.1.6.4	Significance of Residual Effects .....	7.1-29
	7.1.6.5	Characterization of Likelihood and Confidence .....	7.1-29
	7.1.6.6	Summary of Residual Effects Assessment and Significance.....	7.1-29
7.1.7		Cumulative Effects Assessment .....	7.1-30
	7.1.7.1	Introduction.....	7.1-30
	7.1.7.2	Identification of Other Actions that May Affect Economic Growth .....	7.1-30
	7.1.7.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	7.1-30
	7.1.7.4	Proposed Mitigation Measures.....	7.1-31
	7.1.7.5	Evaluation of Significance of Residual Cumulative Effects .....	7.1-31
7.1.8		Conclusion.....	7.1-32
7.2		Labour Force, Employment and Training.....	7.2-1
	7.2.1	Rationale .....	7.2-1
	7.2.2	Background .....	7.2-3
	7.2.2.1	Regional Overview .....	7.2-3
	7.2.2.2	Historical Activities.....	7.2-3
	7.2.2.3	Baseline Studies .....	7.2-5
7.2.3		Assessment Boundaries.....	7.2-15
	7.2.3.1	Spatial Boundaries.....	7.2-15

	7.2.3.2	Temporal Boundaries.....	7.2-16
	7.2.3.3	Administrative Boundaries .....	7.2-16
	7.2.3.4	Technical Boundaries .....	7.2-16
7.2.4		Project Benefits Related to Labour Force, Employment and Training.....	7.2-21
	7.2.4.1	Construction Phase .....	7.2-22
	7.2.4.2	Operation Phase.....	7.2-25
	7.2.4.3	Decommissioning and Closure Phase .....	7.2-26
	7.2.4.4	Post-Closure Phase.....	7.2-27
7.2.5		Potential Adverse Effects of the Project and Proposed Mitigation for Labour Force, Employment and Training.....	7.2-27
	7.2.5.1	Identifying Potential Adverse Effects on Labour Force, Employment and Training .....	7.2-27
	7.2.5.2	Effects on Labour Force, Employment and Training.....	7.2-31
	7.2.5.3	Mitigation Measures for Labour Force, Employment and Training.....	7.2-31
7.2.6		Residual Effects and their Significance .....	7.2-33
	7.2.6.1	Summary of Residual Effects.....	7.2-33
	7.2.6.2	Criteria for Characterization of Residual Effects .....	7.2-34
	7.2.6.3	Characterization of Residual Effects.....	7.2-34
	7.2.6.4	Significance of Residual Effects .....	7.2-35
	7.2.6.5	Characterization of Likelihood and Confidence .....	7.2-36
	7.2.6.6	Summary of Residual Effects Assessment and Significance.....	7.2-39
7.2.7		Cumulative Effects Assessment .....	7.2-39
	7.2.7.1	Introduction.....	7.2-39
	7.2.7.2	Identification of Other Actions that May Affect Labour Force, Employment, and Training.....	7.2-39
	7.2.7.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	7.2-40
	7.2.7.4	Proposed Mitigation Measures.....	7.2-43
	7.2.7.5	Evaluation of Significance of Residual Cumulative Effects .....	7.2-43
7.2.8		Conclusion.....	7.2-43
7.3		Income.....	7.3-1
	7.3.1	Rationale .....	7.3-1
	7.3.2	Background .....	7.3-2
	7.3.2.1	Regional Overview .....	7.3-4
	7.3.2.2	Historical Activities.....	7.3-4

	7.3.2.3	Baseline Studies .....	7.3-5
7.3.3		Assessment Boundaries .....	7.3-16
	7.3.3.1	Spatial Boundaries.....	7.3-16
	7.3.3.2	Temporal Boundaries.....	7.3-16
	7.3.3.3	Administrative Boundaries .....	7.3-17
	7.3.3.4	Technical Boundaries .....	7.3-17
7.3.4		Project Benefits Related to Income.....	7.3-17
	7.3.4.1	Construction Phase.....	7.3-18
	7.3.4.2	Operation Phase.....	7.3-19
	7.3.4.3	Decommissioning and Closure Phase, and Post-Closure Phase.....	7.3-20
7.3.5		Potential Adverse Effects of the Project and Proposed Mitigation for Income.....	7.3-20
	7.3.5.1	Identifying Potential Adverse Effects on Income .....	7.3-20
	7.3.5.2	Effects on Income.....	7.3-24
	7.3.5.3	Mitigation Measures for Income .....	7.3-24
	7.3.5.4	Measures to Enhance Project Benefits .....	7.3-25
7.3.6		Residual Effects and Their Significance .....	7.3-25
	7.3.6.1	Summary of Residual Effects.....	7.3-25
	7.3.6.2	Criteria for Characterization of Residual Effects .....	7.3-26
	7.3.6.3	Characterization of Residual Effects .....	7.3-26
	7.3.6.4	Significance of Residual Effects .....	7.3-29
	7.3.6.5	Characterization of Likelihood and Confidence .....	7.3-29
	7.3.6.6	Summary of Residual Effects Assessment and Significance.....	7.3-29
7.3.7		Cumulative Effects Assessment .....	7.3-30
	7.3.7.1	Introduction.....	7.3-30
	7.3.7.2	Identification of Other Actions that May Affect Income.....	7.3-30
	7.3.7.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	7.3-30
	7.3.7.4	Proposed Mitigation Measures.....	7.3-34
	7.3.7.5	Evaluation of Significance of Residual Cumulative Effects .....	7.3-34
7.3.8		Conclusion.....	7.3-34
7.4		Business.....	7.4-1
	7.4.1	Rationale .....	7.4-1
	7.4.2	Background .....	7.4-1
	7.4.2.1	Regional Overview .....	7.4-3

	7.4.2.2	Historical Activities.....	7.4-3
	7.4.2.3	Baseline Studies .....	7.4-5
7.4.3		Assessment Boundaries.....	7.4-11
	7.4.3.1	Spatial Boundaries.....	7.4-11
	7.4.3.2	Temporal Boundaries.....	7.4-11
	7.4.3.3	Administrative Boundaries .....	7.4-11
	7.4.3.4	Technical Boundaries .....	7.4-12
7.4.4		Project Benefits Related to Business Opportunities.....	7.4-12
7.4.5		Potential Adverse Effects of the Project and Proposed Mitigation for Business Opportunities.....	7.4-17
	7.4.5.1	Identifying Potential Adverse Effects on Business .....	7.4-18
	7.4.5.2	Effects on Business .....	7.4-22
	7.4.5.3	Mitigation Measures for Business .....	7.4-24
7.4.6		Residual Effects and Their Significance .....	7.4-25
	7.4.6.1	Summary of Residual Effects .....	7.4-25
	7.4.6.2	Criteria for Characterization of Residual Effects .....	7.4-26
	7.4.6.3	Characterization of Residual Effects .....	7.4-26
	7.4.6.4	Significance of Residual Effects .....	7.4-29
	7.4.6.5	Characterization of Likelihood and Confidence .....	7.4-29
	7.4.6.6	Summary of Residual Effects Assessment and Significance.....	7.4-29
7.4.7		Cumulative Effects Assessment .....	7.4-30
	7.4.7.1	Introduction.....	7.4-30
	7.4.7.2	Identification of Other Actions that May Affect Business .....	7.4-30
	7.4.7.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	7.4-30
	7.4.7.4	Proposed Mitigation Measures.....	7.4-34
	7.4.7.5	Evaluation of Significance of Residual Cumulative Effects .....	7.4-35
7.4.8		Conclusion.....	7.4-36
7.5		Property Values .....	7.5-1
	7.5.1	Rationale .....	7.5-1
	7.5.2	Background .....	7.5-1
	7.5.2.1	Regional Overview .....	7.5-3
	7.5.2.2	Historical Activities.....	7.5-3
	7.5.2.3	Baseline Studies .....	7.5-3
7.5.3		Assessment Boundaries.....	7.5-13
	7.5.3.1	Spatial Boundaries.....	7.5-13

	7.5.3.2	Temporal Boundaries.....	7.5-13
	7.5.3.3	Administrative Boundaries .....	7.5-13
	7.5.3.4	Technical Boundaries .....	7.5-14
7.5.4		Potential Effects of the Project and Proposed Mitigation for Property Values .....	7.5-14
	7.5.4.1	Identifying Potential Effects on Property Values.....	7.5-14
	7.5.4.2	Effects on Property Values .....	7.5-23
	7.5.4.3	Mitigation Measures for Property Values.....	7.5-34
7.5.5		Residual Effects and Their Significance .....	7.5-37
	7.5.5.1	Summary of Residual Effects .....	7.5-37
	7.5.5.2	Criteria for Characterization of Residual Effects .....	7.5-37
	7.5.5.3	Characterization of Residual Effects .....	7.5-37
	7.5.5.4	Significance of Residual Effects .....	7.5-41
	7.5.5.5	Characterization of Likelihood and Confidence .....	7.5-42
	7.5.5.6	Summary of Residual Effects Assessment and Significance.....	7.5-42
7.5.6		Cumulative Effects Assessment .....	7.5-43
	7.5.6.1	Introduction.....	7.5-43
	7.5.6.2	Identification of Other Actions that May Affect Property Values.....	7.5-43
	7.5.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	7.5-43
	7.5.6.4	Proposed Mitigation Measures.....	7.5-44
	7.5.6.5	Evaluation of Significance of Residual Cumulative Effects .....	7.5-47
7.5.7		Conclusion.....	7.5-47
7.6		Economic Diversification.....	7.6-1
	7.6.1	Rationale .....	7.6-1
	7.6.2	Background .....	7.6-2
	7.6.2.1	Regional Overview .....	7.6-2
	7.6.2.2	Historical Activities.....	7.6-4
	7.6.2.3	Baseline Studies .....	7.6-5
7.6.3		Assessment Boundaries.....	7.6-13
	7.6.3.1	Spatial Boundaries.....	7.6-13
	7.6.3.2	Temporal Boundaries.....	7.6-13
	7.6.3.3	Administrative Boundaries .....	7.6-14
	7.6.3.4	Technical Boundaries .....	7.6-19
7.6.4		Project Benefits Related to Economic Diversification.....	7.6-19

7.6.5	Potential Adverse Effects of the Project and Proposed Mitigation for Economic Diversification .....	7.6-20
7.6.5.1	Identifying Potential Effects on Economic Diversification .....	7.6-20
7.6.5.2	Effects of Economic Diversification .....	7.6-24
7.6.5.3	Mitigation Measures for Economic Diversification .....	7.6-24
7.6.6	Residual Effects and Their Significance .....	7.6-24
7.6.6.1	Summary of Residual Effects .....	7.6-24
7.6.7	Cumulative Effects Assessment .....	7.6-24
7.6.8	Conclusion.....	7.6-24
7.7	Summary of Assessment of Potential Economic Effects .....	7.7-1
7.8	References .....	7.8-1
8.	Assessment of Potential Social Effects.....	8.1-1
8.1	Infrastructure, Public Facilities, and Services.....	8.1-1
8.1.1	Rationale .....	8.1-1
8.1.2	Background .....	8.1-3
8.1.2.1	Regional Overview .....	8.1-3
8.1.2.2	Historical Activities.....	8.1-3
8.1.2.3	Baseline Studies .....	8.1-4
8.1.3	Assessment Boundaries.....	8.1-16
8.1.3.1	Spatial Boundaries.....	8.1-16
8.1.3.2	Temporal Boundaries.....	8.1-19
8.1.3.3	Administrative Boundaries .....	8.1-19
8.1.3.4	Technical Boundaries .....	8.1-20
8.1.4	Potential Effects of the Project and Proposed Mitigation for Infrastructure, Public Facilities, and Services.....	8.1-20
8.1.4.1	Identifying Potential Effects on Infrastructure, Public Facilities, and Services .....	8.1-25
8.1.4.2	Key Effects on Infrastructure, Public Facilities, and Services.....	8.1-33
8.1.4.3	Mitigation Measures for Infrastructure, Public Facilities, and Services.....	8.1-47
8.1.5	Residual Effects and Their Significance .....	8.1-50
8.1.5.1	Summary of Residual Effects .....	8.1-50
8.1.5.2	Criteria for Characterization of Residual Effects .....	8.1-55
8.1.5.3	Characterization of Residual Effects .....	8.1-55
8.1.5.4	Significance of Residual Effects .....	8.1-63
8.1.5.5	Characterization of Likelihood and Confidence .....	8.1-65

	8.1.5.6	Summary of Residual Effects Assessment and Significance.....	8.1-66
8.1.6		Cumulative Effects Assessment .....	8.1-69
	8.1.6.1	Introduction.....	8.1-69
	8.1.6.2	Identification of Other Actions that May Affect Infrastructure, Public Facilities, and Services.....	8.1-69
	8.1.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.1-69
	8.1.6.4	Proposed Mitigation Measures.....	8.1-78
	8.1.6.5	Evaluation of Significance of Residual Cumulative Effects .....	8.1-79
8.1.7		Conclusion.....	8.1-79
8.2		Dark Sky.....	8.2-1
	8.2.1	Rationale .....	8.2-1
	8.2.2	Background .....	8.2-1
	8.2.2.1	Regional Overview .....	8.2-1
	8.2.2.2	Historical Activities.....	8.2-5
	8.2.2.3	Baseline Studies .....	8.2-6
8.2.3		Assessment Boundaries.....	8.2-14
	8.2.3.1	Spatial Boundaries.....	8.2-14
	8.2.3.2	Administrative Boundaries .....	8.2-17
	8.2.3.3	Temporal Boundaries.....	8.2-17
8.2.4		Potential Effects of the Project and Proposed Mitigation for Dark Sky .....	8.2-17
	8.2.4.1	Identifying Potential Effects on Dark Sky .....	8.2-17
	8.2.4.2	Effects on Dark Sky .....	8.2-18
	8.2.4.3	Mitigation Measures for Dark Sky .....	8.2-25
8.2.5		Residual Effects and Their Significance .....	8.2-30
	8.2.5.1	Summary of Residual Effects .....	8.2-30
	8.2.5.2	Criteria for Characterization of Residual Effects .....	8.2-31
	8.2.5.3	Characterization of Residual Effects .....	8.2-31
	8.2.5.4	Significance of Residual Effects .....	8.2-36
	8.2.5.5	Characterization of Likelihood and Confidence .....	8.2-36
	8.2.5.6	Summary of Residual Effects Assessment and Significance.....	8.2-36
8.2.6		Cumulative Effects Assessment .....	8.2-37
	8.2.6.1	Introduction.....	8.2-37
	8.2.6.2	Identification of Other Actions that May Affect Dark Sky .....	8.2-37

	8.2.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.2-37
	8.2.6.4	Proposed Mitigation Measures.....	8.2-37
	8.2.6.5	Evaluation of Significance of Residual Cumulative Effects .....	8.2-38
	8.2.7	Conclusion.....	8.2-38
8.3		Visual Impact and Aesthetic Features .....	8.3-1
	8.3.1	Rationale .....	8.3-1
	8.3.2	Background .....	8.3-2
	8.3.2.1	Regional Overview.....	8.3-2
	8.3.2.2	Historical Activities.....	8.3-4
	8.3.2.3	Baseline Studies .....	8.3-5
	8.3.3	Assessment Boundaries.....	8.3-12
	8.3.3.1	Spatial Boundaries.....	8.3-17
	8.3.3.2	Temporal Boundaries.....	8.3-17
	8.3.3.3	Administrative Boundaries .....	8.3-18
	8.3.3.4	Technical Boundaries .....	8.3-18
	8.3.4	Potential Effects of the Project and Proposed Mitigation for Visual Impact/Aesthetic Features.....	8.3-18
	8.3.4.1	Identifying Potential Effects on Visual Impact/Aesthetic Features.....	8.3-18
	8.3.4.2	Effects on Visual Impact/Aesthetic Features .....	8.3-24
	8.3.4.3	Mitigation Measures for Visual Impact/Aesthetic Features.....	8.3-53
	8.3.5	Residual Effects and their Significance .....	8.3-54
	8.3.5.1	Summary of Residual Effects.....	8.3-54
	8.3.5.2	Criteria for Characterization of Residual Effects .....	8.3-57
	8.3.5.3	Characterization of Residual Effects.....	8.3-57
	8.3.5.4	Significance of Residual Effects .....	8.3-58
	8.3.5.5	Characterization of Likelihood and Confidence .....	8.3-58
	8.3.5.6	Summary of Residual Effects Assessment and Significance.....	8.3-61
	8.3.6	Cumulative Effects Assessment .....	8.3-61
	8.3.6.1	Introduction.....	8.3-61
	8.3.6.2	Identification of Other Actions that May Affect Visual Impact/Aesthetic Features.....	8.3-61
	8.3.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.3-62

	8.3.6.4	Proposed Mitigation Measures.....	8.3-62
	8.3.6.5	Evaluation of Significance of Residual Cumulative Effects .....	8.3-65
	8.3.7	Conclusion.....	8.3-65
8.4		Land and Resource Use .....	8.4-1
	8.4.1	Rationale .....	8.4-1
	8.4.2	Background .....	8.4-2
	8.4.2.1	Regional Overview .....	8.4-2
	8.4.2.2	Historical Activities.....	8.4-4
	8.4.2.3	Baseline Studies .....	8.4-5
	8.4.3	Assessment Boundaries.....	8.4-15
	8.4.3.1	Spatial Boundaries.....	8.4-16
	8.4.3.2	Temporal Boundaries.....	8.4-16
	8.4.3.3	Administrative Boundaries .....	8.4-21
	8.4.3.4	Technical Boundaries .....	8.4-21
	8.4.4	Potential Effects of the Project and Proposed Mitigation for Land and Resources Use.....	8.4-21
	8.4.4.1	Identifying Potential Effects on Land and Resources Use .....	8.4-21
	8.4.4.2	Effects on Land and Resource Use .....	8.4-22
	8.4.4.3	Mitigation Measures for Land and Resource Use.....	8.4-37
	8.4.5	Residual Effects and Their Significance .....	8.4-39
	8.4.5.1	Summary of Residual Effects .....	8.4-39
	8.4.5.2	Criteria for Characterization of Residual Effects .....	8.4-41
	8.4.5.3	Characterization of Residual Effects .....	8.4-41
	8.4.5.4	Significance of Residual Effects .....	8.4-44
	8.4.5.5	Characterization of Likelihood and Confidence .....	8.4-45
	8.4.5.6	Summary of Residual Effects Assessment and Significance.....	8.4-45
	8.4.6	Cumulative Effects Assessment .....	8.4-45
	8.4.6.1	Introduction.....	8.4-45
	8.4.6.2	Identification of Other Actions that May Affect Land and Resource Use .....	8.4-46
	8.4.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.4-46
	8.4.6.1	Proposed Mitigation Measures.....	8.4-47
	8.4.6.2	Evaluation of Significance of Residual Cumulative Effects .....	8.4-47
	8.4.7	Conclusion.....	8.4-47

8.5	Current Use of Lands and Resources for Traditional Purposes.....	8.5-1
8.5.1	Rationale for Selection of VC.....	8.5-2
8.5.1.1	Influence of Consultation on the Assessment .....	8.5-3
8.5.1.2	Selection of Indicators.....	8.5-3
8.5.2	Background .....	8.5-4
8.5.2.1	Regional Overview.....	8.5-4
8.5.2.2	Historical Context.....	8.5-5
8.5.2.3	Baseline Information .....	8.5-9
8.5.3	Spatial and Temporal Boundaries.....	8.5-51
8.5.3.1	Spatial Boundaries.....	8.5-51
8.5.3.2	Temporal Boundaries.....	8.5-52
8.5.3.3	Administrative and Technical Boundaries .....	8.5-52
8.5.3.4	Assessment Limitations.....	8.5-52
8.5.4	Summary of Effects Assessments from Other Valued Components.....	8.5-55
8.5.5	Potential Effects of the Project and Proposed Mitigation for Current Use of Lands and Resources for Traditional Purposes .....	8.5-55
8.5.5.1	Identifying Potential Effects on Current Use of Lands and Resources for Traditional Purposes .....	8.5-55
8.5.5.2	Other Potential Effects .....	8.5-74
8.5.5.3	Effects on Current Use of Land and Resources for Traditional Purposes .....	8.5-78
8.5.5.4	Potential to Return Affected Areas to Pre-Disturbance Conditions .....	8.5-97
8.5.6	Residual Effects and their Significance .....	8.5-98
8.5.6.1	Summary of Residual Effects.....	8.5-98
8.5.6.2	Criteria for Characterization of Residual Effects .....	8.5-98
8.5.6.3	Assessment of Residual Effects: Stk'emlupsemc te Secwépemc Nation.....	8.5-103
8.5.6.4	Assessment of Residual Effects: Other Aboriginal Groups.....	8.5-122
8.5.7	Cumulative Effects Assessment .....	8.5-137
8.5.7.1	Introduction.....	8.5-137
8.5.7.2	Identification of Other Actions that May Affect Current Use of Land and Resources for Traditional Purposes .....	8.5-138
8.5.7.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.5-139
8.5.7.4	Proposed Mitigation Measures.....	8.5-140
8.5.7.5	Evaluation of Significance of Residual Cumulative Effects .....	8.5-140

8.5.8	Conclusion.....	8.5-150
8.6	Outdoor Recreation.....	8.6-1
8.6.1	Rationale .....	8.6-1
8.6.2	Background .....	8.6-2
8.6.2.1	Regional Overview .....	8.6-2
8.6.2.2	Historical Activities.....	8.6-4
8.6.2.3	Baseline Studies .....	8.6-5
8.6.3	Assessment Boundaries.....	8.6-15
8.6.3.1	Spatial Boundaries.....	8.6-15
8.6.3.2	Temporal Boundaries.....	8.6-16
8.6.3.3	Administrative Boundaries .....	8.6-16
8.6.3.4	Technical Boundaries .....	8.6-16
8.6.4	Potential Effects of the Project and Proposed Mitigation for Outdoor Recreation.....	8.6-16
8.6.4.1	Identifying Potential Effects on Outdoor Recreation .....	8.6-16
8.6.4.2	Effects on Outdoor Recreation.....	8.6-25
8.6.4.3	Mitigation Measures for Outdoor Recreation.....	8.6-33
8.6.5	Residual Effects and Their Significance .....	8.6-35
8.6.5.1	Summary of Residual Effects.....	8.6-36
8.6.5.2	Criteria for Characterization of Residual Effects .....	8.6-36
8.6.5.3	Characterization of Residual Effects.....	8.6-36
8.6.5.4	Significance of Residual Effects .....	8.6-43
8.6.5.5	Characterization of Likelihood and Confidence .....	8.6-43
8.6.5.6	Summary of Residual Effects Assessment and Significance.....	8.6-44
8.6.6	Cumulative Effects Assessment .....	8.6-45
8.6.6.1	Introduction.....	8.6-45
8.6.6.2	Identification of Other Actions that May Affect Outdoor Recreation .....	8.6-45
8.6.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	8.6-45
8.6.6.4	Proposed Mitigation Measures.....	8.6-46
8.6.6.5	Evaluation of Significance of Residual Cumulative Effects .....	8.6-46
8.6.7	Conclusion.....	8.6-46
8.7	Supporting Topic – Jacko Lake .....	8.7-1
8.7.1	Rationale .....	8.7-1
8.7.2	Background .....	8.7-5

8.7.2.1	History .....	8.7-5
8.7.2.2	Cultural Importance and Traditional Use by SSN.....	8.7-8
8.7.2.3	Recreational Uses of Jacko Lake .....	8.7-11
8.7.2.4	Other Uses of Jacko Lake.....	8.7-12
8.7.2.5	Relevant Project Design Features .....	8.7-12
8.7.3	Summaries of Selected VCs.....	8.7-15
8.7.3.1	Spatial and Temporal Boundaries.....	8.7-15
8.7.3.2	Surface Water Quality VC Summary.....	8.7-16
8.7.3.3	Surface Water Quantity VC Summary .....	8.7-17
8.7.3.4	Groundwater Quantity VC Summary .....	8.7-17
8.7.3.5	Fish and Fish Habitat VC Summary .....	8.7-18
8.7.3.6	Wildlife VCs Summary .....	8.7-20
8.7.3.7	Visual Impact/ Aesthetic Features VC Summary.....	8.7-21
8.7.3.8	Land and Resource Use VC Summary .....	8.7-21
8.7.3.9	Current Use of Lands and Resources for Traditional Purposes.....	8.7-22
8.7.3.10	Outdoor Recreation VC Summary .....	8.7-26
8.7.3.11	Heritage VC Summary.....	8.7-28
8.7.3.12	Air Quality VC Summary.....	8.7-28
8.7.3.13	Human Health VC Summary .....	8.7-29
8.7.3.14	Noise and Vibration VC Summary .....	8.7-30
8.7.4	Cumulative Effects .....	8.7-31
8.7.5	Environmental Management System .....	8.7-32
8.7.6	Conclusion.....	8.7-33
8.8	Summary of Assessment of Potential Social Effects .....	8.8-1
8.9	References.....	8.9-1
9.	Assessment of Potential Heritage Effects.....	9.1-1
9.1	Archaeological Sites .....	9.1-1
9.1.1	Rationale .....	9.1-1
9.1.2	Background .....	9.1-2
9.1.2.1	Regional Overview.....	9.1-2
9.1.2.2	Historical Activities.....	9.1-3
9.1.2.3	Baseline Studies .....	9.1-5
9.1.3	Assessment Boundaries.....	9.1-6
9.1.3.1	Spatial Boundaries.....	9.1-7
9.1.3.2	Temporal Boundaries.....	9.1-7
9.1.3.3	Administrative Boundaries .....	9.1-7

9.1.4	Potential Effects of the Project and Proposed Mitigation for Archaeological Sites .....	9.1-7
9.1.4.1	Identifying Potential Effects on Archaeological Sites.....	9.1-7
9.1.4.2	Effects on Archaeological Sites .....	9.1-8
9.1.4.3	Mitigation Measures for Archaeological Sites.....	9.1-16
9.1.5	Residual Effects and their Significance .....	9.1-23
9.1.5.1	Summary of Residual Effects.....	9.1-23
9.1.5.2	Criteria for Characterization of Residual Effects .....	9.1-23
9.1.5.3	Characterization of Residual Effects.....	9.1-23
9.1.5.4	Significance of Residual Effects .....	9.1-29
9.1.5.5	Characterization of Likelihood and Confidence .....	9.1-29
9.1.5.6	Summary of Residual Effects Assessment and Significance.....	9.1-29
9.1.6	Cumulative Effects.....	9.1-29
9.1.6.1	Introduction.....	9.1-29
9.1.6.2	Identification of Other Actions that May Affect Archaeological Sites .....	9.1-30
9.1.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	9.1-31
9.1.7	Conclusion.....	9.1-31
9.2	Aboriginal and Non-Aboriginal Heritage Sites.....	9.2-1
9.2.1	Rationale .....	9.2-1
9.2.2	Background .....	9.2-2
9.2.2.1	Regional Overview .....	9.2-2
9.2.2.2	Historical Activities.....	9.2-4
9.2.2.3	Baseline Studies .....	9.2-5
9.2.3	Assessment Boundaries.....	9.2-7
9.2.3.1	Spatial Boundaries.....	9.2-7
9.2.3.2	Temporal Boundaries.....	9.2-7
9.2.4	Potential Effects of the Project and Proposed Mitigation for Heritage Sites .....	9.2-7
9.2.4.1	Identifying Potential Effects on Heritage Sites.....	9.2-7
9.2.4.2	Effects on Heritage Sites .....	9.2-8
9.2.4.3	Mitigation Measures for Heritage Sites.....	9.2-18
9.2.5	Residual Effects and Their Significance .....	9.2-22
9.2.6	Cumulative Effects.....	9.2-23
9.2.6.1	Introduction.....	9.2-23

9.2.6.2	Identification of Other Actions that May Affect Heritage Sites.....	9.2-23
9.2.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	9.2-24
9.2.7	Conclusion.....	9.2-24
9.3	Summary of Assessment of Potential Heritage Effects .....	9.3-1
9.3.1	Summary of Potential Effects of the Project for Archaeological Sites.....	9.3-1
9.3.1.1	Known Archaeological Sites .....	9.3-1
9.3.1.2	As-yet Unknown Archaeological Sites .....	9.3-3
9.3.1.3	Summary of Residual Effects for Archaeological Sites .....	9.3-3
9.3.2	Summary of Potential Effects of the Project for Heritage Sites .....	9.3-3
9.3.2.1	Paleontological Sites.....	9.3-3
9.3.2.2	Aboriginal Heritage Sites .....	9.3-3
9.3.2.3	Non-Aboriginal Heritage Sites .....	9.3-5
9.3.2.4	Summary of Residual Effects for Heritage Sites .....	9.3-5
9.4	References.....	9.4-1
10.	Assessment of Potential Health Effects.....	10.1-1
10.1	Air Quality.....	10.1-1
10.1.1	Rationale.....	10.1-1
10.1.1.1	Scientific/Professional Knowledge.....	10.1-3
10.1.1.2	Federal and Provincial Ambient Air Quality Objectives and Standards .....	10.1-3
10.1.1.3	Public or Other Stakeholder Input.....	10.1-5
10.1.1.4	Substances of Interest Excluded from the Air Quality Assessment .....	10.1-7
10.1.2	Background .....	10.1-8
10.1.2.1	Regional Overview.....	10.1-8
10.1.2.2	Historical Activities.....	10.1-9
10.1.2.3	Baseline Studies .....	10.1-13
10.1.3	Assessment Boundaries.....	10.1-18
10.1.3.1	Spatial Boundaries.....	10.1-18
10.1.3.2	Temporal Boundaries.....	10.1-19
10.1.3.3	Administrative Boundaries .....	10.1-20
10.1.3.4	Technical Boundaries .....	10.1-24
10.1.4	Potential Effects of the Project and Proposed Mitigation for Air Quality .....	10.1-24
10.1.4.1	Identifying Potential Effects on Air Quality .....	10.1-24
10.1.4.2	Effects on Air Quality.....	10.1-31

	10.1.4.3	Mitigation Measures for Air Quality .....	10.1-57
10.1.5		Residual Effects and Their Significance .....	10.1-59
	10.1.5.1	Summary of Air Quality Residual Effects .....	10.1-59
	10.1.5.2	Criteria for Characterization of Air Quality Residual Effects .....	10.1-60
	10.1.5.3	Characterization of Air Quality Residual Effects .....	10.1-60
	10.1.5.4	Characterization of Air Quality Residual Effects .....	10.1-65
	10.1.5.5	Significance of Air Quality Residual Effects .....	10.1-65
	10.1.5.6	Characterization of Likelihood and Confidence .....	10.1-67
	10.1.5.7	Summary of Air Quality Residual Effects Assessment and Significance .....	10.1-68
10.1.6		Cumulative Effects Assessment .....	10.1-68
	10.1.6.1	Introduction .....	10.1-68
	10.1.6.2	Identification of Other Actions that May Affect Air Quality .....	10.1-68
	10.1.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	10.1-73
	10.1.6.4	Proposed Air Quality Mitigation Measures .....	10.1-73
	10.1.6.5	Evaluation of Significance of Air Quality Residual Cumulative Effects .....	10.1-74
10.1.7		Conclusion .....	10.1-74
10.2		Domestic Water Quality .....	10.2-1
	10.2.1	Rationale .....	10.2-1
	10.2.2	Background .....	10.2-1
	10.2.2.1	Regional Overview .....	10.2-1
	10.2.2.2	Historical Activities .....	10.2-2
	10.2.2.3	Baseline Data .....	10.2-3
10.2.3		Assessment Boundaries .....	10.2-7
	10.2.3.1	Spatial Boundaries .....	10.2-8
	10.2.3.2	Temporal Boundaries .....	10.2-8
	10.2.3.3	Administrative Boundaries .....	10.2-9
	10.2.3.4	Technical Boundaries .....	10.2-9
10.2.4		Potential Effects of the Project and Proposed Mitigation for Domestic Water Quality .....	10.2-9
	10.2.4.1	Identifying Potential Effects to Domestic Water Quality .....	10.2-9
	10.2.4.2	Effects on Domestic Water Quality .....	10.2-13
	10.2.4.3	Mitigation Measures for Domestic Water Quality .....	10.2-17
10.2.5		Residual Effects and Their Significance .....	10.2-18

10.2.6	Cumulative Effects Assessment .....	10.2-19
10.2.6.1	Introduction.....	10.2-19
10.2.6.2	Identification of Other Actions that May Affect Domestic Water Quality .....	10.2-20
10.2.6.3	Proposed Mitigation Measures.....	10.2-21
10.2.6.4	Evaluation of Significance of Residual Cumulative Effects .....	10.2-21
10.2.7	Conclusion.....	10.2-21
10.3	Country Foods.....	10.3-1
10.3.1	Rationale .....	10.3-1
10.3.2	Background .....	10.3-1
10.3.2.1	Regional Overview .....	10.3-1
10.3.2.2	Historical and Current Country Food Harvesting Activities .....	10.3-2
10.3.2.3	Baseline Data.....	10.3-5
10.3.3	Assessment Boundaries.....	10.3-7
10.3.3.1	Spatial Boundaries.....	10.3-7
10.3.3.2	Administrative Boundaries .....	10.3-8
10.3.3.3	Technical Boundaries .....	10.3-8
10.3.4	Potential Effects of the Project and Proposed Mitigation for Country Foods .....	10.3-9
10.3.4.1	Identifying Potential Effects to Country Foods.....	10.3-9
10.3.4.2	Effects on Country Foods .....	10.3-12
10.3.4.3	Mitigation Measures for Country Foods .....	10.3-19
10.3.5	Residual Effects and Their Significance .....	10.3-20
10.3.6	Cumulative Effects Assessment .....	10.3-21
10.3.6.1	Introduction.....	10.3-21
10.3.6.2	Identification of Other Actions that May Affect Country Foods .....	10.3-21
10.3.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	10.3-25
10.3.6.4	Proposed Mitigation Measures.....	10.3-25
10.3.6.5	Evaluation of Significance of Residual Cumulative Effects .....	10.3-25
10.3.7	Conclusion.....	10.3-25
10.4	Human Health .....	10.4-1
10.4.1	Rationale .....	10.4-1
10.4.2	Background .....	10.4-2

	10.4.2.1	Regional Overview.....	10.4-2
	10.4.2.2	Historical Activities.....	10.4-3
	10.4.2.3	Baseline Data.....	10.4-4
10.4.3		Assessment Boundaries.....	10.4-15
	10.4.3.1	Spatial Boundaries.....	10.4-15
	10.4.3.2	Temporal Boundaries:.....	10.4-16
	10.4.3.3	Administrative Boundaries.....	10.4-19
	10.4.3.4	Technical Boundaries.....	10.4-20
10.4.4		Potential Effects of the Project and Proposed Mitigation for Human Health.....	10.4-20
	10.4.4.1	Identifying Potential Effects on Human Health.....	10.4-20
	10.4.4.2	Effects on Human Health.....	10.4-24
	10.4.4.3	Mitigation Measures for Human Health.....	10.4-54
10.4.5		Residual Effects and Their Significance.....	10.4-55
	10.4.5.1	Summary of Human Health Residual Effects.....	10.4-55
	10.4.5.2	Criteria for Characterization of Residual Effects.....	10.4-55
	10.4.5.3	Characterization of Residual Effects.....	10.4-55
	10.4.5.4	Significance of Human Health Residual Effects.....	10.4-62
	10.4.5.5	Characterization of Likelihood and Confidence.....	10.4-62
	10.4.5.6	Summary of Residual Effects Assessment and Significance.....	10.4-63
10.4.6		Cumulative Effects Assessment.....	10.4-63
	10.4.6.1	Introduction.....	10.4-63
	10.4.6.2	Identification of Other Actions that May Affect Human Health.....	10.4-63
	10.4.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects.....	10.4-64
	10.4.6.4	Proposed Mitigation Measures.....	10.4-64
	10.4.6.5	Evaluation of Significance of Residual Cumulative Effects.....	10.4-64
10.4.7		Conclusion.....	10.4-67
10.5		Noise and Vibration.....	10.5-1
	10.5.1	Rationale.....	10.5-1
	10.5.2	Background.....	10.5-2
	10.5.2.1	Regional Overview.....	10.5-2
	10.5.2.2	Historical Activities.....	10.5-2
	10.5.2.3	Baseline Studies.....	10.5-3
10.5.3		Assessment Boundaries.....	10.5-10

10.5.3.1	Spatial Boundaries.....	10.5-10
10.5.3.2	Temporal Boundaries.....	10.5-13
10.5.3.3	Administrative Boundaries .....	10.5-14
10.5.3.4	Technical Boundaries .....	10.5-14
10.5.4	Potential Effects of the Project and Proposed Mitigation for Noise and Vibration .....	10.5-14
10.5.4.1	Identifying Potential Effects on Noise and Vibration.....	10.5-14
10.5.4.2	Effects on Noise and Vibration .....	10.5-20
10.5.5	Residual Effects and Their Significance .....	10.5-59
10.5.5.1	Summary of Residual Effects .....	10.5-59
10.5.5.2	Criteria for Characterization of Residual Effects .....	10.5-59
10.5.5.3	Characterization of Residual Effects .....	10.5-59
10.5.5.4	Significance of Residual Effects .....	10.5-70
10.5.5.5	Characterization of Likelihood and Confidence .....	10.5-71
10.5.5.6	Summary of Residual Effects Assessment and Significance.....	10.5-71
10.5.6	Cumulative Effects Assessment .....	10.5-71
10.5.6.1	Introduction.....	10.5-71
10.5.6.2	Identification of Other Actions that May Affect Noise and Vibration .....	10.5-72
10.5.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	10.5-73
10.5.6.4	Proposed Mitigation Measures.....	10.5-73
10.5.6.5	Evaluation of Significance of Residual Cumulative Effects .....	10.5-74
10.5.7	Conclusion.....	10.5-76
10.6	Healthy Living and Health Education.....	10.6-1
10.6.1	Rationale .....	10.6-1
10.6.2	Background .....	10.6-2
10.6.2.1	Regional Overview .....	10.6-2
10.6.2.2	Historical Activities.....	10.6-2
10.6.2.3	Baseline Studies .....	10.6-4
10.6.3	Assessment Boundaries.....	10.6-17
10.6.3.1	Spatial Boundaries.....	10.6-17
10.6.3.1	Temporal Boundaries.....	10.6-17
10.6.3.2	Administrative Boundaries .....	10.6-18
10.6.3.3	Technical Boundaries .....	10.6-18

10.6.4	Potential Effects of the Project and Proposed Mitigation for Healthy Living and Health Education.....	10.6-18
10.6.4.1	Identifying Potential Effects on Healthy Living and Health Education.....	10.6-18
10.6.4.2	Effects on Healthy Living and Health Education .....	10.6-26
10.6.4.3	Mitigation Measures for Healthy Living and Health Education.....	10.6-31
10.6.5	Residual Effects and Their Significance .....	10.6-32
10.6.5.1	Summary of Residual Effects.....	10.6-32
10.6.6	Cumulative Effects Assessment .....	10.6-33
10.6.7	Conclusion.....	10.6-34
10.7	Community Health and Well-being.....	10.7-1
10.7.1	Rationale .....	10.7-1
10.7.2	Background .....	10.7-3
10.7.2.1	Regional Overview.....	10.7-4
10.7.2.2	Historical Activities.....	10.7-7
10.7.2.3	Baseline Studies .....	10.7-8
10.7.3	Assessment Boundaries.....	10.7-27
10.7.3.1	Spatial Boundaries.....	10.7-27
10.7.3.2	Temporal Boundaries.....	10.7-28
10.7.3.3	Administrative Boundaries .....	10.7-28
10.7.3.4	Technical Boundaries .....	10.7-28
10.7.4	Potential Effects of the Project and Proposed Mitigation for Community Health and Well-being .....	10.7-33
10.7.4.1	Identifying Potential Effects on Community Health and Well-being.....	10.7-33
10.7.4.2	Potential Effects on Community Health and Well-being.....	10.7-40
10.7.4.3	Mitigation Measures for Community Health and Well-being.....	10.7-46
10.7.5	Residual Effects and Their Significance .....	10.7-48
10.7.5.1	Summary of Residual Effects.....	10.7-48
10.7.5.2	Criteria for Characterization of Residual Effects .....	10.7-51
10.7.5.3	Characterization of Residual Effects .....	10.7-51
10.7.5.4	Significance of Residual Effects .....	10.7-55
10.7.5.5	Characterization of Likelihood and Confidence .....	10.7-56
10.7.5.6	Summary of Residual Effects Assessment and Significance.....	10.7-57
10.7.6	Cumulative Effects Assessment .....	10.7-58

10.7.6.1	Introduction.....	10.7-58
10.7.6.2	Identification of Other Actions that May Affect Community Health and Well-being .....	10.7-58
10.7.6.3	Interactions between Residual Project Effects and Other Project or Activity Effects .....	10.7-58
10.7.6.4	Proposed Mitigation Measures.....	10.7-63
10.7.6.5	Evaluation of Significance of Residual Cumulative Effects .....	10.7-64
10.7.7	Conclusion.....	10.7-64
10.8	Summary of Assessment of Potential Health Effects.....	10.8-1
10.9	References .....	10.9-1
11.	Summary of Proposed Environmental and Operational Management Plans .....	11.1-1
11.1	Environmental Management System.....	11.1-1
11.1.1	Introduction .....	11.1-1
11.1.2	KAM Environmental Management System.....	11.1-1
11.1.2.1	Policy and Leadership.....	11.1-3
11.1.2.2	Environmental Risks and Opportunities.....	11.1-5
11.1.2.3	Compliance Obligations .....	11.1-5
11.1.2.4	Environmental Objectives and Plans .....	11.1-6
11.1.2.5	Competency and Training.....	11.1-6
11.1.2.6	Communication .....	11.1-6
11.1.2.7	Operational Planning and Control.....	11.1-6
11.1.2.8	Emergency Preparedness and Response.....	11.1-7
11.1.2.9	Monitoring, Measurement, and Performance Evaluation .....	11.1-7
11.1.2.10	Continual Improvement .....	11.1-7
11.1.3	Environmental Management and Monitoring Plans.....	11.1-8
11.1.4	Construction Environmental Management Plan .....	11.1-10
11.2	Erosion and Sediment Control Plan.....	11.2-1
11.2.1	Purpose .....	11.2-2
11.2.2	Performance Objectives .....	11.2-2
11.2.3	Environmental Protection Measures .....	11.2-5
11.2.3.1	Design Criteria.....	11.2-5
11.2.3.2	Construction.....	11.2-7
11.2.3.3	Operation.....	11.2-10
11.2.3.4	Closure and Post-Closure.....	11.2-12
11.2.4	Monitoring.....	11.2-13
11.2.4.1	Work Planning and Schedule .....	11.2-16

	11.2.5	Reporting.....	11.2-16
11.3		Soil Salvage and Handling Plan .....	11.3-1
	11.3.1	Purpose .....	11.3-1
	11.3.2	Performance Objectives .....	11.3-1
	11.3.3	Environmental Protection Measures .....	11.3-2
	11.3.3.1	Design Criteria .....	11.3-2
	11.3.3.2	Construction.....	11.3-2
	11.3.3.3	Operation.....	11.3-6
	11.3.3.4	Decommissioning and Closure.....	11.3-6
	11.3.3.5	Post-Closure .....	11.3-7
	11.3.4	Monitoring.....	11.3-7
	11.3.4.1	Work Planning and Schedule .....	11.3-9
	11.3.5	Reporting.....	11.3-9
11.4		Construction Waste Management Plan.....	11.4-1
	11.4.1	Purpose .....	11.4-1
	11.4.2	Applicable Legislation and Standards .....	11.4-2
	11.4.3	Performance Objectives .....	11.4-2
	11.4.4	Environmental Protection Measures .....	11.4-3
	11.4.4.1	Design Criteria .....	11.4-6
	11.4.4.2	Pre-Construction.....	11.4-6
	11.4.4.3	Construction.....	11.4-7
	11.4.4.4	Post-construction .....	11.4-7
	11.4.5	Monitoring.....	11.4-7
	11.4.6	Reporting.....	11.4-8
11.5		Metal Leaching and Acid Rock Drainage Management and Monitoring Plan.....	11.5-1
	11.5.1	Purpose .....	11.5-1
	11.5.2	Performance Objectives .....	11.5-1
	11.5.3	Geochemical Evaluation for Management.....	11.5-2
	11.5.3.1	Operational NP Determination .....	11.5-2
	11.5.3.2	Operational AP Determination.....	11.5-3
	11.5.3.3	Operational PAG Definition .....	11.5-3
	11.5.3.4	Estimation of PAG and NPAG Mine Rock and Ore Quantities.....	11.5-3
	11.5.3.5	NPAG - PAG Proportions Required for Blending .....	11.5-5
	11.5.3.6	Spatial Distribution of PAG and NPAG in Pit .....	11.5-8
	11.5.3.7	Neutral Metal Leaching Characteristics .....	11.5-8
	11.5.4	Management Strategies .....	11.5-8

	11.5.4.1	Mine Rock Management.....	11.5-15
	11.5.4.2	TSF Embankment and Tailings Management .....	11.5-21
	11.5.4.3	Ore Management .....	11.5-22
11.5.5		Monitoring.....	11.5-22
	11.5.5.1	In-Pit Monitoring.....	11.5-22
	11.5.5.2	Confirmatory Monitoring.....	11.5-24
	11.5.5.3	Seepage and Tailings Slurry Water Quality Monitoring .....	11.5-24
	11.5.5.4	On-site Laboratory .....	11.5-24
11.5.6		Reporting.....	11.5-25
11.6		Air Quality Monitoring and Dust Control Plan .....	11.6-1
	11.6.1	Purpose .....	11.6-1
	11.6.2	Performance Objectives .....	11.6-2
	11.6.3	Environmental Protection Measures .....	11.6-5
	11.6.3.1	Design Criteria .....	11.6-5
	11.6.3.2	Construction.....	11.6-6
	11.6.3.3	Operation.....	11.6-6
	11.6.3.4	Decommissioning and Closure.....	11.6-7
	11.6.3.5	Post-Closure .....	11.6-8
11.6.4		Monitoring.....	11.6-8
	11.6.4.1	Work Planning and Schedule .....	11.6-11
11.6.5		Reporting.....	11.6-11
	11.6.5.1	Complaint Resolution .....	11.6-12
11.7		Water Management and Hydrometric Monitoring Plan .....	11.7-1
	11.7.1	Introduction .....	11.7-1
	11.7.1.1	Purpose .....	11.7-1
	11.7.1.2	Applicable Legislation and Standards.....	11.7-1
	11.7.1.3	Performance Objectives .....	11.7-2
11.7.2		Site Characterization.....	11.7-5
	11.7.2.1	Physical Setting.....	11.7-5
	11.7.2.2	Climate .....	11.7-7
	11.7.2.3	Hydrology .....	11.7-8
	11.7.2.4	Water Licenses .....	11.7-18
11.7.3		Environmental Protection Measures .....	11.7-22
	11.7.3.1	Mine Overview .....	11.7-22
	11.7.3.2	Water Management Overview .....	11.7-22
	11.7.3.3	Overview of Water Management Design.....	11.7-24
	11.7.3.4	Fresh Water Supply Pipeline .....	11.7-30

	11.7.3.5	Tailings Storage Facility.....	11.7-33
	11.7.3.6	Water Management Ponds.....	11.7-37
	11.7.3.7	Inks Lake.....	11.7-45
11.7.4		Construction Water Management Plan.....	11.7-46
	11.7.4.1	Overview .....	11.7-46
	11.7.4.2	Construction Schedule for Water Management Infrastructure .....	11.7-46
	11.7.4.3	Construction Water Requirements.....	11.7-48
	11.7.4.4	Water Management Strategy .....	11.7-49
11.7.5		Operation Water Management Plan.....	11.7-54
	11.7.5.1	Overview .....	11.7-54
	11.7.5.2	Water Requirements.....	11.7-55
	11.7.5.3	Water Management Strategy .....	11.7-56
11.7.6		Decommissioning and Closure Water Management Plan.....	11.7-61
	11.7.6.1	Overview .....	11.7-61
	11.7.6.2	Water Management Strategy .....	11.7-62
11.7.7		Post Closure Water Management Plan.....	11.7-67
11.7.8		Hydrometric Monitoring.....	11.7-68
	11.7.8.1	Prior to Construction.....	11.7-68
	11.7.8.2	Construction.....	11.7-71
	11.7.8.3	Operation.....	11.7-71
	11.7.8.4	Decommissioning and Closure.....	11.7-71
	11.7.8.5	Post Closure.....	11.7-72
11.7.9		Reporting and Recording .....	11.7-72
	11.7.9.1	Reporting.....	11.7-72
	11.7.9.2	Record Keeping / Tracking.....	11.7-73
11.8		Contaminated Site Management Plan .....	11.8-1
	11.8.1	Purpose .....	11.8-1
	11.8.2	Framework to Identify and Remediate Contaminated Sites .....	11.8-1
	11.8.2.1	Qualifications .....	11.8-1
	11.8.2.2	Criteria .....	11.8-1
	11.8.2.3	Site Contamination Characterization.....	11.8-2
	11.8.2.4	Notification of Offsite Migration.....	11.8-2
	11.8.2.5	Remedial Action Plans.....	11.8-2
	11.8.2.6	Soil Relocation.....	11.8-2
	11.8.2.7	Monitoring.....	11.8-3
	11.8.2.8	Reporting.....	11.8-3

11.9	Solid Waste Management Plan .....	11.9-1
11.9.1	Purpose .....	11.9-1
11.9.2	Applicable Legislation and Standards .....	11.9-2
11.9.3	Performance Objectives .....	11.9-3
11.9.4	Environmental Protection Measures .....	11.9-3
11.9.4.1	Construction .....	11.9-3
11.9.4.2	Operation .....	11.9-3
11.9.4.3	Decommissioning and Closure .....	11.9-8
11.9.4.4	Post-Closure .....	11.9-8
11.9.4.5	Design Criteria .....	11.9-8
11.9.5	Monitoring .....	11.9-9
11.9.6	Reporting .....	11.9-9
11.10	Hazardous Waste Management Plan .....	11.10-1
11.10.1	Purpose .....	11.10-1
11.10.1	Applicable Legislation and Standards .....	11.10-1
11.10.2	Performance Objectives .....	11.10-2
11.10.3	Environmental Protection Measures .....	11.10-3
11.10.3.1	Construction .....	11.10-3
11.10.3.2	Operation .....	11.10-3
11.10.3.3	Closure .....	11.10-10
11.10.3.4	Design Criteria .....	11.10-11
11.10.4	Monitoring .....	11.10-12
11.10.4.1	Work Planning and Schedule .....	11.10-13
11.10.5	Reporting .....	11.10-13
11.11	Explosives Management Plan .....	11.11-1
11.11.1	Purpose .....	11.11-1
11.11.2	Regulatory and Policy Framework .....	11.11-1
11.11.3	Performance Objectives .....	11.11-2
11.11.4	Environmental Protection Measures .....	11.11-3
11.11.4.1	Design Criteria .....	11.11-4
11.11.4.2	Safety Considerations .....	11.11-4
11.11.4.3	Construction .....	11.11-4
11.11.4.4	Operation .....	11.11-5
11.11.4.5	Decommissioning and Closure .....	11.11-6
11.11.4.6	Post Closure .....	11.11-7
11.11.5	Monitoring .....	11.11-7
11.11.5.1	Work Planning and Schedule .....	11.11-7

11.11.6	Reporting.....	11.11-8
11.11.6.1	Reports .....	11.11-8
11.11.6.2	Reporting Responsibilities.....	11.11-8
11.12	Risk Management Plan (Accidents and Malfunctions) .....	11.12-1
11.12.1	Purpose .....	11.12-1
11.12.2	Performance Objectives .....	11.12-1
11.12.3	Environmental Protection Measures .....	11.12-2
11.12.3.1	Design Measures – Pit Wall Failure .....	11.12-3
11.12.3.2	Design Measures – Dam Breach and Inundation.....	11.12-3
11.12.4	Monitoring.....	11.12-3
11.12.4.1	Pit Wall.....	11.12-4
11.12.4.2	TSF Structural Integrity .....	11.12-4
11.12.5	Reporting.....	11.12-4
11.13	Natural Hazards Management Plan .....	11.13-1
11.13.1	Purpose .....	11.13-1
11.13.2	Performance Objectives .....	11.13-1
11.13.3	Environmental Protection Measures .....	11.13-2
11.13.3.1	Open Pit .....	11.13-2
11.13.3.2	Tailings Storage Facility.....	11.13-3
11.13.3.3	Mine Rock Management Facilities .....	11.13-5
11.13.3.4	Other Areas .....	11.13-6
11.13.4	Monitoring.....	11.13-6
11.13.5	Reporting.....	11.13-7
11.14	Emergency Response Plan.....	11.14-1
11.14.1	Purpose .....	11.14-1
11.14.2	Performance Objectives .....	11.14-1
11.14.3	Emergency Preparedness Measures .....	11.14-2
11.14.3.1	Policy Directive.....	11.14-4
11.14.3.2	Emergency Response Plan Coordinator and Emergency Response Planning Committee.....	11.14-5
11.14.3.3	Emergency Identification, Prevention, and Protection .....	11.14-5
11.14.3.4	Duties and Responsibilities of Personnel .....	11.14-6
11.14.3.5	Emergency Notification Plan .....	11.14-6
11.14.3.6	Emergency Management Organization for Incident Command .....	11.14-6
11.14.3.7	Emergency Operations Centre.....	11.14-6
11.14.3.8	Mine Emergency Response Procedures .....	11.14-6

11.14.3.9	Action Plans.....	11.14-7
11.14.3.10	Mine Plan.....	11.14-8
11.14.3.11	Evacuation and Evacuation Plan.....	11.14-8
11.14.3.12	Check-in/Check-out Procedure for Emergency Operations .....	11.14-8
11.14.3.13	Mine Rescue Equipment Inventory .....	11.14-8
11.14.3.14	Mutual Aid Agreements.....	11.14-8
11.14.3.15	First Responders Consultation .....	11.14-9
11.14.3.16	Communication Services.....	11.14-9
11.14.3.17	System for the Dissemination of Information.....	11.14-9
11.14.3.18	Training Plan.....	11.14-10
11.14.3.19	Practice Session Plan .....	11.14-10
11.14.3.20	Plan for Review and Updating .....	11.14-10
11.14.3.21	Costs .....	11.14-10
11.14.3.22	Mine Rescue .....	11.14-10
11.14.3.23	Firefighting.....	11.14-11
11.14.3.24	Medical Emergencies .....	11.14-12
11.14.3.25	Snow Avalanche .....	11.14-13
11.14.3.26	Extreme Weather Conditions.....	11.14-13
11.14.3.27	Power Failure .....	11.14-13
11.14.3.28	Mine Access Road Closure.....	11.14-13
11.14.3.29	Missing or Overdue Persons and Vehicles .....	11.14-14
11.14.3.30	Automobile and Equipment Accidents.....	11.14-14
11.14.3.31	Wildlife Encounters and Incursions.....	11.14-14
11.14.3.32	Seismicity.....	11.14-14
11.14.3.33	Ground Instability .....	11.14-15
11.14.3.34	Water or Tailings Management Failure.....	11.14-15
11.14.4	Monitoring.....	11.14-15
11.14.4.1	Work Planning and Schedule .....	11.14-16
11.14.5	Reporting.....	11.14-16
11.14.5.1	Reports .....	11.14-16
11.14.5.2	Reporting Responsibilities.....	11.14-16
11.15	Fire Hazard Abatement Plan .....	11.15-1
11.15.1	Purpose .....	11.15-1
11.15.2	Performance Objectives .....	11.15-1
11.15.3	Design Criteria.....	11.15-1
11.15.4	Environmental Protection Measures .....	11.15-3

11.15.5	Fire Risk Reduction .....	11.15-3
11.15.6	Monitoring.....	11.15-5
11.15.7	Reporting.....	11.15-6
11.15.7.1	Reporting Responsibilities.....	11.15-6
11.16	Spill Contingency Plan.....	11.16-1
11.16.1	Purpose .....	11.16-1
11.16.2	Performance Objectives .....	11.16-2
11.16.3	Environmental Protection Measures .....	11.16-2
11.16.3.1	Risk Assessment .....	11.16-2
11.16.3.2	Spill Prevention and Response .....	11.16-2
11.16.3.3	Design Criteria.....	11.16-6
11.16.3.4	Construction.....	11.16-7
11.16.3.5	Operation.....	11.16-7
11.16.3.6	Decommissioning and Closure.....	11.16-8
11.16.3.7	Post-Closure .....	11.16-9
11.16.4	Monitoring.....	11.16-9
11.16.4.1	Work Planning and Schedule .....	11.16-9
11.16.5	Reporting.....	11.16-9
11.16.5.1	Responsible Persons.....	11.16-11
11.17	Invasive Plants Management Plan .....	11.17-1
11.17.1	Purpose .....	11.17-1
11.17.1.1	Regulatory and Policy Framework .....	11.17-1
11.17.2	Performance Objectives .....	11.17-2
11.17.3	Environmental Protection Measures .....	11.17-3
11.17.3.1	General Prevention Measures.....	11.17-3
11.17.3.2	Treatment and Control .....	11.17-4
11.17.4	Monitoring Program .....	11.17-5
11.17.4.1	Work Planning and Schedule .....	11.17-6
11.17.5	Reporting Requirements .....	11.17-7
11.18	Archaeological Sites Management Plan .....	11.18-1
11.18.1	Purpose .....	11.18-1
11.18.2	Performance Objectives .....	11.18-1
11.18.3	Environmental Protection Measures .....	11.18-2
11.18.3.1	General Heritage Management and Mitigation Strategies ...	11.18-2
11.18.3.2	Protected Heritage Sites within the Local Study Area and Site-specific Effects, Management, and Mitigation.....	11.18-5

11.18.3.3	Revisions to Project Footprint during Construction, Operation, and Closure.....	11.18-12
11.18.4	Monitoring.....	11.18-12
11.18.4.1	Site Monitoring and Flagging.....	11.18-13
11.18.4.2	Work Planning and Schedule.....	11.18-14
11.18.5	Reporting.....	11.18-14
11.18.5.1	Mitigation Reporting.....	11.18-14
11.18.5.2	Monitoring Reporting.....	11.18-15
11.18.5.3	Heritage Chance Find Procedure.....	11.18-15
11.19	Dark Sky Management and Monitoring Plan.....	11.19-1
11.19.1	Purpose.....	11.19-1
11.19.2	Performance Objectives.....	11.19-1
11.19.3	Environmental Protection Measures.....	11.19-1
11.19.3.1	Design Criteria.....	11.19-2
11.19.3.2	Construction.....	11.19-3
11.19.3.3	Operation.....	11.19-3
11.19.3.4	Decommissioning and Closure.....	11.19-3
11.19.3.5	Post Closure.....	11.19-4
11.19.4	Monitoring.....	11.19-4
11.19.5	Reporting.....	11.19-7
11.20	Transportation Management Plan.....	11.20-1
11.20.1	Purpose.....	11.20-1
11.20.2	Performance Objectives.....	11.20-4
11.20.3	Environmental Protection Measures.....	11.20-4
11.20.3.1	Design Criteria.....	11.20-5
11.20.3.2	Construction General.....	11.20-5
11.20.3.3	Construction.....	11.20-6
11.20.3.4	Operation.....	11.20-7
11.20.3.5	Decommissioning and Closure.....	11.20-7
11.20.3.6	Post-Closure.....	11.20-8
11.20.4	Monitoring.....	11.20-8
11.20.4.1	Work Planning and Schedule.....	11.20-8
11.20.5	Reporting.....	11.20-9
11.21	Access Management Plan.....	11.21-1
11.21.1	Purpose.....	11.21-1
11.21.2	Performance Objectives.....	11.21-1
11.21.3	Environmental Protection Measures.....	11.21-1

	11.21.3.1	Design Criteria.....	11.21-1
	11.21.3.2	Construction.....	11.21-2
	11.21.3.3	Operation.....	11.21-7
	11.21.3.4	Decommissioning and Closure.....	11.21-7
	11.21.3.5	Post-Closure .....	11.21-8
	11.21.3.6	Jacko Lake.....	11.21-8
	11.21.3.7	Special Interest Groups.....	11.21-9
11.21.4		Monitoring.....	11.21-9
	11.21.4.1	Work Planning and Schedule .....	11.21-9
11.21.5		Reporting.....	11.21-10
11.22		Noise and Vibration Management Plan .....	11.22-1
	11.22.1	Purpose .....	11.22-1
	11.22.2	Performance Objectives .....	11.22-1
	11.22.3	Environmental Protection Measures .....	11.22-2
	11.22.3.1	Design Criteria.....	11.22-2
	11.22.3.2	Construction.....	11.22-3
	11.22.3.3	Operation.....	11.22-4
	11.22.3.4	Decommissioning and Closure.....	11.22-5
	11.22.3.5	Post Closure.....	11.22-5
11.22.4		Monitoring.....	11.22-5
	11.22.4.1	Work Planning and Schedule .....	11.22-7
11.22.5		Reporting.....	11.22-7
	11.22.5.1	Complaint Resolution .....	11.22-7
11.23		Surface Water Quality Management and Monitoring Plan.....	11.23-1
	11.23.1	Purpose .....	11.23-1
	11.23.2	Performance Objectives .....	11.23-1
	11.23.3	Environmental Protection Measures .....	11.23-2
	11.23.3.1	Design Criteria.....	11.23-3
	11.23.3.2	Construction.....	11.23-4
	11.23.3.3	Operation.....	11.23-4
	11.23.3.4	Decommissioning and Closure.....	11.23-5
	11.23.3.5	Post Closure.....	11.23-6
11.23.4		Monitoring.....	11.23-6
	11.23.4.1	Surface Water Quality Data Collection and Analysis Methods .....	11.23-6
	11.23.4.2	Surface Water Quality Monitoring.....	11.23-7
	11.23.4.3	Work Planning and Schedule .....	11.23-8

	11.23.4.4	Action Triggers .....	11.23-10
	11.23.5	Reporting .....	11.23-11
11.24		Groundwater Quality Management and Monitoring Plan.....	11.24-1
	11.24.1	Purpose .....	11.24-1
	11.24.2	Performance Objectives .....	11.24-1
	11.24.3	Environmental Protection Measures .....	11.24-2
	11.24.3.1	Design Criteria .....	11.24-3
	11.24.3.2	Construction.....	11.24-3
	11.24.3.3	Operation.....	11.24-4
	11.24.3.4	Decommissioning and Closure.....	11.24-5
	11.24.3.5	Post Closure.....	11.24-6
	11.24.4	Monitoring.....	11.24-6
	11.24.4.1	Groundwater Quality Data Collection and Analysis Methods .....	11.24-6
	11.24.4.2	Groundwater Quality Monitoring .....	11.24-7
	11.24.4.3	Work Planning and Schedule .....	11.24-8
	11.24.4.4	Action Triggers .....	11.24-8
	11.24.5	Reporting .....	11.24-14
11.25		Fisheries And Aquatic Life Monitoring Plan.....	11.25-1
	11.25.1	Purpose .....	11.25-1
	11.25.2	Performance Objectives .....	11.25-2
	11.25.3	Environmental Protection Measures .....	11.25-3
	11.25.3.1	Design Criteria .....	11.25-4
	11.25.3.2	Effect-Specific Protection Measures .....	11.25-4
	11.25.3.3	General Protection Measures during Construction and Operation.....	11.25-8
	11.25.3.4	Decommissioning and Closure.....	11.25-10
	11.25.3.5	Post Closure.....	11.25-10
	11.25.4	Monitoring.....	11.25-10
	11.25.4.1	Construction Phase Monitoring.....	11.25-10
	11.25.4.2	Monitoring Required under <i>Fisheries Act</i> Authorizations ..	11.25-11
	11.25.4.3	Aquatic Effects Monitoring .....	11.25-11
	11.25.5	Reporting .....	11.25-12
	11.25.5.1	Non-compliance/Spill Event Reporting .....	11.25-13
	11.25.5.2	Construction Phase Monitoring Reporting.....	11.25-13
	11.25.5.3	Monitoring Reports Required as a Condition under Section 35(1) <i>Fisheries Act</i> Authorizations .....	11.25-14

11.25.5.4	AEM Effluent and Water Quality Monitoring Program Reporting .....	11.25-14
11.25.5.5	AEM Biological Effects Monitoring Reporting.....	11.25-14
11.26	Landscape Design and Restoration Plan.....	11.26-1
11.26.1	Purpose .....	11.26-1
11.26.2	Conceptual Framework .....	11.26-1
11.26.2.1	End Land Use Objectives.....	11.26-2
11.26.2.2	Pre- and Post-mine Ecosystems.....	11.26-3
11.26.3	Conceptual Restoration Principles.....	11.26-4
11.26.3.1	Post-mining Landforms.....	11.26-4
11.26.3.2	Site Preparation – Soils .....	11.26-5
11.26.3.3	Structural Diversity .....	11.26-6
11.26.3.4	Water Conservation.....	11.26-6
11.26.4	End Land Use Objectives .....	11.26-7
11.26.5	Reclamation Species Selection.....	11.26-8
11.26.5.1	Collection of Native Seed and Cones for Propagation.....	11.26-8
11.26.5.2	Revegetation – Species Selection for Agricultural Objectives.....	11.26-8
11.26.5.3	Revegetation – Species Selection and Structure for Wildlife Habitat Objectives .....	11.26-9
11.26.6	Soil Fertilization Recommendations.....	11.26-14
11.26.7	Long Term Stability.....	11.26-16
11.26.8	Operational and Post-closure Monitoring and Reporting.....	11.26-16
11.26.8.1	Vegetation Composition and Productivity .....	11.26-17
11.26.8.2	Trace Elements in Soils and Uptake in Vegetation.....	11.26-17
11.26.8.3	Range Capability .....	11.26-17
11.26.9	Reclamation Research.....	11.26-18
11.27	Wildlife and Vegetation Monitoring Plan.....	11.27-1
11.27.1	Purpose .....	11.27-1
11.27.1.1	Guiding Principles.....	11.27-1
11.27.1.2	Regulatory and Policy Framework .....	11.27-2
11.27.2	Performance Objectives .....	11.27-4
11.27.3	Environmental Protection Measures .....	11.27-4
11.27.3.1	Wildlife Sensitivity Timing Windows .....	11.27-5
11.27.3.2	Nuisance Wildlife .....	11.27-5
11.27.3.3	Heavy Metals Monitoring .....	11.27-5
11.27.3.4	Rare Plants.....	11.27-7
11.27.3.5	Rare and Sensitive Ecosystems.....	11.27-8

11.27.3.6	Grasslands .....	11.27-11
11.27.3.7	Amphibians .....	11.27-12
11.27.3.8	Reptiles.....	11.27-17
11.27.3.9	Migratory Birds.....	11.27-17
11.27.3.10	Raptors .....	11.27-17
11.27.3.11	Non-migratory Game Birds .....	11.27-18
11.27.3.12	Mammals .....	11.27-18
11.27.4	Monitoring.....	11.27-19
11.27.4.1	Work Planning and Schedule .....	11.27-20
11.27.5	Reporting.....	11.27-20
11.28	Reclamation and Closure Plan.....	11.28-1
11.28.1	Closure Objectives.....	11.28-1
11.28.2	Temporary Closure .....	11.28-2
11.28.2.1	Temporary Closure Monitoring and Decision to Close .....	11.28-2
11.28.3	Closure Monitoring.....	11.28-2
11.29	Socio-economic Monitoring Plan.....	11.29-1
11.29.1	Purpose .....	11.29-2
11.29.2	Performance Objectives .....	11.29-2
11.29.3	Monitoring Plans .....	11.29-3
11.29.3.1	Related Monitoring Plans.....	11.29-3
11.29.3.2	Socio-economic Environment Valued Components .....	11.29-3
11.29.4	Community Liaison Group.....	11.29-6
11.29.4.1	Overview .....	11.29-6
11.29.4.2	Stakeholder Participation .....	11.29-7
11.29.4.3	Mechanisms for Communication and Engagement .....	11.29-8
11.29.5	Methodology and Schedule .....	11.29-9
11.29.6	Reporting.....	11.29-9
11.30	Compliance Reporting .....	11.30-1
11.30.1	Introduction .....	11.30-1
11.30.2	Authorizations and Compliance Reporting.....	11.30-2
11.30.3	Notifications.....	11.30-2
11.30.4	Voluntary Reporting.....	11.30-2
11.31	References.....	11.31-1

## PART C. ABORIGINAL GROUPS INFORMATION REQUIREMENTS

12.	Background and Aboriginal Groups Settings .....	12-1
12.1	Introduction.....	12-1
12.1.1	Information Sources and Methods.....	12-2

12.1.2	Limitations.....	12-2
12.2	Secwépemc Nation.....	12-7
12.2.1	History .....	12-7
12.2.2	Secwépemc Governance.....	12-10
12.2.3	Secwépemc Rights and Title .....	12-11
12.2.4	Stk'emlupsemc te Secwépemc Nation Traditional Knowledge and Traditional Land Use .....	12-13
12.2.4.1	Seasonal Round and Associated Rights and Title.....	12-14
12.2.4.2	Hunting.....	12-19
12.2.4.3	Fishing.....	12-21
12.2.4.4	Plant Harvesting.....	12-28
12.2.4.5	Other Uses .....	12-33
12.2.4.6	Future Land Use .....	12-35
12.2.5	Tk'emlúps te Secwépemc .....	12-35
12.2.5.1	History .....	12-35
12.2.5.2	Language .....	12-35
12.2.5.3	Traditional Territory .....	12-36
12.2.5.4	Reserves .....	12-36
12.2.5.5	Governance.....	12-36
12.2.5.6	Social Setting .....	12-39
12.2.5.7	Health Services.....	12-41
12.2.5.8	Protective Services.....	12-42
12.2.5.9	Land Use Setting and Planning .....	12-43
12.2.5.10	Treaty Status.....	12-45
12.2.5.11	Historic Land Use.....	12-45
12.2.5.12	Current Use of Lands and Resources for Traditional Purposes.....	12-46
12.2.5.13	Economy .....	12-47
12.2.5.14	Educational Characteristics.....	12-48
12.2.5.15	Workforce and Income Characteristics.....	12-48
12.2.6	Skeetchestn Indian Band .....	12-50
12.2.6.1	History .....	12-50
12.2.6.2	Language .....	12-51
12.2.6.3	Traditional Territory .....	12-51
12.2.6.4	Reserves .....	12-51
12.2.6.5	Governance.....	12-51
12.2.6.6	Social Setting .....	12-52

12.2.6.7	Health Services.....	12-54
12.2.6.8	Protective Services.....	12-54
12.2.6.9	Land Use Setting and Planning .....	12-54
12.2.6.10	Treaty Status.....	12-55
12.2.6.11	Historic Land Use .....	12-55
12.2.6.12	Current Use of Lands and Resources for Traditional Purposes.....	12-56
12.2.6.13	Economy .....	12-57
12.2.6.14	Educational Characteristics.....	12-57
12.2.6.15	Workforce and Income Characteristics.....	12-58
12.2.7	Whispering Pines / Clinton Indian Band .....	12-59
12.2.7.1	History .....	12-59
12.2.7.2	Language .....	12-60
12.2.7.3	Traditional Territory .....	12-60
12.2.7.4	Reserves .....	12-60
12.2.7.5	Governance.....	12-60
12.2.7.6	Social Setting .....	12-61
12.2.7.7	Health Services.....	12-63
12.2.7.8	Protective Services.....	12-63
12.2.7.9	Land Use Setting and Planning .....	12-63
12.2.7.10	Treaty Status.....	12-64
12.2.7.11	Historic Land Use.....	12-64
12.2.7.12	Current Use of Lands and Resources for Traditional Purposes.....	12-64
12.2.7.13	Economy .....	12-66
12.2.7.14	Education Characteristics.....	12-67
12.2.7.15	Workforce Characteristics .....	12-67
12.3	the Nlaka'pamux Nation .....	12-68
12.3.1	History .....	12-68
12.3.2	Nlaka'Pamux Nation Traditional Knowledge and Traditional Land Use .....	12-69
12.3.2.1	Fishing.....	12-69
12.3.2.2	Hunting.....	12-69
12.3.2.3	Plant Harvesting .....	12-70
12.3.3	Lower Nicola Indian Band .....	12-71
12.3.3.1	History .....	12-71
12.3.3.2	Language .....	12-72
12.3.3.3	Traditional Territory .....	12-72

12.3.3.4	Reserves .....	12-72
12.3.3.5	Governance.....	12-73
12.3.3.6	Social Setting .....	12-73
12.3.3.7	Health and Social Services.....	12-76
12.3.3.8	Protective Services.....	12-76
12.3.3.9	Land Use Setting and Planning .....	12-76
12.3.3.10	Treaty Status.....	12-78
12.3.3.11	Historic Land Use .....	12-78
12.3.3.12	Current Use of Lands and Resources for Traditional Purposes.....	12-78
12.3.3.13	Economy .....	12-79
12.3.3.14	Education Characteristics .....	12-81
12.3.3.15	Workforce Characteristics .....	12-81
12.3.4	Ashcroft Indian Band.....	12-82
12.3.4.1	History .....	12-82
12.3.4.2	Language .....	12-83
12.3.4.3	Traditional Territory .....	12-83
12.3.4.4	Reserves .....	12-83
12.3.4.5	Governance.....	12-83
12.3.4.6	Social Setting .....	12-84
12.3.4.7	Marital Status .....	12-84
12.3.4.8	Mobility Characteristics.....	12-84
12.3.4.9	Household and Dwelling Characteristics .....	12-85
12.3.4.10	Health Services.....	12-86
12.3.4.11	Protective Services.....	12-86
12.3.4.12	Land Use Setting and Planning .....	12-86
12.3.4.13	Treaty Status.....	12-86
12.3.4.14	Historic Land Use .....	12-87
12.3.4.15	Current Use of Lands and Resources for Traditional Purposes.....	12-87
12.3.4.16	Economy .....	12-87
12.3.4.17	Education Characteristics .....	12-89
12.3.4.18	Workforce Characteristics .....	12-90
12.4	Métis Nation British Columbia.....	12-91
12.4.1	History .....	12-91
12.4.2	Language .....	12-91
12.4.3	Métis Nation British Columbia.....	12-92

12.4.4	Governance .....	12-92
12.4.5	Land Use Setting and Planning.....	12-93
12.4.6	Treaty Status.....	12-94
12.4.7	Traditional Land Use .....	12-94
12.4.8	Economy .....	12-94
12.5	References.....	12-97
13.	Aboriginal Interests (Rights and Title).....	13-1
13.1	Overview of Aboriginal Interests.....	13-1
13.2	Scope of the Assessment.....	13-2
13.2.1	Regulatory and Policy Setting .....	13-2
13.2.2	Assessment Methodology .....	13-3
13.2.3	Scope of the Assessment.....	13-5
13.2.4	Assessment Boundaries.....	13-6
13.2.4.1	Temporal Boundaries.....	13-6
13.2.4.2	Spatial Boundaries.....	13-41
13.3	Identifying Interests with Affected Aboriginal Groups.....	13-41
13.4	Integration of Aboriginal Traditional Knowledge / Traditional Land Use.....	13-43
13.5	Location of the Project in relation to Aboriginal Traditional Territories .....	13-44
13.6	Stk'emlupsemc te Secwépemc Nation.....	13-44
13.6.1	Past, Current, and Anticipated Land Uses .....	13-44
13.6.1.1	Historic Practice of Aboriginal Rights.....	13-47
13.6.1.2	Present Day Practice of Aboriginal Interests .....	13-48
13.6.1.3	Future Practice of Aboriginal Interests.....	13-51
13.6.2	Asserted SSN Aboriginal Interests.....	13-51
13.6.3	Asserted SSN Aboriginal Title.....	13-54
13.6.4	SSN Interests Effects Assessment and Mitigation .....	13-57
13.6.4.1	Summary of Residual Effects on SSN Interests .....	13-58
13.6.4.2	Other Potential Effects .....	13-72
13.6.4.3	Aboriginal Title.....	13-79
13.7	Ashcroft Indian Band .....	13-82
13.7.1	Past, Current, and Anticipated Land Uses .....	13-82
13.7.2	Asserted AIB Aboriginal Interests (Rights and Title).....	13-83
13.7.3	AIB Interests Effects Assessment and Mitigation .....	13-83
13.7.3.1	Summary of Residual Effects on AIB Interests.....	13-84
13.7.3.2	Aboriginal Title.....	13-87
13.8	Lower Nicola Indian Band .....	13-88
13.8.1	Past, Current, and Anticipated Future Land Uses.....	13-88

13.8.2	Asserted LNIB Aboriginal Rights and Title.....	13-89
13.8.3	LNIB Interest Effects Assessment and Mitigation.....	13-89
13.8.3.1	Summary of Residual Effects on LNIB Interests.....	13-90
13.8.3.2	Aboriginal Title.....	13-96
13.9	Whispering Pines / Clinton Indian Band.....	13-97
13.9.1	Past, Current, and Anticipated Future Land Uses.....	13-97
13.9.2	Asserted WP/CIB Aboriginal Rights and Title.....	13-98
13.9.3	WP/CIB Rights Effects Assessment and Mitigation.....	13-99
13.9.3.1	Summary of Residual Effects on WP/CIB Interests.....	13-99
13.9.3.2	Aboriginal Title.....	13-105
13.10	Métis Nation.....	13-106
13.10.1	Past, Current, and Anticipated Future Land Uses.....	13-106
13.10.2	Asserted MNBC Aboriginal Rights.....	13-107
13.10.3	MNBC Rights Effects Assessment and Mitigation.....	13-107
13.11	References.....	13-115
14.	Other Potential Effects on Aboriginal Interests.....	14-1
14.1	Introduction and Approach.....	14-1
14.1.1	Definition of Other Aboriginal Interests.....	14-2
14.1.2	Assessment Methodology.....	14-2
14.2	Stk’emlupsemc te Secwépemc Nation.....	14-4
14.2.1	Other Aboriginal Interests and Concerns Identified in the Project Area.....	14-4
14.2.2	Potential Effects of the Project and Proposed Mitigation on SSN Other Interests.....	14-7
14.2.2.1	Potential Economic Effects.....	14-7
14.2.2.2	Mitigation and Enhancement Measures for Potential Economic Effects.....	14-10
14.2.2.3	Potential Social Effects.....	14-11
14.2.2.4	Mitigation Measures for Potential Social Effects.....	14-14
14.2.2.5	Potential Physical and Cultural Heritage Effects.....	14-15
14.2.2.6	Mitigation Measures for Potential Physical and Cultural Heritage Effects.....	14-19
14.2.2.7	Potential Health Effects.....	14-21
14.2.2.8	Mitigation Measures for Potential Health Effects.....	14-25
14.2.3	Residual Effects.....	14-26
14.2.3.1	Residual Economic Effects.....	14-26
14.2.3.2	Residual Social Effects.....	14-27

14.2.3.3	Residual Physical and Cultural Heritage Effects .....	14-27
14.2.3.4	Residual Health Effects.....	14-29
14.2.3.5	Summary of Residual Effects.....	14-30
14.2.4	Other Environmental Concerns Expressed by SSN.....	14-30
14.2.4.1	Water Quality and Quantity .....	14-30
14.2.4.2	Accidents and Malfunctions .....	14-35
14.2.4.3	Reclamation.....	14-36
14.2.4.4	Assessment of Cumulative Effects.....	14-36
14.3	Ashcroft Indian Band .....	14-36
14.3.1	Other Aboriginal Interests and Concerns Identified in the Project Area .....	14-36
14.3.2	Assessment of Effects on Identified AIB Other Interests.....	14-37
14.3.2.1	Economic Conditions .....	14-37
14.3.2.2	Health Conditions .....	14-38
14.3.2.3	Other Environmental Concerns Expressed by AIB .....	14-39
14.4	Lower Nicola Indian Band .....	14-41
14.4.1	Other Aboriginal Interests and Concerns Identified in the Project Area .....	14-41
14.4.2	Assessment of Effects on Identified LNIB Other Interests .....	14-42
14.4.2.1	Economic Conditions .....	14-42
14.4.2.2	Other Environmental Concerns Expressed by LNIB.....	14-43
14.5	Whispering Pines/ Clinton Indian Band.....	14-45
14.5.1	Other Aboriginal Interests and Concerns Identified in the Project Area .....	14-45
14.5.2	Assessment of Effects on Identified WP/CIB Other Interests .....	14-47
14.5.2.1	Economic Conditions .....	14-47
14.5.2.2	Social Conditions.....	14-48
14.5.2.3	Health Conditions .....	14-49
14.5.2.4	Other Environmental Concerns Expressed by WP/CIB.....	14-51
14.6	Métis Nation.....	14-54
14.6.1	Other Aboriginal Interests Identified in the Project Area.....	14-54
14.6.2	Potential Effects of the Project and Proposed Mitigation on MNBC Other Interests .....	14-55
14.6.2.1	Economic Conditions .....	14-55
14.6.2.2	Social Conditions .....	14-56
14.6.2.3	Health Conditions .....	14-58
14.6.2.4	Other Environmental Concerns Expressed by MNBC.....	14-58
14.7	References.....	14-61

15. Procedural Aspects of Aboriginal Consultation ..... 15-1

15.1 Introduction..... 15-1

15.2 Background ..... 15-1

15.3 Pre-Application/EIS Consultation..... 15-3

15.3.1 Information Distribution Methods..... 15-3

15.3.2 Stk’emlupsemc Te Secwépemc Nation..... 15-5

15.3.2.1 Early Engagement ..... 15-5

15.3.2.2 Environmental Assessment Procedures..... 15-5

15.3.2.3 Consultation Activities ..... 15-12

15.3.2.4 Key Consultation Topics..... 15-23

15.3.2.5 Issues Raised by SSN ..... 15-31

15.3.3 Ashcroft Indian Band..... 15-39

15.3.3.1 Environmental Assessment Procedures..... 15-39

15.3.3.2 Issues Raised by AIB ..... 15-43

15.3.4 Lower Nicola Indian Band ..... 15-45

15.3.4.1 Environmental Assessment Process..... 15-45

15.3.4.2 Consultation Activities ..... 15-46

15.3.4.3 Issues Raised by LNIB ..... 15-49

15.3.5 Whispering Pines / Clinton Indian Band ..... 15-52

15.3.5.1 Environmental Assessment Procedures..... 15-52

15.3.5.2 Consultation Activities ..... 15-52

15.3.5.3 Issues Raised by WP/CIB..... 15-55

15.3.6 Métis Nation British Columbia..... 15-59

15.3.6.1 Environmental Assessment Procedures..... 15-59

15.3.6.2 Consultation Activities ..... 15-59

15.3.6.3 Issues Raised by MNBC..... 15-61

15.4 Project Design Changes as a Result of Consultation ..... 15-64

15.5 Consultation during Application Review ..... 15-65

15.5.1 First Nations Consultation Plan ..... 15-65

15.5.2 Aboriginal Consultation Methods and Timing- Application Review ..... 15-67

15.5.3 Process for Resolving Outstanding Issues ..... 15-69

15.5.4 KAM’s Principles for Sustainable Relationships with First Nations..... 15-70

15.6 References ..... 15-71

16. Summary ..... 16-1

16.1 Consultation with Aboriginal Groups..... 16-1

16.2 Summary of Consultation Results..... 16-1

16.3 Summary of Effects on Aboriginal Interests..... 16-3

16.3.1	Stk'emlupsemc te Secwépemc Nation.....	16-5
16.3.2	Other Aboriginal Groups .....	16-10
16.3.2.1	Ashcroft Indian Band .....	16-10
16.3.2.2	Lower Nicola Indian Band .....	16-12
16.3.2.3	Whispering Pines / Clinton Indian Band .....	16-13
16.3.2.4	Métis Nation British Columbia .....	16-16

#### PART D. FEDERAL INFORMATION REQUIREMENTS

17.	Federal Environmental Assessment Requirements.....	17.1-1
17.1	Environmental Effects.....	17.1-1
17.2	Federal Components .....	17.2-1
17.3	Need for, Purpose of, and Alternatives to the Project.....	17.3-1
17.3.1	Introduction .....	17.3-1
17.3.2	Assessment.....	17.3-1
17.3.2.1	Economic Viability .....	17.3-2
17.3.2.2	Natural Environment Acceptability.....	17.3-2
17.3.2.3	Human Environment Acceptability.....	17.3-3
17.3.3	Conclusion.....	17.3-4
17.4	Alternative Means of Carrying Out the Project.....	17.4-1
17.4.1	Introduction .....	17.4-1
17.4.2	Approach to Assessment.....	17.4-2
17.4.3	General Arrangement Alternatives.....	17.4-5
17.4.3.1	Introduction.....	17.4-5
17.4.3.2	Natural and Human Environment Acceptability .....	17.4-6
17.4.3.3	Preferred Alternative .....	17.4-7
17.4.4	Mining Method Alternatives .....	17.4-8
17.4.4.1	Introduction.....	17.4-8
17.4.4.2	Technical and Economic Feasibility .....	17.4-8
17.4.4.3	Preferred Alternative .....	17.4-9
17.4.5	Production Rate Alternatives.....	17.4-10
17.4.5.1	Introduction.....	17.4-10
17.4.5.2	Economic Feasibility .....	17.4-10
17.4.5.3	Natural and Human Environment Acceptability .....	17.4-11
17.4.5.4	Preferred Alternative .....	17.4-12
17.4.6	Open Pit Limits Alternatives .....	17.4-12
17.4.6.1	Introduction.....	17.4-12
17.4.6.2	Economic Feasibility .....	17.4-12
17.4.6.3	Natural and Human Environment Acceptability .....	17.4-13

17.4.6.4	Preferred Alternative .....	17.4-14
17.4.7	Mine Rock Storage Alternatives.....	17.4-15
17.4.7.1	Introduction.....	17.4-15
17.4.7.2	Natural and Human Environment Acceptability .....	17.4-16
17.4.7.3	Preferred Alternative .....	17.4-23
17.4.8	Tailings Storage Facility Alternatives Assessment .....	17.4-23
17.4.8.1	Introduction.....	17.4-23
17.4.8.2	Tailings Alternative Assessment Studies for Ajax.....	17.4-24
17.4.8.3	Aboriginal Interests.....	17.4-25
17.4.8.4	Methodology .....	17.4-26
17.4.8.5	Step 1 - Identification of Potential Locations and Technologies.....	17.4-27
17.4.8.6	Step 2 - Pre-screening (Fatal-flaw) Assessment .....	17.4-27
17.4.8.7	Step 3 - Screening Assessment.....	17.4-31
17.4.8.8	Best Available Technology .....	17.4-59
17.4.8.9	Step 5 - Best Practices .....	17.4-61
17.4.8.10	Conclusion.....	17.4-62
17.4.9	Tailings Storage Facility Closure Alternatives .....	17.4-63
17.4.9.1	Introduction.....	17.4-63
17.4.9.2	Economic and Technical Feasibility .....	17.4-65
17.4.9.3	Natural and Human Environment Acceptability .....	17.4-68
17.4.9.4	Preferred Alternative .....	17.4-69
17.4.10	Water Supply Alternatives.....	17.4-69
17.4.10.1	Introduction.....	17.4-69
17.4.10.2	Assessment .....	17.4-71
17.4.10.3	Preferred Alternative .....	17.4-73
17.4.11	Jacko Lake Management Alternatives.....	17.4-73
17.4.11.1	Introduction.....	17.4-73
17.4.11.2	Partial Containment or Release of the Probable Maximum Flood (PMF) .....	17.4-74
17.4.11.3	Peterson Creek Diversion Route Alternatives.....	17.4-75
17.4.12	Product Transport Method Alternatives.....	17.4-81
17.4.12.1	Introduction.....	17.4-81
17.4.12.2	Technical and Economic Feasibility .....	17.4-81
17.4.12.3	Natural and Human Environment.....	17.4-82
17.4.12.4	Preferred Alternative .....	17.4-82
17.4.13	Transport Corridor Route Alternatives.....	17.4-82

17.4.13.1	Introduction.....	17.4-82
17.4.13.2	Technical and Economic Feasibility .....	17.4-83
17.4.13.3	Preferred Alternative .....	17.4-83
17.4.14	Site Access Road Alternatives.....	17.4-83
17.4.14.1	Introduction.....	17.4-83
17.4.14.2	Assessment .....	17.4-84
17.4.15	Explosives Supply Alternatives.....	17.4-88
17.4.15.1	Preferred Alternative .....	17.4-88
17.4.15.2	Introduction.....	17.4-89
17.4.15.3	Assessment .....	17.4-89
17.4.15.4	Preferred Alternative .....	17.4-89
17.4.15.5	Explosives Facility (Magazine) Location.....	17.4-90
17.4.16	Blasting Schedule Alternatives.....	17.4-90
17.4.16.1	Introduction.....	17.4-90
17.4.16.2	Economic Performance .....	17.4-91
17.4.16.3	Natural and Human Environment Performance .....	17.4-91
17.4.16.4	Preferred Alternative .....	17.4-91
17.4.17	Power Supply Alternatives .....	17.4-92
17.4.17.1	Introduction.....	17.4-92
17.4.17.2	Technical and Economic Feasibility .....	17.4-93
17.4.17.3	Natural and Human Environment Acceptability .....	17.4-96
17.4.17.4	Preferred Alternative .....	17.4-97
17.4.18	Transmission Line and Gas Pipeline Alternatives.....	17.4-98
17.5	Effects of the Environment on the Project .....	17.5-1
17.5.1	Introduction .....	17.5-1
17.5.2	Climate and Meteorology.....	17.5-1
17.5.2.1	Climate .....	17.5-1
17.5.2.2	Precipitation .....	17.5-4
17.5.2.3	Air Temperatures.....	17.5-8
17.5.2.4	Wind .....	17.5-12
17.5.3	Surface Water Flows .....	17.5-14
17.5.3.1	Typical Surface Water Flows .....	17.5-14
17.5.3.2	Flooding .....	17.5-16
17.5.3.3	Drought.....	17.5-20
17.5.4	Lightning .....	17.5-21
17.5.4.1	Effects of Lightning on the Project .....	17.5-21
17.5.4.2	Mitigation Measures .....	17.5-22

17.5.5	Wildfires .....	17.5-22
17.5.5.1	Effects on the Project .....	17.5-24
17.5.5.2	Mitigation Measures .....	17.5-25
17.5.5.3	Contingency Plans.....	17.5-26
17.5.6	Geophysical Effects .....	17.5-26
17.5.6.1	Baseline Summary/Existing Conditions.....	17.5-26
17.5.6.2	Debris Flows.....	17.5-27
17.5.6.3	Surface Erosion .....	17.5-27
17.5.6.4	Rockfalls.....	17.5-28
17.5.6.5	Snow Avalanches.....	17.5-28
17.5.6.6	Seismic Activity .....	17.5-29
17.5.7	Climate Change .....	17.5-31
17.5.7.1	Climate Change Regulatory Context .....	17.5-31
17.5.7.2	Climate Change Adaptation and Contingency Planning .....	17.5-32
17.5.7.3	Climate Change Projections for the Project Area .....	17.5-33
17.5.7.4	Project-related Adaptation and Mitigation Measures .....	17.5-33
17.6	Accidents and Malfunctions.....	17.6-1
17.6.1	Introduction .....	17.6-1
17.6.1.1	Approach to Risk Management.....	17.6-1
17.6.1.2	Requirements for Environmental Assessment .....	17.6-2
17.6.2	Failure Modes and Effects Analysis.....	17.6-3
17.6.2.1	Workshop Overview .....	17.6-3
17.6.2.2	Failure Modes and Effects Analysis Methodology .....	17.6-4
17.6.2.3	FMEA Risk Evaluation Summary .....	17.6-7
17.6.2.4	Assessment of Potential Environmental Effects.....	17.6-9
17.6.2.5	Risk Profiles.....	17.6-10
17.6.3	Dam Breach Inundation Study .....	17.6-10
17.6.3.1	TSF Design.....	17.6-63
17.6.3.2	Approach.....	17.6-64
17.6.3.3	Screening Study .....	17.6-65
17.6.3.4	Potential Failure Modes Analysis.....	17.6-66
17.6.3.5	Dam Breach Inundation Evaluation .....	17.6-67
17.6.3.6	Recommendations .....	17.6-71
17.6.4	Downstream Effects of Dam Breach Scenarios .....	17.6-71
17.6.4.1	Valued Component Matrix .....	17.6-71
17.6.4.2	Preventative Controls .....	17.6-75
17.6.4.3	Mitigation Response.....	17.6-76

	17.6.4.4	Characterization of Environmental Effects.....	17.6-77
	17.6.4.5	Risk Profiles.....	17.6-78
	17.6.5	Conclusion.....	17.6-78
17.7		Mitigation Measures.....	17.7-1
17.8		Residual Environmental Effects .....	17.8-1
17.9		Significance Assessment/ Analysis .....	17.9-1
17.10		Cumulative Environmental Effects.....	17.10-1
17.11		Aboriginal Engagement And Consultation .....	17.11-1
	17.11.1	Aboriginal Groups Consultation Requirements .....	17.11-1
	17.11.2	Summary of Consultation with Aboriginal Groups.....	17.11-1
	17.11.3	Effects on Current Use of Land and Resources for Traditional Purposes by Aboriginal Groups.....	17.11-3
	17.11.4	Effects on Aboriginal Interests .....	17.11-4
	17.11.5	Effects on Other Aboriginal Interests .....	17.11-5
17.12		Follow-up Programs and Adaptive Management.....	17.12-1
	17.12.1	Groundwater Follow-up Program.....	17.12-1
	17.12.2	Surface Water Quality Follow-up Program.....	17.12-2
	17.12.3	Terrestrial Ecology Follow-up Program.....	17.12-2
	17.12.3.1	Rare Plants and Ecosystems at Risk Surveys.....	17.12-2
	17.12.3.2	Wetland Compensation Follow-up Program .....	17.12-3
	17.12.4	Fish and Aquatic Resources Follow-up Program .....	17.12-4
	17.12.4.1	Fish Habitat Offset Plan.....	17.12-4
	17.12.5	Heritage Sites Follow-up Program.....	17.12-4
17.13		Capacity of Renewable Resources.....	17.13-1
	17.13.1	Regulatory Context .....	17.13-1
	17.13.2	Methodology .....	17.13-1
	17.13.3	Spatial and Temporal Boundaries.....	17.13-1
	17.13.4	Identification of Renewable Resources .....	17.13-2
	17.13.5	Present and Future Use of Renewable Resources.....	17.13-5
	17.13.6	Groundwater Quantity .....	17.13-5
	17.13.7	Fish and Fish Habitat.....	17.13-7
	17.13.8	Rare and Sensitive Ecosystems.....	17.13-8
	17.13.9	Grasslands .....	17.13-9
	17.13.10	Migratory Birds .....	17.13-10
	17.13.11	Conclusion.....	17.13-11
17.14		Benefits to Canadians of the Federal Environment Assessment Process .....	17.14-1
	17.14.1	Introduction .....	17.14-1

17.14.2 Prevention or Reduction of Environmental Effect and Maximization of Environmental Benefit.....17.14-1

17.14.3 Technology Innovations .....17.14-4

17.14.4 Reduction in Project Costs .....17.14-5

17.14.5 Protection of Aboriginal Interests .....17.14-5

17.14.6 Increases in Scientific Knowledge.....17.14-6

17.14.7 Increase in Community and Social Benefits .....17.14-7

17.14.8 Protection of Public Health and Safety.....17.14-8

17.15 References.....17.15-1

PART E. CONCLUSIONS

18. Summary and Conclusions .....18-1

18.1 Introduction.....18-1

18.2 Summary of Residual Effects and Mitigation Measures .....18-2

18.2.1 Assessment of Potential Environmental Effects: Summaries and Conclusions .....18-25

18.2.1.1 Greenhouse Gas Management.....18-25

18.2.1.2 Geology, Landforms and Soils.....18-25

18.2.1.3 Surface Water Quality .....18-25

18.2.1.4 Surface Water Quantity .....18-26

18.2.1.5 Groundwater Quality.....18-26

18.2.1.6 Groundwater Quantity .....18-26

18.2.1.7 Fish Populations and Fish Habitat .....18-26

18.2.1.8 Rare Plants.....18-27

18.2.1.9 Rare and Sensitive Ecological Communities .....18-27

18.2.1.10 Grasslands .....18-27

18.2.1.11 Terrestrial Invertebrates .....18-28

18.2.1.12 Amphibians .....18-28

18.2.1.13 Reptiles.....18-29

18.2.1.14 Migratory Birds.....18-29

18.2.1.15 Raptors .....18-29

18.2.1.16 Non-migratory Gamebirds.....18-30

18.2.1.17 Mammals .....18-31

18.2.2 Assessment of Potential Economic Effects: Summaries and Conclusions .....18-32

18.2.2.1 Economic Growth.....18-32

18.2.2.2 Labour Force, Employment and Training.....18-32

18.2.2.3 Income.....18-33

18.2.2.4	Business.....	18-33
18.2.2.5	Property Values .....	18-33
18.2.2.6	Economic Diversification.....	18-34
18.2.3	Assessment of Potential Social Effects: Summaries and Conclusions.....	18-34
18.2.3.1	Infrastructure, Public Facilities and Services.....	18-34
18.2.3.2	Dark Sky.....	18-35
18.2.3.3	Visual Impact and Aesthetic Features .....	18-35
18.2.3.4	Land and Resource Use .....	18-35
18.2.3.5	Current Use of Land and Resources for Traditional Purposes.....	18-36
18.2.3.6	Outdoor Recreation.....	18-36
18.2.4	Assessment of Potential Heritage Effects: Summaries and Conclusions .....	18-36
18.2.4.1	Archaeological Sites .....	18-36
18.2.4.2	Aboriginal and Non-Aboriginal Heritage Sites.....	18-37
18.2.5	Assessment of Potential Health Effects: Summaries and Conclusions .....	18-38
18.2.5.1	Air Quality.....	18-38
18.2.5.2	Domestic Water Quality .....	18-38
18.2.5.3	Country Foods .....	18-38
18.2.5.4	Human Health .....	18-39
18.2.5.5	Noise and Vibration.....	18-39
18.2.5.6	Healthy Living and Health Education.....	18-40
18.2.5.7	Community Health and Well-being .....	18-40
18.3	Summary of Proposed Environmental Management and Monitoring Plans.....	18-40
18.4	Commitments.....	18-42
18.5	Conclusion.....	18-46
18.6	References.....	18-49

### *LIST OF FIGURES*

Figure 1. Ajax Project Map.....	Executive Summary	3
Figure 2. Ajax Project General Arrangement .....	Executive Summary	5
Figure 2.2-1. Location of Ajax Project.....		2-5
Figure 2.6-1. Ajax Property Mineral Tenure.....		2-13
Figure 2.6-2. Ajax Property Surface Tenure .....		2-15

Figure 2.6-3. Ajax Property – Transmission Line Corridor and Surface Tenure.....2-17

Figure 2.6-4. Ajax Property – Access Road Corridor and Surface Tenure .....2-19

Figure 2.6-5. Ajax Property – Water Supply Pipeline and Surface Tenure .....2-21

Figure 3.3-1. Geology of the Iron Mask Batholith.....3-15

Figure 3.3-2. Interpreted Structural Faults of the Ajax Project .....3-19

Figure 3.3-3. Soil Profile of the Ajax Project (BGC 2011) .....3-21

Figure 3.5-1. Conceptual General Arrangement Year -2 .....3-29

Figure 3.5-2. Conceptual General Arrangement Year -1 .....3-31

Figure 3.5-3. Conceptual General Arrangement Year 1.....3-33

Figure 3.5-4. Conceptual General Arrangement Year 2.....3-35

Figure 3.5-5. Conceptual General Arrangement Year 5.....3-37

Figure 3.5-6. Conceptual General Arrangement Year 10.....3-39

Figure 3.5-7. Conceptual General Arrangement Year 20.....3-41

Figure 3.7-1. Simplified Process Overview.....3-45

Figure 3.8-1. Ajax Tailings Storage Facility Storage Capacity and Filling Schedule .....3-50

Figure 3.8-2. Ajax Tailings Storage Facility Conceptual Development .....3-53

Figure 3.14-1. Conceptual Water Management for Ajax Project – Construction .....3-70

Figure 3.14-2. Conceptual Water Management for Ajax Project – Operations.....3-72

Figure 3.14-3. Conceptual Water Management for Ajax Project – Decommissioning and  
Closure .....3-75

Figure 3.14-4. Conceptual Water Management for Ajax Project – Post-Closure.....3-76

Figure 3.17-1. Post-Mining Land Use .....3-87

Figure 3.17-2. Ajax Project – Soil Management Units .....3-93

Figure 3.17-3. Project Footprint Indicating Progressive, Decommissioning and Closure, and  
Post-Closure Reclamation Areas.....3-101

Figure 3.17-4. Peterson Creek – Conceptual Closure Channel .....3-113

Figure 4.4-1. Provincial Environmental Assessment Process .....4-9

Figure 4.5-1. Federal Comprehensive Study Environmental Assessment Process.....4-16

Figure 5.1-1. Overview of EA Process.....5-2

Figure 5.3-1. Overview of the Cumulative Effects Assessment (CEA) Process.....5-25

Figure 5.3-2. Other Human Activities and Projects near the Ajax Project .....	5-27
Figure 6.1-1. Greenhouse Gas Management .....	6.1-3
Figure 6.1-2. Regional and Project Climate Stations .....	6.1-7
Figure 6.1-3. Energy GHG Emissions from Stationary Combustion Sources (1990–2012) .....	6.1-19
Figure 6.1-4. GHG Emissions by Economic Sector (1990–2012) .....	6.1-20
Figure 6.1-5. BC Emissions Report Summaries – Mining 2013.....	6.1-22
Figure 6.1-6. Greenhouse Gas Management Local and Regional Study Areas.....	6.1-23
Figure 6.1-7. GHG Management Effects Assessment Process .....	6.1-27
Figure 6.2-1. Valued Component Interaction for Geology, Landforms and Soils .....	6.2-3
Figure 6.2-2. Bedrock Geology and Faults.....	6.2-9
Figure 6.2-3. Terrain Map of Surficial Geology .....	6.2-13
Figure 6.2-4. Terrain Stability Map.....	6.2-17
Figure 6.2-5. Soil Map Units of the LSA.....	6.2-21
Figure 6.2-6. Local Study Area and Regional Study Area for Geology, Landforms and Soils .....	6.2-25
Figure 6.3-1. Surface Water Quality Pathways of Effects .....	6.3-4
Figure 6.3-2. Surface Water Quality Study Area Boundaries .....	6.3-7
Figure 6.3-3. General Arrangement South Option and Water Quality Sites .....	6.3-13
Figure 6.3-4. Chloride – Predicted Seasonality in Peterson Creek Watershed – Base Case.....	6.3-82
Figure 6.3-5. Sulphate – Predicted Seasonality in Peterson Creek Watershed – Base Case.....	6.3-84
Figure 6.3-6. Copper – Predicted Seasonality in Peterson Creek Watershed – Base Case.....	6.3-86
Figure 6.3-7. Molybdenum – Predicted Seasonality in Peterson Creek Watershed – Base Case .....	6.3-89
Figure 6.3-8. Selenium – Predicted Seasonality in Peterson Creek Watershed – Base Case.....	6.3-91
Figure 6.4-1. Valued Component Interactions .....	6.4-3
Figure 6.4-2. Peterson Creek Watershed.....	6.4-5
Figure 6.4-3. Location Map for Hydrometric Stations in Project Area .....	6.4-9
Figure 6.4-4. Regional WSC Hydrometric Stations .....	6.4-13
Figure 6.4-5. Regional Unit Runoff Hydrograph.....	6.4-15
Figure 6.4-6. Average Monthly Runoff for Peterson Creek (Upper) at JACINF (1963-2011) .....	6.4-16

Figure 6.4-7. Local Study Area and Regional Study Area Boundaries for Surface Water  
Quantity ..... 6.4-21

Figure 6.4-8. Inks Lake Watershed ..... 6.4-23

Figure 6.4-9. Ajax Water Balance Schematic during Operation ..... 6.4-31

Figure 6.4-10. Average Monthly Flows at PC02 under Existing Conditions, Construction,  
Operation (Year 23), and Post-Closure (100 years after the end of operations) for the  
Average Precipitation Scenario ..... 6.4-38

Figure 6.4-11. Average Monthly Flows at PC02 under Existing Conditions for the  
Three Precipitation Scenarios ..... 6.4-39

Figure 6.4-12. 2014 Hydrographs for JACLAKE, JACSEEP, and PETER..... 6.4-42

Figure 6.5-1. Groundwater Quality Pathway of Effects ..... 6.5-4

Figure 6.5-2. Groundwater Quality Monitoring Well Locations..... 6.5-13

Figure 6.5-3. Groundwater Quality Local and Regional Study Areas..... 6.5-19

Figure 6.6-1. Groundwater Quantity Interactions with Other Valued Components ..... 6.6-2

Figure 6.6-2. Ajax General Location and Site Layout..... 6.6-5

Figure 6.6-3. Interpreted Regional Groundwater Flow System..... 6.6-8

Figure 6.6-4. Interpreted Local Scale Flow System – Surficial Deposits..... 6.6-16

Figure 6.6-5. Interpreted Local Scale Flow System – Bedrock ..... 6.6-17

Figure 6.6-6. Estimated Hydrogeologic Parameters within the RSA..... 6.6-18

Figure 6.6-7. Estimated Hydraulic Conductivity vs. Depth within Interpreted Surficial  
Hydrostratigraphic Units ..... 6.6-19

Figure 6.6-8. Estimated Hydraulic Conductivity vs. Depth within Interpreted Bedrock  
Hydrostratigraphic Units ..... 6.6-20

Figure 6.6-9. Interpreted Depth to Groundwater and Vertical Components of Hydraulic  
Gradients in the LSA..... 6.6-22

Figure 6.6-10. Simulated Net Groundwater Flux - Existing Conditions ..... 6.6-25

Figure 6.6-11. Existing Conditions Water Balance ..... 6.6-27

Figure 6.6-12. Conceptual Hydrogeologic Model ..... 6.6-28

Figure 6.6-13. Post Closure Water Balance ..... 6.6-39

Figure 6.6-14. Net Groundwater Flux – Post Closure ..... 6.6-41

Figure 6.6-15. Simulated Mine Site Water Table and Groundwater Flow Direction  
(Construction, Operation, Decommissioning and Closure)..... 6.6-43

Figure 6.6-16. Change in Water Table (From Existing Conditions to Post Closure) .....	6.6-45
Figure 6.7-1. Valued Component Interactions .....	6.7-2
Figure 6.7-2. Fish and Fish Habitat Study Area.....	6.7-5
Figure 6.7.3-1. Peterson Creek Watershed Reaches and Fish and Fish Habitat Sample Sites - 1 of 4 .....	6.7-15
Figure 6.7.3-2. Peterson Creek Watershed Reaches and Fish and Fish Habitat Sample Sites - 2 of 4 .....	6.7-17
Figure 6.7.3-3. Peterson Creek Watershed Reaches and Fish and Fish Habitat Sample Sites - 3 of 4 .....	6.7-19
Figure 6.7.3-4. Peterson Creek Watershed Reaches and Fish and Fish Habitat Sample Sites - 4 of 4 .....	6.7-21
Figure 6.7-4. Inks Lake Fish Habitat Offsetting Plan .....	6.7-65
Figure 6.7-5. Inks Lake Water Management Plan at Mine Closure.....	6.7-69
Figure 6.7-6. Cross Section of Blast Zones Approaching Jacko Lake at the Final Pit Boundary .....	6.7-73
Figure 6.8-1. Vegetation and Terrestrial Ecology .....	6.8-2
Figure 6.8-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....	6.8-7
Figure 6.8-3. Regional Study Area.....	6.8-9
Figure 6.8-4. Rare Plant Transect Survey Locations.....	6.8-15
Figure 6.8-5. Rare Plant Occurrences .....	6.8-19
Figure 6.8-6. Potential Loss of Rare Plant Occurrences .....	6.8-33
Figure 6.8-7. Impacts to Traditional Plants.....	6.8-37
Figure 6.8-8. Potential Invasive Plant Habitat Alteration and Rare Plant Locations.....	6.8-39
Figure 6.8-9. Cumulative Effects Regional Study Area .....	6.8-51
Figure 6.8-10. Rare Plant Locations in the Regional Study Area.....	6.8-55
Figure 6.9-1. VC Interactions for Vegetation and Terrestrial Ecology (Rare and Sensitive Ecological Communities) .....	6.9-3
Figure 6.9-2. Local Study Area.....	6.9-7
Figure 6.9-3. Regional Study Area.....	6.9-9
Figure 6.9-4. Forested Ecological Communities at Risk in the Local Study Area.....	6.9-17
Figure 6.9-5. Sensitive Ecological Communities in the Local Study Area .....	6.9-19

Figure 6.9-6. Potential Habitat Loss for Red- and Blue-listed non-Grassland Ecological Communities within the LSA .....6.9-31

Figure 6.9-7. Habitat Loss of Sensitive Ecological Communities .....6.9-33

Figure 6.9-8. Potential Invasive Plant Habitat Alteration and Ecological Communities at Risk.....6.9-39

Figure 6.9-9. Cumulative Effects Regional Study Area .....6.9-51

Figure 6.10-1. Vegetation and Terrestrial Ecology ..... 6.10-2

Figure 6.10-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....6.10-5

Figure 6.10-3. Regional Study Area and Mapped Grasslands.....6.10-9

Figure 6.10-4. TEM Mapped Grasslands in the LSA.....6.10-15

Figure 6.10-5. Grasslands Mapping and Priority Areas .....6.10-19

Figure 6.10-6. Loss of TEM Mapped Grasslands in the LSA .....6.10-27

Figure 6.10-7. Loss of Grasslands Priority Areas in the LSA.....6.10-29

Figure 6.10-8. Alteration of TEM Mapped Grasslands in the LSA.....6.10-35

Figure 6.10-9. Alteration of Grasslands Priority Areas in the LSA .....6.10-37

Figure 6.10-10. Grassland Cumulative Effects .....6.10-47

Figure 6.11-1. VC Interactions for Wildlife (Terrestrial Invertebrates).....6.11-2

Figure 6.11-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....6.11-7

Figure 6.11-3. Regional Study Area .....6.11-9

Figure 6.11-4. Historical Observations of Listed Terrestrial Invertebrates .....6.11-13

Figure 6.11-5. Locations of Invertebrate Surveys .....6.11-19

Figure 6.11-6. Species Accumulation Curves.....6.11-21

Figure 6.12-1. VC Interactions for Wildlife (Amphibians) .....6.12-2

Figure 6.12-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....6.12-7

Figure 6.12-3. Regional Study Area .....6.12-9

Figure 6.12-4. Road Survey, Auditory Survey Locations, and Time-constrained Search Survey Locations .....6.12-17

Figure 6.12-5. Amphibian Breeding Habitat and Observations in the LSA.....6.12-19

Figure 6.12-6. Amphibian Breeding Habitat and Observations in the LSA.....6.12-33

Figure 6.12-7. Amphibian Breeding Habitat and Observations in the LSA.....6.12-39

Figure 6.12-8. Potential Mortality for Northern Pacific Treefrog .....	6.12-41
Figure 6.12-9. Direct Mortality for Great Basin Spadefoot .....	6.12-43
Figure 6.12-10. Mortality for Western Toad .....	6.12-45
Figure 6.12-11. Cumulative Effects Regional Study Area .....	6.12-71
Figure 6.13-1. VC Interactions for Wildlife (Reptiles) .....	6.13-2
Figure 6.13-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....	6.13-7
Figure 6.13-3. Regional Study Area and Wildlife Habitat Areas.....	6.13-9
Figure 6.13-4. Snake Den Sites in relation to the Regional and Local Study Areas .....	6.13-13
Figure 6.13-5. Snake Hibernacula Surveys and Observations .....	6.13-19
Figure 6.13-6. Great Basin Gopher Snake Living Habitat Suitability .....	6.13-23
Figure 6.13-7. North American Racer Hibernating Habitat Suitability .....	6.13-25
Figure 6.13-8. Western Rattlesnake Hibernating Habitat Suitability .....	6.13-27
Figure 6.13-9. Potential Impacts to Snake Dens .....	6.13-41
Figure 6.14-1. VC Interactions for Wildlife (Migratory Birds) .....	6.14-2
Figure 6.14-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....	6.14-7
Figure 6.14-3. Regional Study Area .....	6.14-11
Figure 6.14-4. Breeding and Migratory Bird Point Counts .....	6.14-21
Figure 6.14-5. Locations of Waterfowl/Shorebird Surveys .....	6.14-23
Figure 6.14-6. Common Nighthawk Call-playback Locations and Detections .....	6.14-25
Figure 6.14-7. American Bittern Call-playback Locations .....	6.14-27
Figure 6.14-8. Woodpecker Survey Locations.....	6.14-29
Figure 6.14-9. Lewis’s Woodpecker Breeding Habitat Suitability and Observations in the LSA ....	6.14-33
Figure 6.14-10. Williamson’s Sapsucker Habitat Suitability and Observations in the LSA .....	6.14-35
Figure 6.14-11. Migratory Bird Habitat Associations and Observations.....	6.14-37
Figure 6.14-12. Habitat Loss for Migratory Birds .....	6.14-51
Figure 6.14-13. Migratory Bird Habitat Associations and Noise Disturbance .....	6.14-53
Figure 6.14-14. Cumulative Effects Regional Study Area .....	6.14-79
Figure 6.15-1. VC Interactions for Wildlife (Raptors) .....	6.15-2
Figure 6.15-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....	6.15-9

Figure 6.15-3. Regional Study Area and Wildlife Habitat Areas.....6.15-11

Figure 6.15-4. Flammulated Owl Habitat Suitability and Call Playback Survey Stations.....6.15-21

Figure 6.15-5. Raptor Roadside Survey Transect Locations.....6.15-23

Figure 6.15-6. Raptor Observation and Nest Locations .....6.15-27

Figure 6.15-7. Raptor Regional Context .....6.15-29

Figure 6.15-8. Raptor Habitat Loss and Nest Locations .....6.15-43

Figure 6.15-9. Raptor Noise Disturbance.....6.15-47

Figure 6.15-10. Raptor Regional Effects .....6.15-61

Figure 6.16-1. VC Interactions for Wildlife (Non-migratory Gamebirds).....6.16-2

Figure 6.16-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....6.16-7

Figure 6.16-3. Regional Study Area and Wildlife Management Units .....6.16-9

Figure 6.16-4. Sharp-tailed Grouse Growing Season Habitat Suitability and Observations.....6.16-17

Figure 6.16-5. Sharp-tailed Grouse Winter Season Habitat Suitability .....6.16-19

Figure 6.16-6. Ruffed Grouse Observations, Aspen Stands and Winter Habitat .....6.16-21

Figure 6.16-7. Sharp-tailed Grouse Habitat Loss .....6.16-35

Figure 6.16-8. Sharp-tailed Grouse Habitat Alteration.....6.16-39

Figure 6.16-9. Noise Disturbances, Sharp-tailed Grouse Leks and Living Requirements  
 Growing Season Suitable Habitat .....6.16-41

Figure 6.16-10. Cumulative Effects Regional Study Area.....6.16-57

Figure 6.16-11. Sharp-tailed Grouse Habitat in the Regional Study Area .....6.16-63

Figure 6.16-12. Ruffed Grouse Habitat in the Regional Study Area .....6.16-65

Figure 6.17-1. VC Interactions for Wildlife (Mammals) .....6.17-2

Figure 6.17-2. Local Study Area, Infrastructure Disturbance Area and Project Infrastructure.....6.17-9

Figure 6.17-3. Regional Study Area .....6.17-13

Figure 6.17-4. Encounter Transect Survey Location.....6.17-23

Figure 6.17-5. Bat Detector Locations .....6.17-25

Figure 6.17-6. Badger Habitat Suitability, Observations and Burrows .....6.17-29

Figure 6.17-7. Pocket Mouse Habitat Suitability and Trap Locations .....6.17-31

Figure 6.17-8. Deer Winter Ranges .....6.17-33

Figure 6.17-9. Badger Habitat Loss (Dens and Suitable Habitat).....	6.17-47
Figure 6.17-10. Habitat Loss of Deer Winter Ranges .....	6.17-51
Figure 6.17-11. Bat Habitat Loss.....	6.17-53
Figure 6.17-12. Badger Habitat Alteration.....	6.17-55
Figure 6.17-13. Mammal Noise Disturbance (Badger and Deer).....	6.17-59
Figure 6.17-14. Cumulative Effects Regional Study Area .....	6.17-85
Figure 6.17-15. Badger Cumulative Effects .....	6.17-93
Figure 6.17-16. Ungulate Cumulative Effects.....	6.17-95
Figure 7.1-1. Inputs to Economic Valued Components.....	7.1-3
Figure 7.1-2. Local Study Area .....	7.1-5
Figure 7.1-3. Regional Study Area .....	7.1-13
Figure 7.2-1. Inputs into Economic Valued Components.....	7.2-2
Figure 7.2-2. Local Study Area .....	7.2-17
Figure 7.2-3. Regional Study Area .....	7.2-19
Figure 7.3-1. Inputs to Economic Valued Components.....	7.3-3
Figure 7.3-2. Local Study Area .....	7.3-7
Figure 7.3-3. Regional Study Area .....	7.3-9
Figure 7.4-1. Inputs to Economic Valued Components.....	7.4-2
Figure 7.4-2. Local Study Area .....	7.4-13
Figure 7.4-3. Regional Study Area .....	7.4-15
Figure 7.5-1. Inputs to Economic Valued Components.....	7.5-2
Figure 7.5-2. City of Kamloops Neighbourhoods.....	7.5-7
Figure 7.5-3. Homes Sold in Aberdeen, Knutsford-Lac Le Jeune, Pineview Valley, and Sahali, Q1 and Q2 2015.....	7.5-9
Figure 7.5-4. City of Kamloops Industrial and Commercial Lands .....	7.5-11
Figure 7.5-5. Local Study Area .....	7.5-15
Figure 7.5-6. Regional Study Area .....	7.5-17
Figure 7.6-1. Inputs to Economic Valued Components.....	7.6-3
Figure 7.6-2. Local Study Area .....	7.6-15

Figure 7.6-3. Regional Study Area .....7.6-17

Figure 8.1-1. Inputs to Social Valued Components .....8.1-2

Figure 8.1-2. Road Network near Project.....8.1-17

Figure 8.1-3. Local Study Area .....8.1-21

Figure 8.1-4. Regional Study Area .....8.1-23

Figure 8.2-1. Valued Component Interactions - Dark Sky .....8.2-2

Figure 8.2-2. Ajax Project Proposed Mine Facilities .....8.2-3

Figure 8.2-3. Types of Obtrusive Light .....8.2-7

Figure 8.2-4. Sky Darkness Interpolation Contours, Elevations and Baseline Sampling  
Locations.....8.2-15

Figure 8.2-5. Local and Regional Study Areas for Dark Sky Assessment .....8.2-19

Figure 8.2-6. Visibility of Ajax Project at Night for nearby Residents .....8.2-21

Figure 8.2-7. Radiometric Changes around the Project during Construction and Operations.....8.2-27

Figure 8.3-1. Valued Component Interactions - Visual Impact/Aesthetic Features .....8.3-3

Figure 8.3-2. Viewpoint Locations .....8.3-7

Figure 8.3-3. Visual Quality Objectives that Interact with the Project.....8.3-13

Figure 8.3-4. Total Yearly Solar Insolation .....8.3-15

Figure 8.3-5. Visual Impact/Aesthetic Features Local and Regional Study Areas.....8.3-19

Figure 8.3-6. Landscape Shading during Operations Phase on December 22 at Sunrise and  
Sunset .....8.3-51

Figure 8.3-7. Percentage Decrease in Total Yearly Insolation.....8.3-55

Figure 8.4-1. Inputs to Social Valued Components .....8.4-3

Figure 8.4-2. Plan Boundaries Associated with the City of Kamloops, the Thompson-Nicola  
Regional District, and the Province of BC.....8.4-11

Figure 8.4-3. Ranching Activity.....8.4-13

Figure 8.4-4. Land and Resource Use Local Study Area .....8.4-17

Figure 8.4-5. Land and Resource Use Regional Study Area .....8.4-19

Figure 8.5-1. Land Tenure.....8.5-7

Figure 8.5-2. Stk'emlupsemc te Secwépemc Nation Traditional Territory .....8.5-13

Figure 8.5-3. SSN Identified Traditional Land Use Areas .....8.5-17

Figure 8.5-4. Nlaka’pamux Nation Traditional Territory.....	8.5-37
Figure 8.5-5. Secwépemc Nation Traditional Territory .....	8.5-45
Figure 8.5-6. Local and Regional Study Area for Current Use of Lands and Resources for Traditional Purposes.....	8.5-53
Figure 8.5-7. Inputs to Current Use of Lands and Resources for Traditional Purposes Valued Component.....	8.5-56
Figure 8.5-8. Health and Safety Buffer Around Open Pit.....	8.5-81
Figure 8.5-9. Anticipated Changes to Visual Landscape from Jacko Lake – Looking towards the Project.....	8.5-107
Figure 8.5-10. Changes to Access in the LSA .....	8.5-113
Figure 8.5-11. Cumulative Effects Assessment – Other Activities within Licenses and Tenures .....	8.5-145
Figure 8.5-12. Cumulative Effects Assessment – Quantifiable Effects within the CULRTP RSA.....	8.5-147
Figure 8.6-1. Inputs to Social Valued Components.....	8.6-3
Figure 8.6-2. Parks, Protected Areas, and Ecological Reserves near the Project.....	8.6-9
Figure 8.6-3. Local Study Area.....	8.6-17
Figure 8.6-4. Regional Study Area.....	8.6-19
Figure 8.7-1. Location of Ajax Project.....	8.7-3
Figure 8.7-2. Summary of Key Design Features Related to Jacko Lake.....	8.7-13
Figure 9.1-1. Archaeological Sites Effects Assessment Local Study Area.....	9.1-9
Figure 9.1-2. Archaeological Sites Effects Assessment Regional and Local Study Areas.....	9.1-11
Figure 9.2-1. Heritage Sites Effects Assessment Regional and Local Study Areas.....	9.2-9
Figure 9.2-2. Geologic Detail of Local Study Area .....	9.2-11
Figure 9.2-3. Petroforms within the Ajax Project Area .....	9.2-13
Figure 9.2-4. Homesteads and Early Historic Trails within the Ajax Project Area.....	9.2-19
Figure 10.1-1. Air Quality Interactions with Other Valued Components.....	10.1-2
Figure 10.1-2. Air Quality Local and Regional Study Areas.....	10.1-21
Figure 10.1-3. Base Case Maximum Predicted 30-Day Dustfall (mg/dm <sup>2</sup> /day) with Global/Regional Background Added.....	10.1-35

Figure 10.1-4. Base Case Maximum Predicted Annual Average Ground-Level PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>) with Global/Regional Background Added ..... 10.1-37

Figure 10.1-5. Project Case Maximum Predicted 30-Day Dustfall (mg/dm<sup>2</sup>/day) without Global/Regional Background Added ..... 10.1-41

Figure 10.1-6. Project Case Maximum Predicted Annual Average Ground-Level PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>) without Global/Regional Background Added ..... 10.1-43

Figure 10.1-7. Application Case Maximum Predicted 30-Day Dustfall (mg/dm<sup>2</sup>/day) with Global/Regional Background Added ..... 10.1-51

Figure 10.1-8. Application Case Maximum Predicted Annual Average Ground-Level PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>) with Global/Regional Background Added ..... 10.1-53

Figure 10.1-9. Application Case Maximum Predicted Annual Average Ground-Level PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>) within the City of Kamloops ..... 10.1-55

Figure 10.2-1. Domestic Water Quality Local and Regional Study Area ..... 10.2-5

Figure 10.2-2. Project Alone Maximum Predicted Monthly Average Dustfall Rate (mg/dm<sup>2</sup>/day) ..... 10.2-15

Figure 10.3-1. Country Food Local and Regional Study Area ..... 10.3-3

Figure 10.4-1. Human Health Study Areas and Receptor Locations ..... 10.4-5

Figure 10.4-2. Human Health Baseline Terrestrial Sampling Locations ..... 10.4-9

Figure 10.4-3. Location of Baseline Surface Water Sampling, Fish Sampling and Water Modelling Nodes ..... 10.4-11

Figure 10.4-4. Location of Baseline Groundwater Sampling and Water Modelling Nodes ..... 10.4-13

Figure 10.4-5. Human Health Spatial Boundaries ..... 10.4-17

Figure 10.4-6. Non-carcinogenic Risk Estimates for a Toddler in Aberdeen ..... 10.4-46

Figure 10.4-7. Non-carcinogenic Risk Estimates for a Toddler in Knutsford ..... 10.4-47

Figure 10.4-8. Non-carcinogenic Risk Estimates for an Aboriginal Toddler in Kamloops Indian Reserve #1 ..... 10.4-48

Figure 10.4-9. Non-carcinogenic Risk Estimates for an Adult in Aberdeen ..... 10.4-49

Figure 10.4-10. Non-carcinogenic Risk Estimates for an Adult in Knutsford ..... 10.4-50

Figure 10.4-11. Non-carcinogenic Risk Estimates for an Aboriginal Adult in Kamloops Indian Reserve #1 ..... 10.4-51

Figure 10.5-1. Noise Local Study Area and Regional Study Area ..... 10.5-5

Figure 10.5-2. Vibration Local Study Area and Regional Study Area ..... 10.5-11

Figure 10.5-3. Noise Contours for Construction Activities (Year -1) during Daytime or Nighttime Period.....	10.5-25
Figure 10.5-4. Noise Contours for Piling Activities during Daytime Period.....	10.5-29
Figure 10.5-5. Noise Contours for Operation (Year 2) during Daytime or Nighttime Period .....	10.5-31
Figure 10.5-6. Noise Contours for Operation (Year 4 and 8) during Daytime or Nighttime Period .....	10.5-33
Figure 10.5-7. Ground Vibration Level for Zone 1 Blasting.....	10.5-47
Figure 10.5-8. Air Blast Overpressure Levels for Zone 1 Blasting.....	10.5-49
Figure 10.5-9. Ground Vibration Level for Zone 3 Blasting.....	10.5-51
Figure 10.5-10. Air Blast Overpressure Levels for Zone 3 Blasting.....	10.5-53
Figure 10.6-1. Inputs to Health Valued Components .....	10.6-3
Figure 10.6-2. Health Authority Boundaries .....	10.6-7
Figure 10.6-3. Kamloops City Parks and Recreational Facilities .....	10.6-9
Figure 10.6-4. Kamloops City Parks and Recreational Facilities (detail).....	10.6-11
Figure 10.6-5. Local Study Area .....	10.6-19
Figure 10.6-6. Regional Study Area .....	10.6-21
Figure 10.7-1. Inputs to Health Valued Components .....	10.7-2
Figure 10.7-2. Health Authority Boundaries .....	10.7-5
Figure 10.7-3. Road Network near the Project .....	10.7-17
Figure 10.7-4. Local Study Area .....	10.7-29
Figure 10.7-5. Regional Study Area .....	10.7-31
Figure 11.1-1. Environmental Management System “Plan, Do, Check, Act” Model.....	11.1-2
Figure 11.1-2. Relationship between Environmental Management Frameworks Conceptual Model .....	11.1-11
Figure 11.2-1. Ajax Project – Erosion and Sedimentation Control Features .....	11.2-3
Figure 11.5-1. PAG NPAG Block Model 840 Bench .....	11.5-9
Figure 11.5-2. PAG NPAG Block Model 750 Bench .....	11.5-10
Figure 11.5-3. PAG NPAG Block Model 660 Bench .....	11.5-11
Figure 11.5-4. PAG NPAG Block Model 570 Bench .....	11.5-12

Figure 11.5-5. Solid-phase As Content versus Laboratory As Loading Rates and Field Bin Leachate Concentrations in IMH Kinetic Test Samples ..... 11.5-13

Figure 11.5-6. Comparison of Solid-phase As Contents in Assay versus Static Test Analyses for IMH Mine Rock Samples..... 11.5-14

Figure 11.6-1. Location of Background Air Quality Monitoring Stations ..... 11.6-9

Figure 11.7-1. Ajax General Location and Site Layout..... 11.7-3

Figure 11.7-2. Active Hydrometric Stations ..... 11.7-9

Figure 11.7-3. Regional WSC Stations ..... 11.7-13

Figure 11.7-4. Regional Unit Runoff Hydrograph..... 11.7-16

Figure 11.7-5. Average Monthly Runoff for Peterson Creek (Upper) at JACINF (1963-2011) ..... 11.7-17

Figure 11.7-6. 2014 Hydrographs for JACLAKE, JACSEEP and PETER..... 11.7-21

Figure 11.7-7. Jacko Lake and Peterson Creek General Arrangement..... 11.7-25

Figure 11.7-8. Peterson Creek Downstream Pond General Arrangement ..... 11.7-31

Figure 11.7-9. TSF General Arrangement ..... 11.7-35

Figure 11.7-10. East MRSF General Arrangement..... 11.7-41

Figure 11.7-11. South MRSF General Arrangement..... 11.7-43

Figure 11.7-12. Water Management Strategy Flow Diagram – Construction..... 11.7-51

Figure 11.7-13. Water Management Strategy Flow Diagram – Operation..... 11.7-57

Figure 11.7-14. Water Management Strategy Flow Diagram – Decommissioning and Closure..... 11.7-63

Figure 11.7-15. Water Management Strategy Flow Diagram – Post Closure ..... 11.7-69

Figure 11.15-1. Schematic of Probability and Consequence in relation to Management Strategies..... 11.15-2

Figure 11.18-1. Ajax Footprint and Heritage Local Study Area ..... 11.18-3

Figure 11.19-1. Sky Glow and Light Trespass Monitoring Locations..... 11.19-5

Figure 11.20-1. Primary Access Plan ..... 11.20-2

Figure 11.20-2. Temporary Access Plan..... 11.20-3

Figure 11.21-1. Project Access Roads, Security Points, and Perimeter Fencing ..... 11.21-3

Figure 11.21-2. Safety Buffers for Blasting (Jacko Lake) ..... 11.21-5

Figure 11.27-1. Priority Ecosystems for Monitoring ..... 11.27-9

Figure 11.27-2. Wetlands and Amphibian Habitat.....	11.27-13
Figure 11.27-3. Grasslands, Sharp-tailed Grouse Leks and Badger Burrows.....	11.27-15
Figure 12.1-1. Secwépemc Traditional Territory .....	12-3
Figure 12.1-2. Nlaka’pamux Traditional Territory.....	12-5
Figure 12.2-1. Stk’emlupsemc te Secwépemc Nation Traditional Territory.....	12-15
Figure 12.2-2. Identified Traditional Land Use.....	12-17
Figure 12.2-3. Indian Reserves .....	12-37
Figure 13.6-1. Geographic Representation of Pípsell .....	13-75
Figure 17.4-1. Ajax North General Arrangement .....	17.4-17
Figure 17.4-2. Ajax South General Arrangement.....	17.4-19
Figure 17.4-3. Initial Tailings Management Facility Locations Identified for the Ajax Project.....	17.4-28
Figure 17.4-4. Closing TSF with a Pond and Wetland .....	17.4-64
Figure 17.4-5. Dry Closure with Runoff to Humphrey Creek .....	17.4-66
Figure 17.4-6. Peterson Creek Diversion Alternatives .....	17.4-77
Figure 17.4-7. Existing Roads to the West of the Project .....	17.4-85
Figure 17.4-8. Option 1: New Interchange at Mine Access Road.....	17.4-86
Figure 17.4-9. Option 2: Upgrade Inks Lake Interchange and Connections to Mine Access Road.....	17.4-87
Figure 17.4-10. Natural Gas and Transmission Line Corridor .....	17.4-99
Figure 17.6-1. Tailings Storage Facility Starter (North) Embankment Sections End of Year -1 - Case #1.....	17.6-69
Figure 17.6-2. Case #5 Inundation Extents .....	17.6-73

#### *LIST OF TABLES*

Table 1. Working Group Members.....	Preface 2
Table 1a. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Environmental .....	Executive Summary 82
Table 1b. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Economic .....	Executive Summary 90
Table 1c. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Social .....	Executive Summary 92

Table 1d. Summary of Residual Project and Cumulative Effects and Mitigation Measures:  
 Heritage .....Executive Summary 96

Table 1e. Summary of Residual Project and Cumulative Effects and Mitigation Measures:  
 Health.....Executive Summary 97

Table 2. Table of Commitments .....Executive Summary 102

Table 1. Consultant Contributions.....Acknowledgements 2

Table 2.7-1. Total Economic Impacts for Ajax Project Construction Phase (Direct, Indirect,  
 and Induced Impacts) .....2-29

Table 2.7-2. Total Economic Impacts for Ajax Project Operations Phase (Direct, Indirect, and  
 Induced Impacts; 2015 Cdn\$) .....2-30

Table 2.7-3. Ajax Project Sample Project Occupations .....2-32

Table 2.7-4. Construction Phase Estimated Direct Workforce Requirements for the Ajax  
 Project.....2-33

Table 2.7-5. Operations Phase Estimated Direct Workforce Requirements (Annual Average)  
 for the Ajax Project .....2-34

Table 2.7-6. Estimates of Local and Non-local Hires for Project Construction.....2-36

Table 2.7-7. Estimates of Local and Non-local Hires for Project Operations (Annual  
 Average) .....2-37

Table 2.8-1. Permits Applicable to the Ajax Project.....2-46

Table 3.1-1. Life of Project.....3-2

Table 3.5-1. Summary of Major Geotechnical Domains .....3-24

Table 3.5-2. Summary of Mean Laboratory Test Results and Rock Mass Classification by  
 Geotechnical Domain.....3-25

Table 3.5-3. Summary of Ajax Slope Design Parameters.....3-25

Table 3.6-1. Summary of Estimated Mine Production from Ajax Open Pit.....3-43

Table 3.7-1. Summary of Annual Reagents for Ajax Project Process Plant.....3-47

Table 3.9-1. Maximum Mine Rock Storage Facility Capacity .....3-55

Table 3.11-1. Estimated Equipment for Construction and Decommissioning and Closure  
 Phases.....3-58

Table 3.11-2. Estimated Equipment for Operation Phase.....3-59

Table 3.12-1. Estimated Annual ANFO Explosive Use.....3-61

Table 3.16-1. Daily Average Traffic Volume to Project during Construction and Operation.....3-78

Table 3.17-1. Pre-Mining and Proposed Post-Mining Land Use .....	3-85
Table 3.17-2 Summary of Closure and Reclamation Activities .....	3-89
Table 3.17-3. Soil Management Units and Reclamation Suitability .....	3-92
Table 3.17-4. Estimate of Topsoil and Overburden Volumes for Reclamation .....	3-96
Table 3.17-5. Approximate Areas of Mine Components .....	3-103
Table 4.4-1. Ajax Project Community Advisory Group Members .....	4-11
Table 4.4-2. Provincial Environmental Assessment Process Milestones for the Ajax Project .....	4-14
Table 4.5-1. Federal Environmental Assessment Process Milestones for the Ajax Project .....	4-20
Table 4.5-2. Participant Funding Program Allocations – Aboriginal Funding Envelope .....	4-22
Table 4.5-3. Participant Funding Program Allocation – Regular Funding Envelope.....	4-22
Table 4.6-1. Aboriginal Groups Consultation Requirements.....	4-23
Table 4.6-2. Ajax Project Working Group Meetings.....	4-25
Table 4.6-3. Summary of Consultation Activities with SSN .....	4-28
Table 4.6-4. Summary of Consultation Activities with AIB and LNIB.....	4-33
Table 4.6-5. Summary of Consultation Activities with WP/CIB.....	4-34
Table 4.6-6. Summary of Consultation Activities with MNBC.....	4-34
Table 4.6-7. Overview of Issues Raised by Aboriginal Groups .....	4-35
Table 4.7-1. Stakeholders Identified .....	4-52
Table 4.7-2. Public Consultation / Engagement Sessions .....	4-55
Table 4.7-3. Feedback from April 18, 2012 Workshop .....	4-81
Table 4.7-4. Summary of Planned EIS-Review Phase Consultation Activities (based on Q3 submission) .....	4-85
Table 5.2-1. Summary of Selected Valued Components for the Ajax Project.....	5-6
Table 5.2-2. Valued Components Included in the Application/EIS .....	5-7
Table 5.2-3. Project Components and Activities .....	5-12
Table 5.2-4. Example of Ranking Potential Effects on Valued Components .....	5-16
Table 5.2-5. Example of Summary of Residual Effects/Predicted Changes after Mitigation .....	5-18
Table 5.2-6. Example of Characterization of Residual Effects, Significance, Likelihood, and Confidence.....	5-22
Table 5.3-1. Past, Present, and Reasonably Foreseeable Actions Considered for the CEA .....	5-29

Table 5.3-2. Example of Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on a Valued Component .....5-43

Table 5.3-3. Example of Summary of Residual Cumulative Effects.....5-44

Table 5.3-4. Example of Characterization of Residual Cumulative Effects, Significance, Likelihood, and Confidence.....5-45

Table 5.4-1. Example of Summary of Residual Effects, Mitigation, and Significance .....5-46

Table 6.1-1. Public Comments Related to Greenhouse Gas Management ..... 6.1-2

Table 6.1-2. Project Climate Stations .....6.1-9

Table 6.1-3. Regional Climate Stations.....6.1-10

Table 6.1-4. Proposed and Currently Operating Metal Mines in BC.....6.1-14

Table 6.1-5. Identifying Potential Project Interactions and Effects on Greenhouse Gas Management ..... 6.1-28

Table 6.1-6. Scope 1 Direct GHG Emissions during Construction (Year -1).....6.1-33

Table 6.1-7. Scope 1 Direct GHG Emissions during Operation (Year 4/8).....6.1-34

Table 6.1-8. Facility Maximum Surface Area .....6.1-39

Table 6.1-9. Land Use Change by TEM Structural Stage.....6.1-40

Table 6.1-10. Top Level Land Use Category Areas .....6.1-41

Table 6.1-11. Land Use Change Emissions .....6.1-42

Table 6.1-12. Annual GHG Emissions Summary.....6.1-43

Table 6.1-13. Summary of Residual Effects on Greenhouse Gas Management.....6.1-47

Table 6.1-14. Definitions of Characterization Criteria for Residual Effects on Greenhouse Gas Management.....6.1-51

Table 6.1-15. Characterization of Residual Effects, Significance, Likelihood and Confidence on Greenhouse Gas Management .....6.1-51

Table 6.1-16. Summary of Residual Effects, Mitigation, and Significance on Greenhouse Gas Management .....6.1-53

Table 6.1-17. Summary of Residual Effects, Mitigation, and Significance for Greenhouse Gas Management.....6.1-54

Table 6.2-1. Geology, Landforms and Soils Indicators Included in the Application/EIS ..... 6.2-1

Table 6.2-2. Summary of Slope Angles within the Local Study Area.....6.2-7

Table 6.2-3. Summary of Surficial Geology Distribution within the LSA.....6.2-11

Table 6.2-4. Summary of Slope Stability Potential within the LSA.....	6.2-15
Table 6.2-5. Summary of Topsoil Distribution within the LSA .....	6.2-23
Table 6.2-6. Seismic Hazard Values.....	6.2-23
Table 6.2-7. Identifying Potential Project Interactions and Effects on Geology, Landforms and Soils.....	6.2-29
Table 6.2-8. Summary of Slope Angles Change within the Potential Disturbance Area .....	6.2-33
Table 6.2-9. Summary of Disturbances to Surficial Geology within the Potential Disturbance Area .....	6.2-34
Table 6.2-10. Summary of Disturbance to Topsoil within the Potential Disturbance Area.....	6.2-36
Table 6.2-11. Expected Quantity of Soils Stockpiled .....	6.2-37
Table 6.2-12. Summary of Potential Effects and Mitigation on Geology, Landforms and Soils VC.....	6.2-40
Table 6.2-13. Summary of Residual Effects/Predicted Changes after Mitigation on Geology, Landforms and Soils VC.....	6.2-44
Table 6.2-14. Definitions of Characterization Criteria for Residual Effects on Geology, Landforms and Soils VC.....	6.2-47
Table 6.2-15. Characterization of Residual Effects, Significance, Likelihood, and Confidence on Geology, Landforms and Soils VC .....	6.2-49
Table 6.2-16. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Geology, Landforms and Soils VC .....	6.2-49
Table 6.2-17. Screening of Other Actions for Inclusion in the CEA for Geology, Landforms and Soils VC.....	6.2-51
Table 6.2-18. Characterization of Residual Cumulative Effects, Significance, Likelihood, and Confidence on Geology, Landforms and Soils VC .....	6.2-53
Table 6.2-19. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Geology, Landforms and Soils .....	6.2-53
Table 6.3-1. Aboriginal and Public Comments Related to Surface Water Quality .....	6.3-2
Table 6.3-2. Surface Water Sampling Locations in the LSA .....	6.3-10
Table 6.3-3. Surface Water Quality Summary Statistics.....	6.3-17
Table 6.3-4. Summary of Aquatic Life Guideline Exceedances .....	6.3-43
Table 6.3-5. Summary of Drinking Water Quality Guideline Exceedances.....	6.3-49
Table 6.3-6. Summary of Agricultural Guideline Exceedances .....	6.3-51

Table 6.3-7. Identifying Potential Project Interactions and Effects on Surface Water Quality .....6.3-57

Table 6.3-8. Jacko Lake – Maximum Predicted Base Case Concentrations .....6.3-73

Table 6.3-9. PDCP – Maximum Predicted Base Case Concentrations .....6.3-74

Table 6.3-10. PC02.3 – Maximum Predicted Base Case Concentrations .....6.3-75

Table 6.3-11. PC02 – Maximum Predicted Base Case Concentrations .....6.3-76

Table 6.3-12. Humphrey Creek – Maximum Predicted Base Case Concentrations .....6.3-77

Table 6.3-13. Modelled Parameters and Assigned Categories .....6.3-80

Table 6.3-14. Summary of Category 1 Parameters with Predicted Residual Effects .....6.3-108

Table 6.3-15. Summary of Residual Effects on Surface Water Quality .....6.3-109

Table 6.3-16. Residual Effects and Sensitivity Summary at Humphrey Creek .....6.3-111

Table 6.3-17. Residual Effects and Sensitivity Summary at PC02.3 .....6.3-112

Table 6.3-18. Residual Effects and Sensitivity Summary at PC02 .....6.3-113

Table 6.3-19. Residual Effects and Sensitivity Summary at PCDP .....6.3-115

Table 6.3-20. Definitions of Characterization Criteria for Residual Effects on Surface Water Quality .....6.3-117

Table 6.3-21. Characterization of Residual Effects, Significance, Likelihood and Confidence on Surface Water Quality .....6.3-120

Table 6.3-22. Summary of Residual Effects, Mitigation, and Significance on Surface Water Quality .....6.3-121

Table 6.3-23. Screening of Other Actions for Inclusion in the CEA for Surface Water Quality ...6.3-131

Table 6.3-24. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Surface Water Quality .....6.3-135

Table 6.4-1. Hydrometric Stations in Project Area .....6.4-8

Table 6.4-2. Regional Hydrometric Stations .....6.4-17

Table 6.4-3. Wet and Dry Average Monthly Flows at JACINF Hydrometric Station .....6.4-18

Table 6.4-4. Peak Instantaneous Flow Estimates at JACINF Hydrometric Station .....6.4-18

Table 6.4-5. Project Components and Potential Effects on Surface Water Quantity .....6.4-27

Table 6.4-6. Sensitivity Scenarios to Assess Effects on Surface Water Quantity .....6.4-32

Table 6.4-7. Average Monthly Streamflow in Peterson Creek under Average Precipitation Conditions at Various Project Phases .....6.4-35

Table 6.4-8. Average Monthly Streamflow in Peterson Creek (Lower) at PC02 under 100-year Wet and Dry Precipitation Conditions during Operation.....	6.4-40
Table 6.4-9. Residual Effects, Thompson River Average Monthly Flow.....	6.4-41
Table 6.4-10. Peterson Creek (Lower) Low Flow Results Existing Conditions .....	6.4-43
Table 6.4-11. Residual Effects, Thompson River 10-year Low Monthly Flow.....	6.4-43
Table 6.4-12. Summary of Residual Effects on Surface Water Quantity .....	6.4-45
Table 6.4-13. Definitions of Characterization Criteria for Residual Effects on Surface Water Quantity.....	6.4-47
Table 6.4-14. Characterization of Residual Effects, Significance, Likelihood and Confidence on Surface Water Quantity at Jacko Lake .....	6.4-49
Table 6.4-15. Characterization of Residual Effects, Significance, Likelihood and Confidence on Surface Water Quantity at PC02 on Peterson Creek (Lower).....	6.4-50
Table 6.4-16. Characterization of Residual Effects, Significance, Likelihood and Confidence on Surface Water Quantity at Kamloops Lake.....	6.4-51
Table 6.4-17. Summary of Residual Effects, Mitigation, and Significance on Surface Water Quantity.....	6.4-55
Table 6.4-18. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Surface Water Quantity .....	6.4-57
Table 6.4-19. Cumulative Effects, Thompson River Average Monthly Flow .....	6.4-59
Table 6.4-20. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Surface Water Quantity at Kamloops Lake .....	6.4-59
Table 6.4-21. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Surface Water Quantity at Kamloops Lake.....	6.4-60
Table 6.4-22. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Surface Water Quantity.....	6.4-61
Table 6.5-1. Groundwater Sampling Locations.....	6-8
Table 6.5-2. Identifying Potential Project Interactions and Effects on Groundwater Quality.....	6.5-22
Table 6.5-3. Summary of Residual Effects on Groundwater Quality.....	6.5-37
Table 6.5-4. Definitions of Characterization Criteria for Residual Effects on Groundwater Quality.....	6-41
Table 6.5-5. Characterization of Residual Effects, Significance, Likelihood and Confidence on Groundwater Quality .....	6-43
Table 6.5-6. Summary of Residual Effects, Mitigation, and Significance on Groundwater Quality.....	6.5-44

Table 6.5-7. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Groundwater Quality .....6.5-45

Table 6.6-1. Identifying Potential Project Interactions and Effects on Groundwater Quantity .....6.6-33

Table 6.6-2. Net Groundwater Flows Summary .....6.6-38

Table 6.6-3. Summary of Residual Effects on Groundwater Quantity .....6.6-52

Table 6.6-4. Definitions of Characterization Criteria for Residual Effects on Groundwater Quantity .....6.6-53

Table 6.6-5. Characterization of Residual Effects, Significance, Likelihood and Confidence on Groundwater Quantity .....6.6-56

Table 6.6-6. Summary of Residual Effects, Mitigation, and Significance on Groundwater Quantity .....6.6-57

Table 6.6-7. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Groundwater Quantity .....6.6-59

Table 6.6-8. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Groundwater Quantity .....6.6-62

Table 6.6-9. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Groundwater Quantity.....6.6-62

Table 6.7-1. Peterson Creek Macroreach and Sample Site Locations.....6.7-13

Table 6.7-2. Average Tissue Metals Concentrations (2014) Compared to Guidelines for Consumption .....6.7-24

Table 6.7-3. Average Sediment Metals Concentrations (2014) Compared to Guidelines for the Protection of Aquatic Life.....6.7-27

Table 6.7-4. Phytoplankton Community Indices 2014 .....6.7-31

Table 6.7-5. Zooplankton Community Indices 2014.....6.7-31

Table 6.7-6. Periphyton Community Indices 2014.....6.7-31

Table 6.7-7. Benthic Macroinvertebrate Community Indices 2014.....6.7-32

Table 6.7-8. Identifying Potential Project Interactions and Effects on Fish and Fish Habitat .....6.7-36

Table 6.7-9. Recommended Instream Flow Thresholds for Lower Peterson Creek.....6.7-45

Table 6.7-10. Estimated Resident Anglers in BC.....6.7-48

Table 6.7-11. Potential Effects, Mitigation Measures, and Determination of Significance for Water Quality Changes (Water Chemistry) .....6.7-55

Table 6.7-12. Blast Design to Meet 100 kPa Overpressure and 13 mm/s Peak Particle Velocity .....6.7-72

Table 6.7-13. Summary of Residual Effects on Fish and Fish Habitat .....	6.7-79
Table 6.7-14. Definitions of Characterization Criteria for Residual Effects on Fish and Fish Habitat .....	6.7-81
Table 6.7-15. Characterization of Residual Effects, Significance, Likelihood and Confidence on Fish and Fish Habitat .....	6.7-83
Table 6.7-16. Summary of Residual Effects, Mitigation, and Significance on Fish and Fish Habitat .....	6.7-87
Table 6.7-17. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Fish and Fish Habitat .....	6.7-89
Table 6.7-18. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Fish and Fish Habitat .....	6.7-92
Table 6.7-19. Characterization of Residual Cumulative Effects, Significance, Likelihood and Confidence on Fish and Fish Habitat .....	6.7-92
Table 6.7-20. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Fish and Fish Habitat.....	6.7-95
Table 6.8-1. Summary of Indicator Species Selection Rationale and Stakeholder Issues Raised.....	6.8-4
Table 6.8-2. SARA Schedule 1 Rare Plant Recovery Planning Documents.....	6.8-11
Table 6.8-3. Survey Effort for Rare Plants.....	6.8-17
Table 6.8-4. Rare Plant Occurrences Found Within the LSA .....	6.8-17
Table 6.8-5. Summary of TEM Field-truthing Plot Types.....	6.8-24
Table 6.8-6. Traditional Used Plants VC Indicator Species.....	6.8-24
Table 6.8-7. Noxious Weeds Recorded in the LSA during 2014 Surveys.....	6.8-25
Table 6.8-8. Identifying Potential Project Interactions and Effects on Rare Plants .....	6.8-26
Table 6.8-9. Locations of Rare Plant Sub-populations within Project Study Area.....	6.8-31
Table 6.8-10. Locations of Traditional Use Plants within Project Study Area .....	6.8-36
Table 6.8-11. Rare Plants Found within 100 m Linear Feature Buffer .....	6.8-36
Table 6.8-12. Summary of Residual Effects on Rare Plants .....	6.8-43
Table 6.8-13. Definitions of Characterization Criteria for Residual Effects on Rare Plants.....	6.8-45
Table 6.8-14. Characterization of Residual Effects, Significance, Likelihood and Confidence on Rare Plants .....	6.8-45
Table 6.8-15. Summary of Residual Effects, Mitigation, and Significance on Rare Plants.....	6.8-45

Table 6.8-16. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Rare Plants ..... 6.8-49

Table 6.8-17. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Rare Plants..... 6.8-53

Table 6.8-18. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Rare Plants ..... 6.8-57

Table 6.8-19. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Rare Plants ..... 6.8-57

Table 6.9-1. Ecological Communities at Risk (Excluding Grasslands) Potentially Occurring in the Project Area and Associated Site Series in each Biogeoclimatic Subzone ..... 6.9-4

Table 6.9-2. Indicator Ecosystem Selection Rationale and Issues Raised ..... 6.9-5

Table 6.9-3. Rare and Sensitive Ecological Communities Mapped in the LSA ..... 6.9-21

Table 6.9-4. Identifying Potential Project Interactions and Effects on RSEC ..... 6.9-22

Table 6.9-5. Area of Each Indicator Community Mapped in the Infrastructure Footprints (IF), IDA, and Local Study Area (LSA) ..... 6.9-28

Table 6.9-6. Estimation of Total Red- and Blue-listed Communities within RSA Effected by Project Construction..... 6.9-30

Table 6.9-7. Estimation of Loss of Sensitive Ecosystems within the RSA ..... 6.9-30

Table 6.9-8. Total ha of ECAR within the LSA that may be Altered as a Result of Invasive Species..... 6.9-36

Table 6.9-9. Modelled Median Water Quality for Peterson Creek Node 2.3 ..... 6.9-37

Table 6.9-10. Modelled Median Water Quality for Peterson Creek Node 2.0 ..... 6.9-38

Table 6.9-11. Modelled Median Water Quality for Humphrey Creek..... 6.9-38

Table 6.9-12. Summary of Residual Effects on RSEC..... 6.9-45

Table 6.9-13. Definitions of Characterization Criteria for Residual Effects on RSEC..... 6.9-49

Table 6.9-14. Characterization of Residual Effects, Significance, Likelihood and Confidence on RSEC ..... 6.9-49

Table 6.9-15. Summary of Residual Effects, Mitigation, and Significance on RSEC..... 6.9-49

Table 6.9-16. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Activities on RSEC..... 6.9-53

Table 6.9-17. Summary of Cumulative Effects Mitigation Measures and Residual Effects on RSEC..... 6.9-57

Table 6.9-18. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on RSEC.....	6.9-57
Table 6.9-19. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Rare and Sensitive Ecosystems .....	6.9-58
Table 6.10-1. Red and Blue-listed Grassland Communities Potentially Occurring in the Project Area and Associated Site Series .....	6.10-4
Table 6.10-2. Grasslands and Ecological Communities at Risk Mapped within the LSA.....	6.10-14
Table 6.10-3. Summary of Grassland Condition Scores by Facility .....	6.10-17
Table 6.10-4. Summary of Priority Grasslands Identified by the Grasslands Mapping Initiative in Relation to the Project.....	6.10-18
Table 6.10-5. Identifying Potential Project Interactions and Effects on Grasslands.....	6.10-21
Table 6.10-6. Summary of Grassland Ecosystems in the IF, IDA, and LSA .....	6.10-25
Table 6.10-7. List of Priority Grasslands within LSA, IDA, and IF .....	6.10-26
Table 6.10-8. List of Terrestrial Priority Grassland Areas within the IDA and IF.....	6.10-26
Table 6.10-9. List of Priority Grasslands within RSA, IDA and IF .....	6.10-31
Table 6.10-10. Grasslands Potentially Impacted by Invasive Species .....	6.10-33
Table 6.10-11. Summary of Residual Effects on Grasslands .....	6.10-39
Table 6.10-12. Definitions of Characterization Criteria for Residual Effects on Grasslands .....	6.10-41
Table 6.10-13. Characterization of Residual Effects, Significance, Likelihood and Confidence on Grasslands.....	6.10-41
Table 6.10-14. Summary of Residual Effects, Mitigation, and Significance on Grasslands.....	6.10-43
Table 6.10-15. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Grassland.....	6.10-44
Table 6.10-16. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Grasslands.....	6.10-46
Table 6.10-17. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Grasslands.....	6.10-49
Table 6.10-18. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Grasslands.....	6.10-49
Table 6.11-1. Listed Invertebrate Species Potentially Present in the Area .....	6.11-3
Table 6.11-2. Indicator Specific and Issues Raised during Consultation Feedback .....	6.11-4
Table 6.11-3. Habitat Associations for Indicator Species .....	6.11-15

Table 6.11-4. Summary of Invertebrate Survey Effort .....6.11-18

Table 6.11-5. Associated Food plants and Habitats of Indicator Species .....6.11-22

Table 6.11-6. Identifying Potential Project Interactions and Effects on Terrestrial  
Invertebrates .....6.11-23

Table 6.11-7. Summary of Residual Effects on Terrestrial Invertebrates .....6.11-32

Table 6.12-1. Amphibian Species Present in the Region.....6.12-4

Table 6.12-2. Indicator Species Selection Rationale and Issues Raised.....6.12-4

Table 6.12-3. Amphibian Recovery Planning Documents.....6.12-12

Table 6.12-4. Suitable Amphibian Breeding Habitat in LSA.....6.12-16

Table 6.12-5. Summary of Amphibian Auditory Surveys .....6.12-16

Table 6.12-6. Summary of Amphibian Time-constrained Search Survey Effort .....6.12-21

Table 6.12-7. Results of Amphibian Time-constrained Search Surveys .....6.12-21

Table 6.12-8. Identifying Potential Project Interactions and Effects on Amphibians .....6.12-23

Table 6.12-9. Summary of Breeding Habitat Loss .....6.12-35

Table 6.12-10. Estimation of Wetlands within the RSA .....6.12-36

Table 6.12-11. Summary of Terrestrial Amphibian Habitat Loss in the LSA .....6.12-47

Table 6.12-12. Modelled Median Water Quality for Peterson Creek Node 2.3 .....6.12-48

Table 6.12-13. Modelled Median Water Quality for Peterson Creek Node 2.0 .....6.12-48

Table 6.12-14. Modelled Median Water Quality for Humphrey Creek.....6.12-49

Table 6.12-15. Modelled Median Water Quality for the TSF .....6.12-49

Table 6.12-16. Modelled Median Water Quality for the TSF South Embankment WMP .....6.12-50

Table 6.12-17. Modelled Median Water Quality - TSF Southeast Embankment WMP.....6.12-50

Table 6.12-18. Modelled Median Water Quality - West Mine Rock Storage Facility North  
WMP 1.....6.12-51

Table 6.12-19. Modelled Median Water Quality - West Mine Rock Storage Facility North  
WMP 2.....6.12-52

Table 6.12-20. Modelled Median Water Quality - South Mine Rock Storage Facility WMP .....6.12-53

Table 6.12-21. Modelled Median Water Quality - East Mine Rock Storage Facility WMP .....6.12-53

Table 6.12-22. Summary of Residual Effects on Amphibians .....6.12-65

Table 6.12-23. Definitions of Characterization Criteria for Residual Effects on Amphibians .....6.12-67

Table 6.12-24. Characterization of Residual Effects, Significance, Likelihood and Confidence on Amphibians .....	6.12-67
Table 6.12-25. Summary of Residual Effects, Mitigation, and Significance on Amphibians.....	6.12-70
Table 6.12-26. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Amphibians.....	6.12-73
Table 6.12-27. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Amphibians .....	6.12-76
Table 6.12-28. Characterization of Residual Cumulative Effects, Significance, Likelihood and Confidence on Amphibians .....	6.12-78
Table 6.12-29. Summary of Project and Residual Cumulative Effects, Mitigation, and Significance for Amphibians.....	6.12-79
Table 6.13-1. Reptile Species Present in the Thompson Region .....	6.13-4
Table 6.13-2. Indicator Species Selection Rationale and Issues Raised.....	6.13-4
Table 6.13-3. Reptile Recovery Planning Documents .....	6.13-12
Table 6.13-4. Reptile Habitat Suitability Modeling .....	6.13-18
Table 6.13-5. Summary of Reptile Den Survey Effort and Results.....	6.13-18
Table 6.13-6. Habitat Suitability for Gopher Snake, Racer, and Rattlesnake .....	6.13-21
Table 6.13-7. Identifying Potential Project Interactions and Effects on Reptiles .....	6.13-29
Table 6.13-8. Summary of Habitat Loss by Indicator Species .....	6.13-38
Table 6.14-1. Potential Indicator Species for Migratory Bird VCs.....	6.14-4
Table 6.14-2. Summary of Indicator Species Selection Rationale and Stakeholder Issues Raised.....	6.14-5
Table 6.14-3. Migratory Bird Recovery Planning Documents .....	6.14-14
Table 6.14-4. Summary of Habitat Suitability Mapping for Migratory Birds.....	6.14-19
Table 6.14-5. Summary of Habitat Associations for Migratory Birds.....	6.14-20
Table 6.14-6. Summary of Call-playback Surveys .....	6.14-32
Table 6.14-7. Identifying Potential Project Interactions and Effects on Migratory Birds .....	6.14-39
Table 6.14-8. Summary of Total Habitat Loss within the LSA.....	6.14-49
Table 6.14-9. List of Priority Grasslands within RSA, IDA and IF.....	6.14-49
Table 6.14-10. Summary of Migratory Bird Habitat Alteration.....	6.14-50
Table 6.14-11. Suitable Habitat Disturbed by Noise for Migratory Birds .....	6.14-56

Table 6.14-12. Modelled Median Water Quality for Peterson Creek 2.3 .....6.14-58

Table 6.14-13. Modelled Median Water Quality for Peterson Creek 2.0 .....6.14-58

Table 6.14-14. Modelled Median Water Quality for Humphrey Creek.....6.14-59

Table 6.14-15. Modelled Median Water Quality for the TSF .....6.14-59

Table 6.14-16. Modelled Median Water Quality for the TSF South Embankment WMP .....6.14-60

Table 6.14-17. Modelled Median Water Quality - TSF Southeast Embankment WMP.....6.14-60

Table 6.14-18. Modelled Median Water Quality - West Mine Rock Storage Facility North  
WMP 1 .....6.14-61

Table 6.14-19. Modelled Median Water Quality - West Mine Rock Storage Facility North  
WMP 2 .....6.14-61

Table 6.14-20. Modelled Median Water Quality - South Mine Rock Storage Facility WMP.....6.14-61

Table 6.14-21. Modelled Median Water Quality - East Mine Rock Storage Facility WMP.....6.14-62

Table 6.14-22. Summary of Residual Effects on Migratory Birds.....6.14-73

Table 6.14-23. Definitions of Characterization Criteria for Residual Effects on Migratory Birds.....6.14-75

Table 6.14-24. Characterization of Residual Effects, Significance, Likelihood and Confidence  
on Migratory Birds.....6.14-75

Table 6.14-25. Summary of Residual Effects, Mitigation, and Significance on Migratory Birds ....6.14-77

Table 6.14-26. Ranking Potential for Residual Effects to Interact Cumulatively with Effects  
of Other Human Actions on Migratory Birds .....6.14-81

Table 6.14-27. Summary of Cumulative Effects Mitigation Measures and Residual Effects  
on Migratory Birds.....6.14-82

Table 6.14-28. Characterization of Residual Cumulative Effects, Significance, Likelihood  
and Confidence on Migratory Birds .....6.14-84

Table 6.14-29. Summary of Project and Residual Cumulative Effects, Mitigation, and  
Significance for Migratory Birds .....6.14-84

Table 6.15-1. Raptor Species Present in the Thompson Region.....6.15-4

Table 6.15-2. Indicator Species Selection Rationale and Issues Raised.....6.15-5

Table 6.15-3. Raptor Recovery Planning Documents.....6.15-13

Table 6.15-4. Raptor Habitat Associations.....6.15-18

Table 6.15-5. Summary of Flammulated Owl Call Playback Survey Effort.....6.15-19

Table 6.15-6. Summary of Road-side Survey Effort .....6.15-20

Table 6.15-7. Habitat Suitability for Flammulated Owl in Growing Season in the LSA.....	6.15-20
Table 6.15-8. Raptor Road Survey Results.....	6.15-25
Table 6.15-9. Summary of Raptors Observed Incidentally.....	6.15-25
Table 6.15-10. Summary of Raptor Indicator Species Observations .....	6.15-31
Table 6.15-11. Identifying Potential Project Interactions and Effects on Raptors .....	6.15-37
Table 6.15-12. Structural Stage Distribution (ha) by Spatial Boundaries .....	6.15-42
Table 6.15-13. Structural Stage Distribution (ha) by Blasting Noise Levels.....	6.15-45
Table 6.15-14. Summary of Residual Effects on Raptors .....	6.15-55
Table 6.15-15. Characterization of Residual Effects, Significance, Likelihood and Confidence on Raptors .....	6.15-57
Table 6.15-16. Summary of Residual Effects, Mitigation, and Significance on Raptors.....	6.15-58
Table 6.15-17. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Raptors.....	6.15-59
Table 6.15-18. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Raptors .....	6.15-64
Table 6.15-19. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Raptors.....	6.15-65
Table 6.15-20. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Raptors.....	6.15-65
Table 6.16-1. Gamebird Species Present in the Area .....	6.16-4
Table 6.16-2. Indicator Species Selection Rationale and Issues Raised.....	6.16-4
Table 6.16-3. Habitat Suitability for Sharp-tailed Grouse by Season.....	6.16-15
Table 6.16-4. Broad Habitat Ratings for Sharp-tailed Grouse.....	6.16-16
Table 6.16-5. Ruffed Grouse Habitat Availability .....	6.16-16
Table 6.16-6. Summary of Sharp-tailed Grouse Survey Effort and Observations in the LSA .....	6.16-23
Table 6.16-7. Lek Activity by Year .....	6.16-23
Table 6.16-8. Summary of Ruffed Grouse Survey Effort and Observations in the LSA.....	6.16-24
Table 6.16-9. Identifying Potential Interactions and Effects on Non-migratory Gamebirds.....	6.16-25
Table 6.16-10. Suitable Habitat Lost for Sharp-tailed Grouse by Season .....	6.16-34
Table 6.16-11. Suitable Habitat Disturbed by Noise for Sharp-tailed Grouse by Season.....	6.16-38
Table 6.16-12. Summary of Residual Effects on Non-migratory Gamebirds.....	6.16-50

Table 6.16-13. Definitions of Characterization Criteria for Residual Effects on Non-migratory Gamebirds .....6.16-51

Table 6.16-14. Characterization of Residual Effects, Significance, Likelihood and Confidence on Non-migratory Gamebirds.....6.16-51

Table 6.16-15. Summary of Residual Effects, Mitigation, and Significance on Non-migratory Gamebirds .....6.16-54

Table 6.16-16. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Non-migratory Gamebirds .....6.16-56

Table 6.16-17. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Non-migratory Gamebirds.....6.16-60

Table 6.16-18. Characterization of Residual Cumulative Effects, Significance, Likelihood and Confidence on Non-migratory Gamebirds.....6.16-62

Table 6.16-19. Summary of Project and Residual Cumulative Effects, Mitigation, and Significance for Non-migratory Gamebirds .....6.16-62

Table 6.17-1. Mammal Species Present in the Area.....6.17-4

Table 6.17-2. Summary of Indicator Species Selection Rationale and Stakeholder Issues Raised.....6.17-7

Table 6.17-3. Recovery Planning Documents for SARA-listed Mammals .....6.17-15

Table 6.17-4. Habitat Suitability within the LSA for American Badger and Great Basin Pocket Mouse in All Seasons .....6.17-27

Table 6.17-5. Summary of Mammal Observations During Encounter Transect Surveys .....6.17-28

Table 6.17-6. Identifying Potential Project Interactions and Effects on Mammals.....6.17-37

Table 6.17-7. Summary of Habitat Loss by Indicator Species.....6.17-49

Table 6.17-8. Summary of Habitat Altered by Indicator Species.....6.17-50

Table 6.17-9. Summary of Sensory Disturbance to Badgers.....6.17-58

Table 6.17-10. Modelled Median Water Quality for Peterson Creek 2.3 .....6.17-64

Table 6.17-11. Modelled Median Water Quality for Peterson Creek 2.0 .....6.17-65

Table 6.17-12. Modelled Median Water Quality for Humphrey Creek.....6.17-65

Table 6.17-13. Modelled Median Water Quality for the TSF .....6.17-66

Table 6.17-14. Modelled Median Water Quality for the TSF South Embankment WMP .....6.17-66

Table 6.17-15. Modelled Median Water Quality for the TSF Southeast Embankment WMP.....6.17-66

Table 6.17-16. Modelled Median Water Quality for the West Mine Rock Storage Facility North WMP 1.....6.17-67

Table 6.17-17. Modelled Median Water Quality for the West Mine Rock Storage Facility North WMP 2.....	6.17-67
Table 6.17-18. Modelled Median Water Quality for the South Mine Rock Storage Facility WMP ...	6.17-68
Table 6.17-19. Modelled Median Water Quality for the East Mine Rock Storage Facility WMP .....	6.17-68
Table 6.17-20. Summary of Residual Effects on Mammals .....	6.17-76
Table 6.17-21. Definitions of Characterization Criteria for Residual Effects on Mammals .....	6.17-77
Table 6.17-22. Characterization of Residual Effects, Significance, Likelihood and Confidence on Mammals.....	6.17-77
Table 6.17-23. Summary of Residual Effects, Mitigation, and Significance on Mammals .....	6.17-81
Table 6.17-24. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Mammals.....	6.17-83
Table 6.17-25. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Mammals.....	6.17-88
Table 6.17-26. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Mammals.....	6.17-90
Table 6.17-27. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Mammals.....	6.17-91
Table 6.18-1. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Environmental .....	6.18-2
Table 7-1. Rationale for Including Economic Growth in the Application/EIS .....	7.1-1
Table 7.1-1. Gross Domestic Product (GDP) and Total Employment in British Columbia (2005 to 2013).....	7.1-8
Table 7.1-2. Government Revenue - British Columbia, TNRD and City of Kamloops (2005 to 2013).....	7.1-9
Table 7.1-3. Total Economic Impacts for Ajax Project Construction Phase (Direct, Indirect, and Induced Impacts).....	7.1-16
Table 7.1-4. Total Economic Impacts for Ajax Project Operations Phase (Direct, Indirect, and Induced Impacts; 2015 Cdn\$) .....	7.1-17
Table 7.1-5 Identifying Potential Project Interactions and Effects on Economic Growth .....	7.1-19
Table 7.1-6. Summary of Residual Effects on Economic Growth.....	7.1-25
Table 7.1-7. Definitions of Characterization Criteria of Residual Effects on Economic Growth.....	7.1-27
Table 7.1-8. Characterization of Residual Effects, Significance, Likelihood and Confidence on Economic Growth.....	7.1-27

Table 7.1-9. Summary of Residual Effects, Mitigation, and Significance on Economic Growth.....7.1-30

Table 7.1-10. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Economic Growth.....7.1-33

Table 7.1-11. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Economic Growth .....7.1-33

Table 7.2-1. Rationale for Including Labour Force, Employment, and Training in Application/EIS .....7.2-1

Table 7.2-2. Labour Force Indicators for Select Communities, the LSA, the RSA, and BC, 2001, 2006, 2011.....7.2-7

Table 7.2-3. Labour Force Distribution by Industry, 2011.....7.2-10

Table 7.2-4. Occupation Classification Distributions, 2011 .....7.2-13

Table 7.2-5. Construction Phase Estimated Direct Workforce Requirements for the Ajax Project.....7.2-22

Table 7.2-6. Estimates of Local and Non-local Hires for Project Construction.....7.2-24

Table 7.2-7. Operation Phase Estimated Direct Workforce Requirements (Annual Average) for the Ajax Project.....7.2-25

Table 7.2-8. Estimates of Local and Non-local Hires for Project Operations (Annual Average) .....7.2-26

Table 7.2-9. Identifying Potential Project Interactions and Effects on Labour Force, Employment and Training.....7.2-28

Table 7.2-10. Summary of Residual Effects on Labour Force, Employment and Training.....7.2-34

Table 7.2-11. Characterization of Residual Effects, Significance, Likelihood and Confidence on Labour Force, Employment and Training.....7.2-37

Table 7.2-12. Characterization of Residual Effects, Significance, Likelihood and Confidence on Labour Force, Employment, and Training.....7.2-37

Table 7.2-13. Summary of Residual Effects, Mitigation, and Significance on Labour Force, Employment, and Training.....7.2-39

Table 7.2-14. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Labour Force, Employment and Training.....7.2-41

Table 7.2-15. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Labour Force, Employment and Training .....7.2-44

Table 7.3-1. Rational for Including Income as aValued Components in the Application.....7.3-1

Table 7.3-2. Total Personal Income for the LSA, RSA, and BC, 2011 .....7.3-11

Table 7.3-3. Average Family Income for the LSA, RSA, and BC, 2011 .....	7.3-12
Table 7.3-4. Household Income, 2011 .....	7.3-13
Table 7.3-5. Composition of Income, 2006 and 2011 .....	7.3-14
Table 7.3-6. Estimates of Local Hires for Project Construction.....	7.3-18
Table 7.3-7. Estimated Regional Employment Earnings during Project Construction under Low and High Local Employment Scenarios (2015 \$Cdn millions).....	7.3-19
Table 7.3-8. Estimates of Local Hires for Project Operations .....	7.3-19
Table 7.3-9. Estimated Employment Earnings during Project Operations under Low and High Local Employment Scenarios (2015 Cdn\$ millions) .....	7.3-20
Table 7.3-10. Identifying Potential Project Interactions and Effects on Income .....	7.3-21
Table 7.3-11. Summary of Residual Effects on Income .....	7.3-25
Table 7.3-12. Definitions of Characterization Criteria for Residual Effects on Income.....	7.3-27
Table 7.3-13. Characterization of Residual Effects, Significance, Likelihood and Confidence on Income .....	7.3-27
Table 7.3-14. Summary of Residual Effects, Mitigation, and Significance on Income.....	7.3-30
Table 7.3-15. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Income.....	7.3-31
Table 7.3-16. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Income .....	7.3-35
Table 7.4-1. Rationale for Including Business as a VC in the Application .....	7.4-1
Table 7.4-2. Identifying Potential Project Interactions and Effects on Business.....	7.4-19
Table 7.4-3. Summary of Residual Effects on Business.....	7.4-25
Table 7.4-4. Definitions of Characterization Criteria for Residual Effects on Business.....	7.4-27
Table 7.4-5. Characterization of Residual Effects, Significance, Likelihood and Confidence on Business .....	7.4-27
Table 7.4-6. Summary of Residual Effects, Mitigation, and Significance on Business .....	7.4-30
Table 7.4-7. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Business.....	7.4-31
Table 7.4-10. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Business .....	7.4-35
Table 7.4-11. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Business.....	7.4-37

Table 7.4-12. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Business .....7.4-38

Table 7.5-1. Rationale for Including Property Values in Application/EIS as a VC .....7.5-1

Table 7.5-2. Industrial Sites, City of Kamloops .....7.5-10

Table 7.5-3. Potential Influence on Property Values .....7.5-19

Table 7.5-4. Identifying Potential Project Interactions and Effects on Property Values.....7.5-20

Table 7.5-5. Recent EISs Assessing Potential Effects on Property Values .....7.5-26

Table 7.5-6. Summary of Residual Effects on Property Values .....7.5-36

Table 7.5-7. Definitions of Characterization Criteria for Residual Effects on Property Values .....7.5-39

Table 7.5-8. Characterization of Residual Effects, Significance, Likelihood and Confidence on Property Values.....7.5-39

Table 7.5-9. Summary of Residual Effects, Mitigation, and Significance on Property Values .....7.5-43

Table 7.5-10. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Property Values .....7.5-45

Table 7.5-11. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Property Values .....7.5-47

Table 7.5-12. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Property Values.....7.5-49

Table 7.5-13. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Property Values .....7.5-51

Table 7.6-1. Rationale for including Economic Diversification as a VC in the Application .....7.6-1

Table 7.6-2. Income Dependencies for Kamloops Local Area (% Total Income) .....7.6-10

Table 7.6-3. Income Dependencies for Local Areas in the TNRD (% Total Income, 2006) .....7.6-12

Table 7.6-4. Diversity Indexes for Local Areas within the TNRD (1996, 2001, 2006).....7.6-13

Table 7.6-5. Population by Census Subdivision in Kamloops Local Area, 2006 .....7.6-14

Table 7.6-6. Identifying Potential Project Interactions and Effects on Economic Diversification.....7.6-21

Table 7.6-7. Estimates of Local Hires for Project Construction.....7.6-20

Table 7.7-1. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Economic .....7.7-2

Table 8.1-1. Rationale for Including Infrastructure, Public Facilities, and Services as a Valued Component .....8.1-1

Table 8.1-2. Total Population for the TNRD, 1996, 2001, 2006, 2011 .....	8.1-3
Table 8.1-3. Population for Communities in the LSA and RSA, 2001, 2006, 2011 .....	8.1-6
Table 8.1-4. Household and Dwelling Characteristics, 2011 .....	8.1-7
Table 8.1-5. Number of Privately Owned Apartments by Size of Structure in Kamloops, April 2015 .....	8.1-8
Table 8.1-6. Availability and Vacancy Rates for Kamloops, Kelowna, and British Columbia, April 2015 .....	8.1-8
Table 8.1-7. Hotel Occupancy Rate by Month for Kamloops, 2014.....	8-10
Table 8.1-8. Crime Rates for Total <i>Criminal Code</i> Offences, 2004-2013.....	8.1-12
Table 8.1-9. Base Traffic Volumes .....	8.1-16
Table 8.1-10. Census Sub-divisions in the Thompson-Nicola Regional District Census Division and Sub-Divisions in the Local Study Area.....	8.1-20
Table 8.1-11. Identifying Potential Project Interactions and Effects on Infrastructure, Public Facilities, and Services .....	8.1-27
Table 8.1-12. Estimated Non-local Workforce during Project Construction .....	8.1-34
Table 8.1-13. Estimated Total In-migration for Average Project Operations for Direct Employment – Employees and Families .....	8.1-34
Table 8.1-14. Indirect and Induced Employment Created as Result of Direct Project Employment during Project Operation.....	8.1-35
Table 8.1-15. Total In-migration for Indirect and Induced Employment during Project Operation Employment.....	8.1-36
Table 8.1-16. High and Low In-migration for Direct, Indirect, and Induced Employment during the Operations Phase .....	8.1-36
Table 8.1-17. Estimated Annual Project Domestic (Putrescible) Waste Production, Construction and Operations .....	8.1-43
Table 8.1-18. Estimated Sewage Sludge Volumes for the Project, Construction and Operations .....	8.1-43
Table 8.1-19. Forecast of Total Traffic Volumes for Construction and Operations Phases.....	8.1-45
Table 8.1-20. Summary of Residual Effects on Infrastructure, Public Facilities, and Services .....	8-52
Table 8.1-21. Definitions of Characterization Criteria for Residual Effects on Infrastructure, Public Facilities, and Services .....	8.1-57
Table 8.1-22. Characterization of Residual Effects, Significance, Likelihood and Confidence on Infrastructure, Public Facilities, and Services .....	8.1-59

Table 8.1-23. Summary of Residual Effects, Mitigation, and Significance on Infrastructure, Public Facilities, and Services .....8-67

Table 8.1-24. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Infrastructure, Public Facilities, and Services.....8.1-71

Table 8.1-25. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Infrastructure, Public Facilities, and Services.....8.1-75

Table 8.1-26. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Infrastructure, Public Facilities, and Services .....8.1-81

Table 8.1-27. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Infrastructure, Public Facilities, and Services .....8.1-83

Table 8.2-1. Correlation between Bortle Classification and Sky Brightness Readings.....8.2-8

Table 8.2-2. Baseline Sampling Average Readings and Bortle Classification.....8.2-12

Table 8.2-3. Lighting Level Requirements for Project Components and Activities.....8.2-23

Table 8.2-4. Bortle Classification of Baseline Sampling Locations during Operation before Mitigation .....8.2-29

Table 8.2-5. Summary of Residual Effects on Dark Sky.....8.2-32

Table 8.2-6. Definitions of Characterization Criteria for Residual Effects on Dark Sky .....8.2-33

Table 8.2-7. Characterization of Residual Effects, Significance, Likelihood and Confidence on Dark Sky.....8.2-35

Table 8.2-8. Summary of Residual Effects, Mitigation, and Significance on Dark Sky .....8.2-36

Table 8.2-9. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Dark Sky.....8.2-39

Table 8.2-10. Cumulative Effects Interactions Matrix for Dark Sky.....8.2-41

Table 8.2-11. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Dark Sky.....8.2-41

Table 8.2-12. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Dark Sky.....8.2-41

Table 8.2-13. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Dark Sky .....8.2-41

Table 8.3-1. Viewpoint Locations.....8.3-10

Table 8.3-2. Potential Visual Quality Objectives.....8.3-12

Table 8.3-3. Identifying Potential Project Interactions and Effects on Visual Impact/ Aesthetic Features .....8.3-21

Table 8.3-4. Results of Viewshed Analysis for All Viewpoints .....	8.3-25
Table 8.3-5. Existing Landscape Visual Character.....	8.3-27
Table 8.3-6. Degree of Visual Modification .....	8.3-27
Table 8.3-7. Horizontal Visual Effect.....	8.3-28
Table 8.3-8. Vertical Visual Effect .....	8.3-28
Table 8.3-9. Distance of Visual Effect .....	8.3-28
Table 8.3-10. Final Visual Effect Rating.....	8.3-29
Table 8.3-11. Results of Hassell Matrix Analysis, Operations Phase .....	8.3-29
Table 8.3-12. Results of Hassell Matrix Analysis, Post Closure Phase .....	8.3-30
Table 8.3-13. Results of Hassell Matrix Analysis for 230 kV Power Line.....	8.3-31
Table 8.3-14. Summary of Residual Effects on Visual Quality .....	8.3-57
Table 8.3-15. Definitions of Characterization Criteria for Residual Effects on Visual Impact/Aesthetic Features.....	8.3-59
Table 8.3-16. Characterization of Residual Effects, Significance, Likelihood and Confidence on Visual Impact/Aesthetic Features.....	8.3-59
Table 8.3-17. Summary of Residual Effects, Mitigation, and Significance on Visual Impact/ Aesthetic Features .....	8.3-61
Table 8.3-18. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions for Visual Impact/Aesthetic Features.....	8.3-63
Table 8.3-19. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Visual Impact/Aesthetic Features .....	8.3-65
Table 8.3-20. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Visual Impact/Aesthetic Features.....	8.3-66
Table 8.3-21. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Visual Impact/Aesthetic Features .....	8.3-66
Table 8.4-1. Summary of Rationale and Justification for Land and Resource Use as a VC .....	8.4-2
Table 8.4-2. City of Kamloops, TNRD and Provincial Plans and Designations.....	8.4-7
Table 8.4-3. Description of Land Use Plans and Designations .....	8.4-7
Table 8.4-4. Identifying Potential Project Interactions and Effects on Land and Resource Use.....	8.4-22
Table 8.4-5. Land Use Designations Overlapping the Project .....	8.4-29
Table 8.4-6. Predicted Effects on Field Use for Ranching.....	8.4-32

Table 8.4-7. Summary of Residual Effects on Land and Resource Use Planning .....8.4-40

Table 8.4-8. Definitions of Characterization Criteria for Residual Effects on Land and Resource Use.....8.4-42

Table 8.4-9. Characterization of Residual Effects, Significance, Likelihood and Confidence on Land and Resource Use.....8.4-42

Table 8.4-10. Summary of Residual Effects, Mitigation, and Significance on Land and Resource Use.....8.4-45

Table 8.4-11. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Land and Resource Use .....8.4-48

Table 8.4-12. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Land and Resource Use.....8.4-50

Table 8.5-1. Indicators included in the Application/EIS for CULRTP.....8.5-4

Table 8.5-2. Existing Disturbances within Proposed Mine Footprint .....8.5-9

Table 8.5-3. Surface Rights in LSA and RSA in Hectares .....8.5-9

Table 8.5-4. Skeetchestn Indian Reserves Occupied by SIB .....8.5-11

Table 8.5-5. Summary of Hunting and Trapping Activity by SSN .....8.5-21

Table 8.5-6. Summary of Fishing Activity by SSN .....8.5-26

Table 8.5-7. Summary of Plants Harvested by SSN .....8.5-29

Table 8.5-8. Summary of Ceremonial or Other Cultural Uses by SSN.....8.5-33

Table 8.5-9. Nlaka’pamux Plant Harvesting .....8.5-43

Table 8.5-10. Summary of Hunting and Trapping Activity by WP/CIB .....8.5-48

Table 8.5-11. Summary of Fishing Activity by WP/CIB .....8.5-49

Table 8.5-12. Summary of Plant Harvesting by WP/CIB.....8.5-49

Table 8.5-13. Summary of Effects Assessments from Other Valued Components .....8.5-57

Table 8.5-14. Identifying Potential Project Interactions and Effects on Current Use of Lands and Resources for Traditional Purposes .....8.5-69

Table 8.5-15. Effects Included for Assessment.....8.5-73

Table 8.5-16. Mitigation Measures for Potential Project Effects on Fishing Opportunities and Practices.....8.5-83

Table 8.5-17. Mitigation Measures for Potential Project Effects on Hunting and Trapping Opportunities and Practices .....8.5-87

Table 8.5-18. Mitigation Measures for Potential Project Effects on Plant Gathering Opportunities and Practices .....	8.5-91
Table 8.5-19. Mitigation Measures for Potential Project Effects on Use of Traditional/Cultural Areas.....	8.5-95
Table 8.5-20. Potential Areas for Return to Pre-Disturbance Conditions.....	8.5-97
Table 8.5-21. Summary of Residual Effects - SSN.....	8.5-98
Table 8.5-22. Summary of Residual Effects - AIB.....	8.5-99
Table 8.5-23. Summary of Residual Effects - LNIB.....	8.5-99
Table 8.5-24. Summary of Residual Effects - WP/CIB.....	8.5-100
Table 8.5-25. Summary of Residual Effects - MNBC.....	8.5-100
Table 8.5-26. Definitions of Characterization Criteria for Residual Effects on Current Use of Land and Resources for Traditional Purposes.....	8.5-101
Table 8.5-27. Characterization of Residual Effects, Significance, Likelihood and Confidence on Current Use of Lands and Resources for Traditional Purposes for SSN .....	8.5-104
Table 8.5-28. Changes in the Availability of Harvested Resources.....	8.5-110
Table 8.5-29. Losses of Traditional Use Plants within the Mine Footprint .....	8.5-115
Table 8.5-30. Summary of the Significance Determination for SSN.....	8.5-122
Table 8.5-31. Characterization of Residual Effects, Significance, Likelihood and Confidence on Current Use of Lands and Resources for Traditional Purposes for AIB.....	8.5-123
Table 8.5-32. Characterization of Residual Effects, Significance, Likelihood and Confidence on Current Use of Lands and Resources for Traditional Purposes for LNIB .....	8.5-123
Table 8.5-33. Characterization of Residual Effects, Significance, Likelihood and Confidence on Current Use of Lands and Resources for Traditional Purposes for WP/CIB .....	8.5-124
Table 8.5-34. Characterization of Residual Effects, Significance, Likelihood and Confidence on Current Use of Lands and Resources for Traditional Purposes for MNBC .....	8.5-124
Table 8.5-35. Changes in the Availability of Harvested Resources.....	8.5-129
Table 8.5-36. Summary of the Significance Determination for AIB .....	8.5-137
Table 8.5-37. Summary of the Significance Determination for LNIB.....	8.5-137
Table 8.5-38. Summary of the Significance Determination for WP/CIB.....	8.5-137
Table 8.5-39. Summary of the Significance Determination for MNBC.....	8.5-137
Table 8.5-40. Residual Effects on CULRTP Carried Forward for Cumulative Effects Assessment.....	8.5-138

Table 8.5-41. Screening of Other Actions for Inclusion in the CEA for Current Use of Lands and Resources for Traditional Purposes .....8.5-141

Table 8.5-42. Cumulative Effects Interactions Matrix for Current use of Land and Resources for Traditional Purposes.....8.5-149

Table 8.5-43. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Current Use of Land and Resources for Traditional Purposes .....8.5-150

Table 8.5-44. Summary of Cumulative Residual Effects, and Significance for Current Use of Land and Resources for Traditional Purposes .....8.5-151

Table 8.5-45. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Land and Resource Use .....8.5-152

Table 8.6-1. Summary of Rationale and Justification for Outdoor Recreation as a VC.....8.6-1

Table 8.6-2. Identifying Potential Project Interactions on Outdoor Recreation.....8.6-22

Table 8.6-3. Potential Pathways of Effects on Outdoor Recreation.....8.6-25

Table 8.6-4. Summary of Project Activities and Recreation Restrictions.....8.6-26

Table 8.6-5. Summary of Residual Effects on Outdoor Recreation .....8.6-37

Table 8.6-6. Definitions of Characterization Criteria for Residual Effects on Outdoor Recreation.....8.6-39

Table 8.6-7. Characterization of Residual Effects, Significance, Likelihood and Confidence on Outdoor Recreation .....8.6-39

Table 8.6-8. Summary of Residual Effects, Mitigation, and Significance on Outdoor Recreation .....8.6-44

Table 8.6-9. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Outdoor Recreation.....8.6-47

Table 8.6-10. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Outdoor Recreation.....8.6-50

Table 8.7-1. Valued Component Assessments Included in the Summary for Jacko Lake .....8.7-2

Table 8.7-2. Spatial and Temporal Boundaries for VCs Relevant to Jacko Lake .....8.7-15

Table 8.7-3. Overview of Residual Effects, Mitigation and Significance for Surface Water Quantity Related to Jacko Lake .....8.7-17

Table 8.7-4. Summary of Residual Effects, Mitigation and Significance for Groundwater Quantity Related to Jacko Lake .....8.7-18

Table 8.7-5. Overview of Residual Effects, Mitigation and Significance for Fish and Fish Habitat Related to Jacko Lake.....8.7-19

Table 8.7-6. Overview of Residual Effects, Mitigation and Significance for Wildlife Related to Jacko Lake .....	8.7-20
Table 8.7-7. Overview of Residual Effects, Mitigation and Significance for Visual Impacts and Aesthetic Features Related to Jacko Lake.....	8.7-21
Table 8.7-8. Overview of Residual Effects, Mitigation and Significance for Land and Resource Use Related to Jacko Lake .....	8.7-22
Table 8.7-9. Overview of Residual Effects, Mitigation and Significance for Current Use of Lands and Resources for Traditional Purposes Related to Jacko Lake.....	8.7-25
Table 8.7-10. Overview of Residual Effects, Mitigation and Significance for Outdoor Recreation Related to Jacko Lake .....	8.7-27
Table 8.7-11. Overview of Residual Effects, Mitigation and Significance for Heritage Related to Jacko Lake.....	8.7-28
Table 8.7-12. Overview of Residual Effects, Mitigation and Significance for Air Quality Related to Jacko Lake.....	8.7-29
Table 8.7-13. Overview of Residual Effects, Mitigation and Significance for Country Foods Related to Jacko Lake.....	8.7-30
Table 8.7-14. Overview of Residual Effects, Mitigation and Significance for Noise and Vibration Related to Jacko Lake .....	8.7-31
Table 8.7-15. References to Cumulative Effects Assessment Sections .....	8.7-31
Table 8.8-1. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Social .....	8.8-2
Table 9.1-1. Identifying Potential Project Interactions and Effects on Archaeological Sites.....	9.1-13
Table 9.1-2. Archaeological Sites that will be Directly Affected by the Ajax Project.....	9.1-17
Table 9.1-3. Archaeological Sites that may be Indirectly Affected by the Ajax Project.....	9.1-21
Table 9.1-4. Summary of Residual Effects on Archaeological Sites .....	9.1-24
Table 9.1-5. Definitions of Characterization Criteria for Residual Effects on Archaeological Sites.....	9.1-25
Table 9.1-6. Characterization of Residual Effects, Significance, Likelihood and Confidence on Archaeological Sites.....	9.1-27
Table 9.1-7. Summary of Residual Effects, Mitigation, and Significance on Archaeological Sites .....	9.1-29
Table 9.1-8. Screening of Other Actions for Inclusion in the CEA for Archaeological Site .....	9.1-30
Table 9.2-1. Identifying Potential Project Interactions and Effects on Heritage Sites.....	9.2-15
Table 9.2-2. Built Heritage Sites within the Local Study Area.....	9.2-21

Table 9.2-3. Screening of Other Actions for Inclusion in the CEA for Heritage Site .....9.2-23

Table 9.3-1. Summary of Assessment of Potential Heritage Effects .....9.3-2

Table 10.1-1. Annual Emissions in the Air Quality Study Areas (tonnes) .....10.1-16

Table 10.1-2. Background Concentrations of Continuously Monitored Gases and Particulate Matter in Kamloops .....10.1-16

Table 10.1-3. Provincial and Federal Ambient Air Quality Objectives and Standards .....10.1-17

Table 10.1-4. PM<sub>2.5</sub> Criteria from Other Jurisdictions .....10.1-24

Table 10.1-5. Identifying Potential Project Interactions and Effects on Air Quality .....10.1-25

Table 10.1-6. Maximum Predicted Criteria Air Contaminant Concentrations Associated with the Base Case Dispersion Modelling Scenario .....10.1-32

Table 10.1-7. Maximum Predicted Criteria Air Contaminant Concentrations Associated with the Project Case - Operation Dispersion Modelling Scenario .....10.1-39

Table 10.1-8. Maximum Predicted Criteria Air Contaminant Concentrations in the city of Kamloops Associated with the Application Case - Construction Dispersion Modelling Scenario .....10.1-45

Table 10.1-9. Maximum Predicted Criteria Air Contaminant Concentrations in the city of Kamloops Associated with the Application Case - Operation Dispersion Modelling Scenario .....10.1-48

Table 10.1-10. Summary of Residual Effects on Air Quality .....10.1-61

Table 10.1-11. Criteria for Characterization of Air Quality Residual Effects.....10.1-63

Table 10.1-12. Characterization of Residual Effects, Significance, Likelihood and Confidence on Air Quality .....10.1-66

Table 10.1-13. Summary of Residual Effects, Mitigation, and Significance on Air Quality .....10.1-69

Table 10.1-14. Screening of Other Actions for Inclusion in the CEA for Air Quality .....10.1-71

Table 10.1-15. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Air Quality .....10.1-75

Table 10.2-1. Baseline Concentration of Chemicals in Municipal Water and Knutsford Surface and Groundwater .....10.2-3

Table 10.2-2. Identifying Potential Project Interactions and Effects on Domestic Water Quality .....10.2-10

Table 10.2-3. Baseline and Future Case Chemical Concentration in Knutsford Surface and Groundwater.....10.2-14

Table 10.2-4. Screening of Other Action Items for Inclusion in the CEA for Domestic Water Quality .....10.2-21

Table 10.3-1. Identifying Potential Project Interactions and Effects on Country Foods.....	10.3-9
Table 10.3-2. Baseline and Future Case COPC Concentrations in Country Foods (Mule Deer, Snowshoe Hare, and Ruffed Grouse).....	10.3-14
Table 10.3-3. Baseline and Future Case COPC Concentrations in Country Foods (Domestic Cattle, Rainbow Trout, and Traditional Plants).....	10.3-15
Table 10.3-4. Baseline and Future Case COPC Concentrations in Aberdeen Garden Produce ...	10.3-15
Table 10.3-5. Baseline and Future Case COPC Concentrations in Brocklehurst Garden Produce.....	10.3-16
Table 10.3-6. Baseline and Future Case COPC Concentrations in Sahali Garden Produce.....	10.3-17
Table 10.3-7. Baseline and Future Case COPC Concentrations in North Shore Garden Produce.....	10.3-17
Table 10.3-8. Baseline and Future Case COPC Concentrations in West End/Downtown Garden Produce.....	10.3-18
Table 10.3-9. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Country Foods .....	10-23
Table 10.4-1. Identifying Potential Project Interactions and Effects on Human Health.....	10.4-21
Table 10.4-2. Concentration Ratios for Inhalation Exposures to Criteria Air Contaminants at the Maximum Point of Impingement.....	10.4-30
Table 10.4-3. Concentration Ratios for Inhalation Exposures to Criteria Air Contaminants in Aberdeen and Upper Aberdeen.....	10.4-30
Table 10.4-4. Concentration Ratios for Inhalation Exposures to Criteria Air Contaminants in Kamloops Indian Reserve #1.....	10.4-31
Table 10.4-5. Maximum Concentration Ratios and Percent Increase from Baseline to Future Case for Aberdeen for PM <sub>2.5</sub> .....	10.4-32
Table 10.4-6. Maximum CRs and Percent Increase from Baseline to Future Case for West End/Downtown (Surrogate for Aboriginal Exposure) for PM <sub>2.5</sub> .....	10.4-32
Table 10.4-7. Maximum Concentration Ratios and Percent Increase from Baseline to Future Case for Aberdeen for PM <sub>10</sub> .....	10.4-32
Table 10.4-8. Maximum Concentration Ratios and Percent Increase from Baseline to Future Case for West End/Downtown (Surrogate for Aboriginal Exposure) for PM <sub>10</sub> .....	10.4-33
Table 10.4-9. Predicted Concentration Ratios for Dust-Bound Metal Inhalation for the Maximum Point of Impingement, Aberdeen and Kamloops Indian Reserve #1.....	10.4-34
Table 10.4-10. Predicted Incremental Increase in Lifetime Cancer Risk for Metal Inhalation .....	10.4-35
Table 10.4-11. Predicted Incremental Increase in Lifetime Cancer Rates for PAHs .....	10.4-36

Table 10.4-12. Non-Carcinogenic Human Health Risks Associated with Ingestion of Country Foods: Aberdeen Toddler ..... 10.4-37

Table 10.4-13. Non-Carcinogenic Human Health Risks Associated with Ingestion of Country Foods: Knutsford Toddler ..... 10.4-38

Table 10.4-14. Non-Carcinogenic Human Health Risks Associated with Ingestion of Country Foods: Aboriginal Toddler ..... 10.4-39

Table 10.4-15. Incremental Increase in Lifetime Cancer Risk for Ingestion of Country Foods: Residential, Farmer-Rancher and Aboriginal Receptors ..... 10.4-40

Table 10.4-16. Non-Carcinogenic Human Health Risks Associated with Domestic Water Consumption: Aberdeen Residential and Knutsford Farmer-Rancher Receptors..... 10.4-41

Table 10.4-17. Comparison of Canadian and BC Drinking Water Guidelines with Baseline Case and Future Case Arsenic Concentrations in Domestic Water ..... 10.4-42

Table 10.4-18. Non-Carcinogenic Human Health Risks Associated with Direct Contact with Soil: Aberdeen Toddler..... 10.4-42

Table 10.4-19. Non-Carcinogenic Human Health Risks Associated with Direct Contact with Soil: Knutsford Toddler ..... 10.4-43

Table 10.4-20. Non-Carcinogenic Human Health Risks Associated with Direct Contact with Soil: Aboriginal Toddler ..... 10.4-43

Table 10.4-21. Carcinogenic Human Health Risks Associated with Soil Exposure for a Residential Lifetime Receptor in Aberdeen..... 10.4-44

Table 10.4-22. Carcinogenic Human Health Risks Associated with Soil Exposure for a Farmer-Rancher Lifetime Receptor in Knutsford ..... 10.4-44

Table 10.4-23. Carcinogenic Human Health Risks Associated with Soil Exposure for the Aboriginal Lifetime Receptor ..... 10.4-44

Table 10.4-24. Total Non-Carcinogenic Human Health Risks for the Toddler Associated with Ingestion ..... 10.4-45

Table 10.4-25. Incremental Increase in Lifetime Cancer Risk for Total Ingestion Exposure ..... 10.4-52

Table 10.4-26. Summary of Residual Effects on Human Health ..... 10.4-56

Table 10.4-27. Definitions of Characterization Criteria for Residual Effects on Human Health..... 10-57

Table 10.4-28. Characterization of Residual Effects, Significance, Likelihood and Confidence on Human Health..... 10.4-59

Table 10.4-29. Summary of Residual Effects, Mitigation, and Significance on Human Health Risk..... 10.4-63

Table 10.4-30. Screening of Other Actions for Inclusion in the CEA for Human Health..... 10.4-65

Table 10.5-1. Noise Baseline Studies Monitoring Locations .....	10.5-4
Table 10.5-2. Daytime, Nighttime, and Day-Night Equivalent Sound Level Summary for the Entire Baseline Monitoring Period.....	10.5-8
Table 10.5-3. Identifying Potential Project Interactions and Effects on Noise and Vibration.....	10.5-15
Table 10.5-4. Noise Receptors Baseline Sound Level .....	10.5-22
Table 10.5-5. Construction Phase (Year -1 and Piling Activities) Noise Modelling Results.....	10.5-24
Table 10.5-6. Operation Phase (Year 2 and Years 4 and 8) Noise Modelling Results.....	10.5-27
Table 10.5-7. Comparison to Baseline Sound Level Construction Phase and Piling Activities ...	10.5-35
Table 10.5-8. Comparison to Baseline Sound Level Operation Phase .....	10.5-36
Table 10.5-9. Operation Phase (Year 2 and Years 4 and 8) Comparison to BC OGC PSL.....	10.5-38
Table 10.5-10. Construction Phase (Year -1 and Piling Activities) Change in %HA Results.....	10.5-40
Table 10.5-11. Operation Phase (Year 2 and Years 4 and 8) Change in %HA Results.....	10.5-41
Table 10.5-12. Predicted Ground Vibration and Air Blast Overpressure Result at Receptor Locations.....	10.5-44
Table 10.5-13. Predicted Ground Vibration and Air Blast Results For Zone 1 and Zone 3 Blasts .....	10.5-46
Table 10.5-14. Summary of Residual Effects on Noise and Vibration .....	10.5-60
Table 10.5-15. Definitions of Characterization Criteria for Residual Effects on Noise and Vibration.....	10.5-61
Table 10.5-16. Characterization of Residual Effects, Significance, Likelihood and Confidence on Noise and Vibration .....	10.5-63
Table 10.5-17. Magnitude Classification during the Construction Phase .....	10.5-64
Table 10.5-18. Magnitude Classification during the Operation Phase .....	10.5-67
Table 10.5-19. Vibration Effects Magnitude Classification Rating during Construction and Operation Phase .....	10.5-69
Table 10.5-20. Summary of Residual Effects, Mitigation, and Significance on Noise and Vibration.....	10.5-71
Table 10.5-21. Screening of Other Actions for Inclusion in the CEA for Noise and Vibration ....	10.5-72
Table 10.5-22. Cumulative Effects Interactions Matrix for Noise and Vibration .....	10.5-73
Table 10.5-23. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Noise.....	10.5-74

Table 10.5-24. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Noise .....10.5-75

Table 10.5-25. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Noise and Vibration.....10.5-77

Table 10.6-1. Rationale for Including Healthy Living and Health Education as a Valued Component.....10.6-1

Table 10.6-2. Total Population for the TNRD, 1996, 2001, 2006, 2011 .....10.6-2

Table 10.6-3. Health Behaviour Statistics for Thompson-Cariboo-Shuswap Health Service Delivery Area and British Columbia, (2007-2014) .....10.6-13

Table 10.6-4. Identifying Potential Project Interactions and Effects on Healthy Living and Health Education.....10.6-24

Table 10.6-5. Summary of Residual Effects on Healthy Living and Health Education.....10.6-33

Table 10.6-6. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Healthy Living and Health Education .....10.6-34

Table 10.7-1. Community Health and Well-being .....10.7-1

Table 10.7-2. Factors Contributing to Community Health and Well-being.....10.7-3

Table 10.7-3. Population for the Kamloops LHA and Thompson Cariboo Shuswap HSDA, 2001, 2006, 2011.....10.7-9

Table 10.7-4. Chronic Disease Crude Prevalence Rates, 2011-2012.....10.7-11

Table 10.7-5. Chronic Diseases in the Kamloops LHA .....10.7-11

Table 10.7-6. Average Potential Years of Life Lost per 1,000 Population, 2007-2011.....10.7-12

Table 10.7-7. Baseline Monitoring Results – Daytime, Night time, and Day-Night Equivalent Sound Level Summary – Entire Measurement Period.....10.7-15

Table 10.7-8. Base Traffic Volumes .....10.7-20

Table 10.7-9. Summary of Traffic: Collision Data, 2007-2011.....10.7-20

Table 10.7-10. Community Well-being Index, 2011.....10.7-23

Table 10.7-11. Identifying Potential Project Interactions and Effects on Community Health and Well-being.....10.7-34

Table 10.7-12. Estimated Non-Local Workforce at Peak for Construction<sup>1</sup> .....10.7-42

Table 10.7-13. Summary of Residual Effects on Community Health and Well-being.....10.7-49

Table 10.7-14. Definitions of Characterization Criteria for Residual Effects on Community Health and Well-being.....10.7-53

Table 10.7-15. Characterization of Residual Effects, Significance, Likelihood and Confidence on Community Health and Well-being.....	10.7-53
Table 10.7-16. Summary of Residual Effects, Mitigation, and Significance on Community Health and Well-being.....	10.7-57
Table 10.7-17. Ranking Potential for Residual Effects to Interact Cumulatively with Effects of Other Human Actions on Community Health and Well-being .....	10.7-59
Table 10.7-18. Summary of Cumulative Effects Mitigation Measures and Residual Effects on Community Health and Well-being.....	10.7-62
Table 10.7-19. Characterization of Cumulative Residual Effects, Significance, Likelihood and Confidence on Community Health and Well-being.....	10.7-65
Table 10.7-20. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Community Health and Well-being.....	10.7-68
Table 10.8-1. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Health.....	10.8-2
Table 11.1-1. Environmental Management Plan Categories .....	11.1-9
Table 11.2-1. Summary of Best Management Practices Anticipated during the Construction Phase .....	11.2-8
Table 11.2-2. Summary of Water Quality Guidelines for Turbidity, Suspended and Benthic Sediments .....	11.2-14
Table 11.2-3. Schedule of Monitoring Activities Associated with the Soil Salvage and Handling Plan.....	11.2-16
Table 11.2-4. Summary Table .....	11.2-17
Table 11.3-1. Schedule of Monitoring Activities Associated with the Soil Salvage and Handling Plan.....	11.3-9
Table 11.4-1. Handling, Storage, and Disposal of Solid Waste.....	11.4-3
Table 11.5-1. Operational Determination of NP .....	11.5-2
Table 11.5-2. Definition of PAG Mine Rock and Ore .....	11.5-3
Table 11.5-3. Conversion of Geomet Mine Units to Geo Units.....	11.5-3
Table 11.5-4. Block Model Search Distance (m) .....	11.5-4
Table 11.5-5. Proportion of PAG Samples Based on Proportions from the Static Test Database and the Mine Schedule Using the Modified NPR Criterion .....	11.5-5
Table 11.5-6. Selected ABA Parameters for PAG Mine Rock Units and NPAG Units Used for Blending Estimates.....	11.5-6
Table 11.5-7. Proportion of NPAG Mine Rock Required to Achieve a Blended NPR =3 .....	11.5-7

Table 11.5-8. PAG NPAG Schedule for Pit Backfill..... 11.5-16

Table 11.5-9. PAG NPAG Schedule for South MRSF ..... 11.5-17

Table 11.5-10. PAG NPAG Schedule for West MRSF ..... 11.5-18

Table 11.5-11. PAG NPAG Schedule for Pit Backfill..... 11.5-19

Table 11.5-12. PAG : NPAG Blending Proportions ..... 11.5-21

Table 11.5-13. Confirmatory Sample Analyses and Frequency ..... 11.5-24

Table 11.6-1. Provincial and Federal Ambient Air Quality Objectives and Standards ..... 11.6-2

Table 11.6-2. Air Quality and Dust Control Reporting Summary..... 11.6-12

Table 11.7-1. Average Monthly Climate Data for Ajax (Knight Piésold, 2014b)..... 11.7-7

Table 11.7-2. Wet and Dry Year Annual Precipitation at Ajax (Knight Piésold, 2015)..... 11.7-8

Table 11.7-3. Hydrometric Stations in Project Area ..... 11.7-11

Table 11.7-4. Regional Hydrometric Stations (after Knight Piésold, 2013) ..... 11.7-15

Table 11.7-5. Jacko Lake and Peterson Creek Water Licenses ..... 11.7-18

Table 11.7-6. Edith Lake Water Licenses..... 11.7-18

Table 11.7-7. Jacko Lake Storage Release Rules (from Table 4 of BC Rivers Consulting, 2011)... 11.7-20

Table 11.7-8. Jacko Lake Dam Configuration Summary..... 11.7-28

Table 11.7-9. Peterson Creek Downstream Pond Configuration Summary ..... 11.7-30

Table 11.7-10. Tailings Storage Facility Design Summary (adapted from Norwest, 2015b) ..... 11.7-37

Table 11.7-11. Summary of Construction Activities..... 11.7-47

Table 11.7-12. Process Plant Water Requirements..... 11.7-55

Table 11.7-13. Water Management Reporting, Frequency and Responsibilities..... 11.7-72

Table 11.8-1. Summary Table ..... 11.8-4

Table 11.9-1. Handling, Storage, and Disposal of Solid Waste ..... 11.9-4

Table 11.9-2. Summary Table ..... 11.9-10

Table 11.10-1. Handling, Storage, and Disposal of Hazardous Wastes and Liquid Effluent  
(sewage)..... 11.10-4

Table 11.10-2. Schedule of Monitoring Activities ..... 11.10-13

Table 11.10-3. Summary Table of Reporting Requirements..... 11.10-14

Table 11.11-1. Reporting Summary Table..... 11.11-8

Table 11.16-1. Reportable Quantities under the Spill Reporting Regulation.....	11.16-10
Table 11.18-1. Archaeological Sites within the Local Study Area .....	11.18-6
Table 11.18-2. Reporting Summary .....	11.18-14
Table 11.19-1. Sky Darkness Monitoring Locations .....	11.19-4
Table 11.19-2. Dark Sky Reporting Summary .....	11.19-7
Table 11.20-1. Schedule of Transportation Management Plan Monitoring Activities.....	11.20-9
Table 11.21-1. Schedule of Monitoring Activities Associated with the Access Management Plan.....	11.21-9
Table 11.21-2. Summary Table .....	11.21-10
Table 11.22-1. Noise and Vibration Performance Objectives .....	11.22-2
Table 11.22-2. Proposed Noise and Vibration Monitoring Locations.....	11.22-5
Table 11.23-1. Surface Water Sampling Locations.....	11.23-9
Table 11.24-1. Groundwater Sampling Locations.....	11.24-9
Table 11.25-1. Reporting Summary Table.....	11.25-13
Table 11.26-1. Pre-mining and Conceptual Post-mining Structural Stages and Generalized Ecosystem Descriptions for the Ajax Mine .....	11.26-3
Table 11.26-2. Biogeoclimatic Units for the Ajax Mine .....	11.26-4
Table 11.26-3. Proposed Native Grassland Reclamation Seed Mixture for the Ajax Mine Project.....	11.26-9
Table 11.26-4. Proposed Spring Pasture Seed Mixture for the Ajax Mine Project .....	11.26-9
Table 11.26-5. Proposed Fall Turn-out Pasture Seed Mixture for the Ajax Mine Project.....	11.26-9
Table 11.26-6. Target Habitat Characteristics for Douglas-fir Forests ( <i>Df</i> ) .....	11.26-12
Table 11.26-7. Target Habitat Characteristics for Aspen Copses ( <i>At</i> ).....	11.26-13
Table 11.26-8. Target Habitat Characteristics for Ponderosa Pine Forests ( <i>Py</i> ).....	11.26-13
Table 11.26-9. Target Habitat Characteristics for Grasslands ( <i>Gr</i> ).....	11.26-15
Table 11.27-1. SARA Species on Site with a Recovery Plan .....	11.27-3
Table 11.27-2. Wildlife Sensitive Periods Applicable to the Project.....	11.27-6
Table 11.27-3. Potential Rare Plant Translocations.....	11.27-8
Table 11.27-4. Priority At-risk Forested Communities Mapped in the Local Study Area .....	11.27-8
Table 11.27-5. Area of Wetlands Mapped in the Local Study Area .....	11.27-11

Table 11.27-6. Area of Rock Outcrops Mapped in the Local Study Area.....11.27-11

Table 11.27-7. Area of Grasslands Mapped in the Local Study Area .....11.27-12

Table 11.27-8. Frequency of Monitoring Activities for the Wildlife Effects Monitoring Program .....11.27-20

Table 11.28-1. Closure Plan Reporting ..... 11.28-2

Table 11.29-1. Overview of Social and Economic Monitoring Issues ..... 11.29-1

Table 11.29-2. Stakeholders for Potential Inclusion in the Community Liaison Group..... 11.29-7

Table 11.29-3. Example of Meeting and Topic List for the Community Liaison Group ..... 11.29-8

Table 11.30-1. Expected Statutory Reporting Requirements for the Project .....11.30-3

Table 12.2-1. Summary of Hunting and Trapping Activity ..... 12-22

Table 12.2-2. Summary of Fishing Activity ..... 12-25

Table 12.2-3. Summary of Plants Harvested ..... 12-31

Table 12.2-4. Indian Reserves Occupied by the TteS.....12-36

Table 12.2-5. Tk’emlúps te Secwépemc Indian Band Officials ..... 12-36

Table 12.2-6. TteS Administration Department ..... 12-39

Table 12.2-7. Kamloops IR #1 Population..... 12-40

Table 12.2-8. TteS Members Marital Status ..... 12-40

Table 12.2-9. Kamloops IR #1 Mobility Characteristics..... 12-41

Table 12.2-10. Kamloops IR #1 Household and Dwelling Characteristics ..... 12-42

Table 12.2-11. Kamloops IR #1 Educational Characteristics..... 12-48

Table 12.2-12. Kamloops IR #1 Workforce Characteristics ..... 12-49

Table 12.2-13. Kamloops IR#1 Income Characteristics..... 12-50

Table 12.2-14. Skeetchestn Indian Reserves Occupied by CIB..... 12-51

Table 12.2-15. Skeetchestn Indian Band Officials ..... 12-52

Table 12.2-16. SIB Population ..... 12-52

Table 12.2-17. SIB Members Marital Status ..... 12-53

Table 12.2-18. SIB Members Mobility Characteristics..... 12-53

Table 12.2-19. SIB Members Household and Dwelling Characteristics ..... 12-54

Table 12.2-20. SIB On-reserve Educational Characteristics..... 12-58

Table 12.2-21. SIB On-reserve Workforce Characteristics .....	12-58
Table 12.2-22. SIB On-reserve Income Characteristics .....	12-59
Table 12.2-23. WP/CIB Indian Reserves.....	12-60
Table 12.2-24. Whispering Pines/ Clinton Indian Band Officials .....	12-61
Table 12.2-25. WP/CIB Population .....	12-61
Table 12.2-26. WP/CIB Marital Status Characteristics .....	12-62
Table 12.2-27. WP/CIB Mobility Status .....	12-62
Table 12.2-28. WP/CIB Household and Dwelling Characteristics .....	12-63
Table 12.2-29. Summary of Species, Harvesting Locations, and the Extent of use for the WP/CIB.....	12-65
Table 12.2-30. WP/CIB On-reserve Education Characteristics .....	12-67
Table 12.2-31. WP/CIB On-reserve Workforce Characteristics.....	12-67
Table 12.3-1. Nlaka’pamux Plant Harvesting .....	12-70
Table 12.3-2. LNIB Reserves .....	12-73
Table 12.3-3. LNIB Officials .....	12-73
Table 12.3-4. LNIB Reserve Population Estimates.....	12-74
Table 12.3-5. LNIB Marital Status Characteristics .....	12-74
Table 12.3-6. Mobility Characteristics .....	12-75
Table 12.3-7. Household and Dwelling Characteristics.....	12-75
Table 12.3-8. Education Characteristics .....	12-81
Table 12.3-9. Workforce Characteristics.....	12-82
Table 12.3-10. AIB Reserves .....	12-83
Table 12.3-11. AIB Officials.....	12-83
Table 12.3-12. Registered AIB Population .....	12-84
Table 12.3-13. AIB Marital Status.....	12-84
Table 12.3-14. AIB Mobility Characteristics .....	12-85
Table 12.3-15. AIB Household and Dwelling Characteristics.....	12-85
Table 12.3-16. AIB Education Characteristics.....	12-89
Table 12.3-17. AIB Workforce Characteristics.....	12-90

Table 12.4-1. Métis Region and Chartered Communities in Thompson/Okanagan..... 12-93

Table 13.2-1. Definition of Characterization Criteria for Residual Effects on Aboriginal Interests..... 13-4

Table 13.2-2. Summary of Findings from Key Valued Components ..... 13-7

Table 13.4-1. Changes Made to the Application/EIS as a Result of Input from Aboriginal Groups ..... 13-45

Table 13.5-1. Overlap of Project Footprint<sup>1</sup> with Traditional Territories ..... 13-47

Table 13.6-1. Summary of Stk’emlupsemc te Secwépemc Nation Concerns and Interests Raised in Relation to the Project until July 31, 2015 ..... 13-52

Table 13.6-2. Summary of SSN Comments Regarding Title in the Study Area ..... 13-54

Table 13.6-3. Losses of Traditional Use Plants within the Mine Footprint ..... 13-66

Table 13.7-1. Summary of AIB Interests (Rights and Title) Raised in Relation to the Project ..... 13-84

Table 13.8-1. Summary of LNIB Interests (Rights and Title) Raised in Relation to the Project ..... 13-90

Table 13.9-1. Summary of WP/CIB Interests (Rights and Title) Raised in Relation to the Project..... 13-98

Table 13.10-1. Summary of MNBC Interests Raised in Relation to the Project ..... 13-108

Table 14.2-1. Other Interests and Concerns Expressed by the SSN ..... 14-5

Table 14.2-2. Ajax Project Sample Project Occupations ..... 14-7

Table 14.2-3. Labour Force Experience in Relevant Project Occupations for SSN, LSA and RSA (2011) ..... 14-8

Table 14.2-4. Summary of Adverse Residual Effects on SSN Other Interests ..... 14-31

Table 14.3-1. Other Interests and Concerns Expressed by the AIB ..... 14-37

Table 14.4-1. Other Interests and Concerns Expressed by the LNIB ..... 14-42

Table 14.5-1. Other Interests and Concerns Expressed by the WP/CIB ..... 14-46

Table 14.6-1. Other Interests and Concerns Expressed by the MNBC..... 14-54

Table 15.2-1. Aboriginal Groups Consultation Requirements..... 15-2

Table 15.3-1. Ajax Project Working Group Meetings with SSN Participation..... 15-6

Table 15.3-2. Key Topics Raised by SSN on the Revised AIR/EIS Guidelines..... 15-8

Table 15.3-3. Summary of SSN Site Tours ..... 15-20

Table 15.3-4. Summary of Comments provided by SSN on Sections of the Application/EIS ..... 15-22

Table 15.3-5. Summary of Issues Raised by SSN ..... 15-32

Table 15.3-6. Summary of Consultation Activities with SSN .....	15-39
Table 15.3-7. Ajax Project Working Group Meetings with AIB Participation .....	15-40
Table 15.3-8. Key Topics Raised by AIB on the Revised AIR/EIS Guidelines .....	15-41
Table 15.3-9. Summary of Consultation Activities with AIB.....	15-43
Table 15.3-10. Summary of Issues Raised by AIB.....	15-44
Table 15.3-11. Ajax Project Working Group Meetings with LNIB Participation.....	15-45
Table 15.3-12. Summary of Consultation Activities with LNIB .....	15-49
Table 15.3-13. Summary of Issues Raised by LNIB .....	15-50
Table 15.3-14. Key Topics Raised by WP/CIB on the Revised AIR/EIS Guidelines.....	15-52
Table 15.3-15. Summary of Consultation Activities with WP/CIB.....	15-54
Table 15.3-16. Summary of Issues Raised by WP/CIB .....	15-56
Table 15.3-17. Summary of Consultation Activities with MNBC.....	15-61
Table 15.3-18. Summary of Issues Raised by MNBC .....	15-62
Table 15.5-1. Application Review Consultation Activity .....	15-67
Table 16.3-1. Summary of Linkages between Aboriginal Interests and Other Valued Components .....	16-4
Table 16.3-2. Aboriginal Interest Potentially Affected and Accommodation Measures for SSN .....	16-5
Table 16.3-3. Residual Effects and Mitigation for Other Aboriginal Interests of SSN.....	16-8
Table 16.3-4. Aboriginal Interest Potentially Affected and Accommodation Measures for AIB.....	16-10
Table 16.3-5. Other Interests and Concerns Expressed by AIB.....	16-11
Table 16.3-6. Aboriginal Interest Potentially Affected and Accommodation Measures for LNIB .....	16-12
Table 16.3-7. Other Interests and Concerns Expressed by LNIB.....	16-13
Table 16.3-8. Aboriginal Interest Potentially Affected and Accommodation Measures for WP/CIB .....	16-14
Table 16.3-9. Other Interests and Concerns Expressed by WP/CIB .....	16-15
Table 16.3-10. Aboriginal Interest Potentially Affected and Accommodation Measures for MNBC .....	16-16
Table 16.3-11. Other Interests and Concerns Expressed by MNBC .....	16-17

Table 17.2-1. Summary of Mitigation Measures, Residual and Cumulative Effects and Significance for Federal Components.....17.2-3

Table 17.4-1. Technical Feasibility Performance Objective and Rating .....17.4-3

Table 17.4-2. Economic Feasibility Performance Objective and Rating.....17.4-4

Table 17.4-3. Natural Environment Performance Objective and Rating .....17.4-4

Table 17.4-4. Human Environment Performance Objective and Rating.....17.4-5

Table 17.4-5. Natural and Human Environment Acceptability Ratings for General Arrangement Alternatives .....17.4-8

Table 17.4-6. Technical and Economic Feasibility Ratings for Mining Method .....17.4-9

Table 17.4-7. Economic Feasibility Ratings for Production Rate .....17.4-10

Table 17.4-8. Natural and Human Environment Acceptability Ratings for Production Rates ....17.4-11

Table 17.4-9. Economic Feasibility Rating for Open Pit Limits Alternatives.....17.4-13

Table 17.4-10. Natural and Human Environment Acceptability Ratings for Open Pit Limits.....17.4-15

Table 17.4-11. Environmental Acceptability Ratings for Mine Rock Storage Alternatives .....17.4-21

Table 17.4-12. Results of Pre-screening Assessment .....17.4-29

Table 17.4-13. Technical and Financial Characteristics.....17.4-31

Table 17.4-14. Ranking Matrix for Technical, Cost, Natural and Human Environment Criteria .....17.4-33

Table 17.4-15. Screening Assessment .....17.4-39

Table 17.4-16. Assessment of Technical, Proponent Cost and Project Risks Criteria .....17.4-43

Table 17.4-17. Assessment of Environmental and Human Environment Criteria.....17.4-45

Table 17.4-18. Economic and Technical Feasibility Ratings for TSF Closure Alternatives.....17.4-70

Table 17.4-19. Environmental Acceptability Ratings for TSF Closure Alternatives .....17.4-71

Table 17.4-20. Technical Feasibility of Water Supply Alternatives.....17.4-72

Table 17.4-21. Environmental Acceptability for Partial Containment or Release of Probable Maximum Flood from Jacko Lake.....17.4-75

Table 17.4-22. Performance Ratings for Peterson Creek Diversion Alternatives.....17.4-79

Table 17.4-23. Performance Ratings for Product Transportation Alternatives .....17.4-83

Table 17.4-24. Environmental Acceptability of Highway Interchange Alternatives .....17.4-89

Table 17.4-25. Performance Ratings for Explosives Facility Location Alternatives.....17.4-90

Table 17.4-26. Performance Ratings for Blasting Schedule Alternatives.....	17.4-92
Table 17.4-27. Technical and Economic Feasibility Ratings for Power Supply Alternatives .....	17.4-95
Table 17.4-28. Environmental Acceptability Ratings for Power Supply Alternatives.....	17.4-97
Table 17.5-1. Ajax Project Regional and Project Precipitation Values (mm).....	17.5-5
Table 17.5-2. Ajax Project Regional Extreme Daily Precipitation Values (mm) .....	17.5-6
Table 17.5-3. Precipitation-related Risks and Mitigation Measures.....	17.5-8
Table 17.5-4. Ajax Project Regional and Project Air Temperature Values (°C) .....	17.5-9
Table 17.5-5. Ajax Project Regional Extreme Air Temperature Values (°C).....	17.5-10
Table 17.5-6. Air Temperature-related Risks and Mitigation Measures.....	17.5-13
Table 17.5-7. Mean Monthly Discharge at Water Survey of Canada Stations in the Baseline Study Area.....	17.5-15
Table 17.5-8. Regional Analysis of Return Period Streamflow at the JACINF Gauging Station .....	17.5-16
Table 17.5-9. Instantaneous Peak Flow Return Periods for the JACINF Gauging Station.....	17.5-17
Table 17.5-10. Streamflow-related Risks and Mitigation Measures.....	17.5-19
Table 17.5-11. Natural Disturbance Types in the Local Study Area and Fire Return Intervals ...	17.5-22
Table 17.5-12. Fire Occurrences for Each Decade by Cause in the Local Study Area and Regional Study Area .....	17.5-23
Table 17.5-13. Exceedance Probability and Peak Ground Acceleration for Seismic Events at the Project .....	17.5-30
Table 17.5-14. Potential Project Component Sensitivities Arising from Climate Change.....	17.5-35
Table 17.6-1. KAM Project FMEA Workshop Participants.....	17.6-4
Table 17.6-2. Severity of Consequence Definitions .....	17.6-6
Table 17.6-3. Likelihood Rating Criteria .....	17.6-6
Table 17.6-4. FMEA Risk Matrix .....	17.6-7
Table 17.6-5. Environmental Risk Distribution within the FMEA Risk Matrix.....	17.6-8
Table 17.6-6 Screening Study for Potential Dam Failure Scenarios .....	17.6-65
Table 17.6-7. Valued Component Interaction Matrix with Potential Dam Breach Scenarios (Case #1 and Case #5).....	17.6-72
Table 17.11-1. Aboriginal Groups Consultation Requirements.....	17.11-1

Table 17.11-2. Summary of Project and Cumulative Residual Effects, Mitigation, and Significance for Current Use of Lands and Resource Use for Traditional Purposes .....17.11-4

Table 17.11-3. Residual Effects and Mitigation for Other Aboriginal Interests of SSN.....17.11-5

Table 17.11-4. Other Interests and Concerns Expressed by AIB.....17.11-7

Table 17.11-5. Other Interests and Concerns Expressed by LNIB.....17.11-7

Table 17.11-6. Other Interests and Concerns Expressed by WP/CIB.....17.11-8

Table 17.11-7. Other Interests and Concerns Expressed by MNBC.....17.11-9

Table 17.13-1. Temporal Boundaries for the Capacity of Renewable Resources Assessment.....17.13-2

Table 17.13-2. Summary of Residual Effects on Renewable Resources.....17.13-3

Table 17.13-3. Summary of Residual Effects on Jacko Lake Groundwater Balance .....17.13-6

Table 17.13-4. Summary of Residual Effects on Local Groundwater Balance and Groundwater Levels .....17.13-6

Table 17.13-5. Summary of Residual Effects on Fish and Fish Habitat .....17.13-8

Table 17.13-6. Summary of Residual Effects on Rare and Sensitive Ecosystems .....17.13-8

Table 17.13-7. Summary of Residual Effects on Grasslands .....17.13-9

Table 17.13-8. Summary of Residual Effects on Migratory Birds.....17.13-10

Table 17.13-9. Effects of Ajax Project on the Capacity of Renewable Resources.....17.13-11

Table 18.2-1. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Environmental .....18-3

Table 18.2-2. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Economic .....18-12

Table 18.2-3. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Social .....18-14

Table 18.2-4. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Heritage .....18-19

Table 18.2-5. Summary of Residual Project and Cumulative Effects and Mitigation Measures: Health.....18-20

Table 18.4-1. Table of Commitments.....18-43

## LIST OF PLATES

Plate 3.17-1. Soil profile showing A/B horizon and calcareous (pale) C horizon.....	3-91
Plate 3.17-2. Re-vegetation on Afton Mine rock storage facility (looking south from Afton pit) .....	3-100
Plate 8.3-1a. Existing view of the Project site from Viewpoint 15 (Lower Rose Hill Road).....	8.3-33
Plate 8.3-1b. View of the Project site from Viewpoint 15 (Lower Rose Hill Road) during the Operations Phase (Year 15).....	8.3-33
Plate 8.3-1c. View of the Project site from Viewpoint 15 (Lower Rose Hill Road) during the Post Closure Phase. ....	8.3-33
Plate 8.3-2a. Existing view of the Project site from Viewpoint 16 (Beresford Road). ....	8.3-35
Plate 8.3-2b. View of the Project site from Viewpoint 16 (Beresford Road) during the Operations Phase (Year 15).....	8.3-35
Plate 8.3-2c. View of the Project site from Viewpoint 16 (Beresford Road) during the Post Closure Phase.....	8.3-35
Plate 8.3-3a. Existing view of the Project site from Viewpoint 17 (Edith Lake Road). ....	8.3-37
Plate 8.3-3b. View of the Project site from Viewpoint 17 (Edith Lake Road) during the Operations Phase (Year 15).....	8.3-37
Plate 8.3-3c. View of the Project site from Viewpoint 17 (Edith Lake Road) during the Post Closure Phase.....	8.3-37
Plate 8.3-4a. Existing view of the Project site from Viewpoint 24 (Coquihalla Highway 1).....	8.3-39
Plate 8.3-4b. View of the Project site from Viewpoint 24 (Coquihalla Highway 1) during the Operations Phase (Year 15).....	8.3-39
Plate 8.3-4c. View of the Project site from Viewpoint 24 (Coquihalla Highway 1) during the Post Closure Phase. ....	8.3-39
Plate 8.3-5a. Existing view of the Project site from Viewpoint 33 (Coal Hill).....	8.3-41
Plate 8.3-5b. View of the Project site from Viewpoint 33 (Coal Hill) during the Operations Phase (Year 15).....	8.3-41
Plate 8.3-5c. View of the Project site from Viewpoint 33 (Coal Hill) during the Post Closure Phase.....	8.3-41
Plate 8.3-6a. Existing view of the Project site from Viewpoint 35 (Jacko Lake Boat Launch). ....	8.3-43
Plate 8.3-6b. View of the Project site from Viewpoint 35 (Jacko Lake Boat Launch) during the Operations Phase (Year 15). ....	8.3-43

Plate 8.3-6c. View of the Project site from Viewpoint 35 (Jacko Lake Boat Launch) during the Post Closure Phase..... 8.3-43

Plate 8.3-7a. Existing view of the Project site from Viewpoint 37 (Lac Le Jeune Road 1)..... 8.3-45

Plate 8.3-7b. View of the Project site from Viewpoint 37 (Lac Le Jeune Road 1) during the Operations Phase (Year 15)..... 8.3-45

Plate 8.3-7c. View of the Project site from Viewpoint 37 (Lac Le Jeune Road 1) during the Post Closure Phase. .... 8.3-45

Plate 8.3-8a. Existing view of Project site from Viewpoint 6 (McGowen Elementary). .... 8.3-47

Plate 8.3-8b. View of Project site from Viewpoint 6 (McGowen Elementary) during the Operations (Year 15) and Post Closure Phases. .... 8.3-47

Plate 8.7-1. Plan of Jacko Lake as Controlled by Present Dam, 1913. .... 8.7-6

Plate 8.7-2. Jacko Lake in 1950..... 8.7-7

Plate 8.7-3. Jacko Lake in 1953..... 8.7-7

Plate 8.7-4. Jacko Lake in 1978..... 8.7-8

Plate 11.7-1. Jacko Lake outflow control structure. .... 11.7-20

Plate 12.2-1. Jacko Lake (view from access road looking southwest) ..... 12-26

Plate 12.2-2. Peterson Creek (view from discharge of Jacko Lake looking east) ..... 12-27

Plate 12.2-3. Goose Lake (view from Goose Lake Road looking east)..... 12-28

Plate 17.4-1. Pit Shell Extents..... 17.4-13

*LIST OF APPENDICES*

Appendix 3-A Ajax Geochemical Characterization Study

Appendix 3-B Geochemical Source Terms for Ajax Mine Components

Appendix 3-C Ajax Project Open Pit Geotechnical Slope Design Parameters

Appendix 3-D Tailings Storage Facility Design Report

Appendix 3-E Baseline Soil Characterization Study

Appendix 3-F Jacko Lake and Peterson Creek Downstream Pond Engineering - Preliminary Design

Appendix 3-G Ajax Pit Lake Model Report

Appendix 3-H Baseline Vegetation Characterization Study

Appendix 3-I Geotechnical Report – Mine Site Infrastructure

Appendix 4.7-A	KAM Public Consultation Plans
Appendix 4.7-B	Community Sponsorships, Donations
Appendix 4.7-C	Record of Public Consultation
Appendix 4.7-D	Site Tour Material
Appendix 4.7-E	Informational Materials
Appendix 4.7-F	Information Sessions
Appendix 4.7-G	Comment/Response Tables
Appendix 4.7-H	Small Group Sessions
Appendix 4.7-I	Record of Media
Appendix 4.7-J	Record of Engagement with Knutsford Landowners
Appendix 4.7-K	Advertising (Including Public Event Notifications)
Appendix 4.7-L	Open Houses Informational Material
Appendix 4.7-M	Issues Tracking Tables
Appendix 4.7-N	KPHE Letters
Appendix 4.7-O	Polling Results
Appendix 4.7-P	Ajax Project Models
Appendix 4.7-Q	Blog Posts
Appendix 6.1-A	2014 Climatology Report
Appendix 6.1-B	Greenhouse Gas Emission Inventory Summary for KGHM Ajax Mine
Appendix 6.2-A	Baseline Report – Geology, Landforms and Soils
Appendix 6.2-B	Edith Lake Fault Zone Investigation and Characterization
Appendix 6.2-C	Ajax Project Open Pit – Review of Open Pit Design Parameters for Updated Hydrogeological Conditions
Appendix 6.2-D	Assessment of the Potential Influence of Production Blasting on Slope Stability in the Aberdeen Hills Area
Appendix 6.2-E	Afton Tailings Impoundment - Seismic Hazard and Seismic Stability Assessment
Appendix 6.3-A	Baseline Water Quality Report
Appendix 6.3-B	Testing in Support of Development of a Science Based Environmental Benchmark for Sulphate for the Ajax Mine

Appendix 6.3-C	Water Quality Model Report
Appendix 6.3-D	Derivation of Protective Water Quality Benchmarks
Appendix 6.3-E	Chromium Speciation in Mine Produced Dust
Appendix 6.4-A	2012 Hydrometeorology Report
Appendix 6.4-B	Baseline Hydrology Report – 2014 Streamflow Monitoring
Appendix 6.4-C	Ajax Project Water Balance Model
Appendix 6.5-A	Plume Migration Analyses to RES-2
Appendix 6.5-B	Groundwater Quality Predictions for RES-2 – Guideline Comparison Tables
Appendix 6.6-A	Baseline Groundwater Hydrology Assessment
Appendix 6.6-B	Ajax South Groundwater and Surface Water Site Investigations
Appendix 6.6-C	Peterson Creek Aquifer Pumping Test
Appendix 6.6-D	Numerical Groundwater Flow Model
Appendix 6.6-E	Groundwater Quantity Drawings
Appendix 6.6-F	Aquifer Compressibility below TSF and MRSF
Appendix 6.7-A	Ajax Project Baseline Fisheries Report (2013)
Appendix 6.7-B	2014 Fish and Aquatic Baseline Report Update
Appendix 6.7-C	Conceptual Fish Habitat Offsetting Plan
Appendix 6.7-D	Peterson Creek Instream Flow Requirements for Rainbow Trout – Preliminary Data Summary
Appendix 6.7-E	Thompson River Hydrologic and Hydraulic Impacts
Appendix 6.7-F	Peterson Creek Water Temperature Effects due to Pipeline Diversion
Appendix 6.8-A	Terrestrial Wildlife and Vegetation Baseline Report
Appendix 7.1-A	Socio-economic Baseline Report
Appendix 7.1-B	Technical Memorandum on the Statistics Canada Input-Output Model
Appendix 8.1-A	Ajax Mine Traffic Impact Assessment
Appendix 8.2-A	Baseline Report on Dark Sky
Appendix 8.3-A	Baseline Report on Visual Impact and Aesthetic Features Including Shading
Appendix 9.1-A	Ajax Project: Archaeological Baseline Report
Appendix 9.2-A	Ajax Project: Heritage Baseline

Appendix 9.2-B	Ajax Project: Paleontological Baseline
Appendix 10.1-A	Air Quality Technical Data Report
Appendix 10.4-A	Human Health and Ecological Risk Assessment Technical Data Report
Appendix 10.5-A	Noise and Vibration Technical Data Report
Appendix 11.26-A	Wildlife Habitat Objectives for Reclamation Plan
Appendix 11.27-A	Wetland Compensation Plan
Appendix 15-A	Summary of Communication with Aboriginal Groups
Appendix 15-B	Aboriginal Groups Issues Tracking Tables
Appendix 15-C	First Nations Consultation Plan
Appendix 15-D	Comments Received on the First Nation Consultation Plan
Appendix 15-E	First Nations Consultation Report
Appendix 15-F	Community Presentations and Consultation Materials
Appendix 17.4-A	Tailings Management, High-Level Tailings Alternatives Assessment
Appendix 17.4-B	Tailings Disposal Best Available Technology Assessment
Appendix 17.4-C	Tailings Storage Facility Conceptual Closure Plan Alternatives Assessment
Appendix 17.4-D	Peterson Creek Diversion Alternatives Assessment
Appendix 17.4-E	Jacko Lake and Downstream Pond Alternatives Assessment
Appendix 17.4-F	Inks Lake Interchange, Concepts and Evaluation
Appendix 17.4-G	Energy Trade-Off Study
Appendix 17.6-A	Summary of Failure Mode and Effects Analysis (FMEA) Workshop, February 2015
Appendix 17.6-B	Ajax Mine: Tailings Dam Failure Modes Assessment and Dam Breach Inundation Evaluation