

TABLE OF CONTENTS

	<u>Page</u>
PLAIN LANGUAGE SUMMARY	PLS-1
1.0 INTRODUCTION	1-1
1.1 Project Overview and Background	1-1
1.2 Purpose of the Project	1-2
1.3 Project Need and Justification.....	1-2
1.4 Regional Setting	1-3
1.5 Regulatory and Planning Context.....	1-6
1.6 Roles of the Federal and Provincial Government Agencies in Carrying out the CEA Act	1-10
1.7 Roles of the First Nations in Carrying out the CEA Act.....	1-12
1.8 Roles of Non-Aboriginal Communities.....	1-13
1.9 Scope and Timing of the Environmental Assessment	1-13
1.10 Spatial and Temporal Boundaries	1-16
1.11 Report Organization and Structure.....	1-17
2.0 PROJECT DESCRIPTION	2-1
2.1 Mining	2-1
2.1.1 Site Preparation.....	2-1
2.1.2 Open Pit Dewatering	2-2
2.1.3 Mining Activities.....	2-3
2.1.4 Ore and Mine Rock Geochemistry	2-3
2.1.5 Stockpiles	2-5
2.1.6 Mine Water Characteristics, Management and Disposal.....	2-6
2.1.7 Air and Noise Emissions.....	2-8
2.2 Processing	2-8
2.2.1 Crushing and Screening	2-8
2.2.2 Dense Media Separation	2-8
2.2.3 X-ray and Laser Sorting.....	2-9
2.2.4 Water Balance and Management	2-9
2.2.5 Spill Control.....	2-9
2.2.6 Air and Noise Emissions.....	2-10
2.3 Processed Kimberlite Management	2-10
2.3.1 Processed Kimberlite Characteristics	2-10
2.3.2 PK Storage and Water Management	2-10
2.3.2.1 Fine PK.....	2-10
2.3.2.2 Coarse PK Stockpile.....	2-12
2.4 Victor Site Infrastructure.....	2-12
2.4.1 Aggregate Sources.....	2-12
2.4.1.1 Quarries.....	2-12
2.4.1.2 Esker Pit.....	2-13
2.4.2 Buildings and Yard Areas	2-13
2.4.3 All-season Roads	2-14
2.4.4 All-season Airstrip.....	2-15

TABLE OF CONTENTS

	<u>Page</u>
2.4.5	Drainage Works.....2-16
2.4.5.1	South Granny Creek Diversion2-16
2.4.5.2	Other Drainage Works.....2-16
2.4.6	Fuel and Related Liquids Storage and Management2-16
2.4.6.1	Diesel2-16
2.4.6.2	Other Fuels and Related Liquids2-17
2.4.7	Power Supply2-18
2.4.8	Water Requirements and Supply2-19
2.4.8.1	Water Requirements.....2-19
2.4.8.2	Water Supply.....2-19
2.4.8.3	Water Treatment.....2-20
2.4.9	Explosives Manufacture and Handling.....2-20
2.4.10	Reagent Storage and Handling.....2-20
2.4.11	Domestic Sewage Treatment and Disposal2-21
2.4.12	Waste Management2-21
2.4.12.1	Domestic Waste2-21
2.4.12.2	Special Management Waste2-22
2.5	Winter Roads2-22
2.6	Transmission Line System2-24
2.7	Barge Transport System2-25
2.8	Attawapiskat Area Facilities2-25
2.9	Construction Phase.....2-27
2.9.1	Summary of Activities2-27
2.9.2	Project Infrastructure2-27
2.10	Closure Phase2-29
2.10.1	Open Pit2-29
2.10.2	Buildings, Machinery, Equipment and Infrastructure2-30
2.10.3	Roads, Airstrip, Pipelines and Power Lines2-30
2.10.4	Petroleum Products, Chemicals and Explosives2-30
2.10.5	Contaminated Soil2-31
2.10.6	Ponds and other Water Structures.....2-31
2.10.7	Fine PKC Facility.....2-31
2.10.8	Low Grade Ore, Mine Rock, Overburden and Muskeg Stockpiles2-31
2.10.9	Aggregate Sources.....2-32
2.10.10	Waste Management2-32
2.10.11	Site Drainage.....2-32
2.10.12	Attawapiskat Facilities2-32
2.10.13	Revegetation2-33
2.10.14	Schedule2-33
2.10.15	Landscape After Closure2-33
2.11	Labour Force and Service Requirements.....2-33
2.11.1	Construction Labour Force2-33
2.11.2	Operations Labour Force.....2-34
2.11.3	Training2-35
2.11.4	Suppliers2-36

TABLE OF CONTENTS

	<u>Page</u>
2.11.5 Impact Benefit Agreement	2-36
2.11.5.1 Attawapiskat First Nation	2-36
2.11.5.2 Other Affected First Nations.....	2-36
3.0 EVALUATION OF ALTERNATIVES	3-1
3.1 Alternatives Assessment Methodology.....	3-1
3.2 Project Alternatives	3-4
3.3 Project Schedule	3-5
3.3.1 Project Schedule Alternatives	3-5
3.3.2 Work Scheduling	3-6
3.3.2.1 Alternatives.....	3-6
3.3.2.2 Performance Objectives and Evaluation	3-6
3.4 Mining Operations	3-7
3.4.1 General Considerations.....	3-7
3.4.2 Mining Methods	3-7
3.4.2.1 Alternatives.....	3-7
3.4.2.2 Performance Objectives and Evaluation	3-8
3.4.3 Mine Production Rates	3-9
3.4.3.1 Alternatives.....	3-9
3.4.3.2 Performance Objectives and Evaluation	3-10
3.4.4 Overburden and Mine Rock Removal and Disposal.....	3-10
3.4.5 Groundwater Control	3-11
3.4.5.1 Alternatives.....	3-11
3.4.5.2 Performance Objectives and Evaluation	3-12
3.4.6 Mine Water Management and Disposal (Well Field Water).....	3-14
3.4.6.1 Alternatives.....	3-14
3.4.6.2 Performance Objectives and Evaluation	3-16
3.4.7 Mine Water Management and Disposal (Pit Sump Water).....	3-17
3.4.7.1 Alternatives.....	3-17
3.4.7.2 Performance Objectives and Evaluation	3-18
3.4.8 Control of Air and Noise Emissions	3-19
3.5 Ore Processing - Wastewater Management.....	3-19
3.5.1 Plant Wastewater Management.....	3-19
3.5.1.1 Alternatives.....	3-19
3.5.1.2 Performance Objectives and Evaluation	3-20
3.6 Fine Processed Kimberlite Management.....	3-21
3.6.1 General Considerations.....	3-21
3.6.2 PKC Design (Initial Phase)	3-21
3.6.2.1 Alternatives.....	3-21
3.6.2.2 Performance Objectives and Evaluation	3-22
3.6.3 PKC Design (Later Phases).....	3-23
3.6.3.1 Alternatives.....	3-23
3.6.3.2 Performance Objectives and Evaluation	3-23

TABLE OF CONTENTS

	<u>Page</u>
3.6.4	PKC Effluent Management3-25
3.6.4.1	Alternatives.....3-25
3.6.4.2	Performance Objectives and Evaluation3-25
3.7	Coarse PK Storage3-26
3.8	On-site Infrastructure3-27
3.8.1	General Considerations.....3-27
3.8.2	Aggregate Sources.....3-27
3.8.2.1	Performance Objectives and Evaluation Criteria.....3-28
3.8.3	Buildings, Yards, and Access Roads3-29
3.8.4	Airstrip3-30
3.8.5	Drainage Works – South Granny Creek Diversion3-30
3.8.5.1	Alternatives.....3-31
3.8.5.2	Performance Objectives and Evaluation Criteria.....3-31
3.8.6	Water Supply Systems3-32
3.8.7	Explosives Manufacture.....3-33
3.8.8	Domestic Sewage Handling.....3-33
3.8.9	Solid Waste Disposal.....3-34
3.8.9.1	Alternatives (Non-hazardous Waste)3-34
3.8.9.2	Performance Objectives and Evaluation3-35
3.9	Off-site Infrastructure – Access and Power3-37
3.9.1	General Considerations.....3-37
3.9.2	Alternatives.....3-37
3.9.3	Performance Objectives and Evaluation3-41
3.9.3.1	Cost-effectiveness3-41
3.9.3.2	Technical Applicability3-42
3.9.3.3	Ability to Service the Site Effectively3-42
3.9.3.4	Minimize Effects to the Natural Environment3-43
3.9.3.5	Minimize Adverse Effects to the Socio-economic Environment3-46
3.9.3.6	Amenability to Reclamation3-49
3.9.3.7	Selected Alternative.....3-50
3.10	Reclamation3-50
3.10.1	General Considerations.....3-50
3.10.2	Open Pit3-50
3.10.2.1	Alternatives.....3-50
3.10.2.2	Performance Objectives and Evaluation3-51
3.10.3	Demolition Wastes.....3-52
3.10.3.1	Alternatives.....3-52
3.10.3.2	Performance Objectives and Evaluation3-53
3.10.4	Stockpiles.....3-54
3.10.5	Infrastructure3-54
3.10.6	Site Drainage.....3-54

TABLE OF CONTENTS

	<u>Page</u>
4.0 PUBLIC CONSULTATION.....	4-1
4.1 Environmental Assessment – Pre-consultation, Guidelines and Public Registry	4-1
4.1.1 Federal Government Consultation Preceding Guidelines.....	4-1
4.1.2 Environmental Assessment Guidelines Review	4-2
4.1.3 Public Registry	4-2
4.1.4 De Beers Pre-consultation with Attawapiskat.....	4-3
4.1.5 De Beers’ Pre-consultation with Other Communities	4-4
4.2 EA Consultation	4-4
4.2.1 Government Consultations	4-4
4.2.2 Issues and Concerns Raised During the CSEA Public Review	4-5
4.2.3 De Beers Public Consultation Program.....	4-8
4.2.4 De Beers Public Consultation Sessions.....	4-8
4.3 Traditional Knowledge	4-13
4.3.1 Formal TEK Collection by the Victor Project TEK Working Group.....	4-13
4.3.2 Informal TEK Collection from Attawapiskat.....	4-14
4.3.3 Collection of TEK for the Southwest Alternate Winter Road.....	4-15
4.3.4 Collection of TEK for the Coastal Transmission Line	4-15
4.4 Aboriginal Comments/Concerns.....	4-16
4.4.1 Attawapiskat.....	4-16
4.4.2 Kashechewan.....	4-17
4.4.3 Fort Albany.....	4-17
4.4.4 Moose Factory (Moose Cree First Nation).....	4-18
4.4.5 MoCreebec.....	4-19
4.4.6 Mushkegowuk Council.....	4-19
4.5 Non-Aboriginal Communities and Moosonee	4-20
5.0 DESCRIPTION OF THE EXISTING ENVIRONMENT	5-1
5.1 Data Collection Methods and Tools – Natural Environment	5-1
5.2 Data Collection Methods and Tools – Socio-economic Environment.....	5-3
5.3 Valued Ecosystem Components (VECs) – Natural Environment.....	5-7
5.3.1 Definition and Criteria	5-7
5.3.2 Atmospheric Systems.....	5-8
5.3.3 Geological Systems.....	5-8
5.3.4 Surface Water Systems.....	5-9
5.3.4.1 Selected VECs	5-9
5.3.4.2 Hydrology	5-9
5.3.4.3 Water Quality.....	5-10
5.3.4.4 Fisheries Resources.....	5-11
5.3.5 Groundwater Systems.....	5-15
5.3.5.1 Selected VECs	5-15
5.3.5.2 General Considerations	5-15
5.3.5.3 Groundwater Flow Modelling	5-16
5.3.5.4 Groundwater Quality.....	5-16

TABLE OF CONTENTS

	<u>Page</u>
5.3.6	Terrestrial Environment5-17
5.3.6.1	Selected VECs5-17
5.3.6.2	Vegetation Communities.....5-17
5.3.6.3	Wildlife.....5-19
5.3.7	West James Bay Coast Zone5-22
5.3.7.1	Selected VECs5-22
5.3.7.2	Coastal Zone Vegetation Communities.....5-23
5.3.7.3	Coastal Wildlife Focusing on Waterfowl and Shorebirds ...5-23
5.3.8	James Bay Marine Environment.....5-24
5.3.8.1	Selected VECs5-24
5.3.8.2	Marine Coastal Environment.....5-24
5.3.8.3	Marine Mammals (including Polar Bears)5-24
5.3.8.4	Migratory Birds Focusing on Waterfowl, Shorebirds, Seabirds5-25
5.3.9	Natural Heritage Systems.....5-25
5.4	Potential Environmental Hazards to the Victor Diamond Project5-27
5.5	Valued Ecosystem Components (VECs) - Socio-economic Environment.....5-28
5.5.1	Definition and Criteria5-28
5.5.2	Attawapiskat.....5-29
5.5.3	Other James Bay Coastal Cree Communities.....5-35
5.5.4	James Bay Lowlands Interior First Nation Communities5-38
5.5.5	Non-Aboriginal Communities5-38
5.5.6	Recreation and Aesthetics.....5-39
5.5.7	Socio-economic Environment – Sensitivities and Constraints5-39
5.6	VEC Summary5-41
6.0	ENVIRONMENTAL EFFECTS ANALYSIS – NATURAL ENVIRONMENT 6-1
6.1	Approach 6-1
6.1.1	Overview of Effects Analysis 6-1
6.1.2	Analytical Methods and Tools 6-2
6.1.3	Utilization of Scientific and Traditional Ecological Knowledge 6-2
6.1.4	Significance Analysis 6-3
6.2	Atmospheric Systems 6-7
6.2.1	Air Quality..... 6-7
6.2.1.1	Environmental Effects..... 6-7
6.2.1.1.1	General Air Emissions 6-7
6.2.1.1.2	Noise6-10
6.2.1.1.3	Greenhouse Gas Emissions6-11
6.2.1.2	Mitigation6-13
6.2.1.2.1	General Air Emissions6-13
6.2.1.2.2	Noise6-13
6.2.1.2.3	Greenhouse Gas Emissions6-13

TABLE OF CONTENTS

	<u>Page</u>
6.2.1.3	Significance6-14
6.2.1.3.1	General Air Emissions6-14
6.2.1.3.2	Noise6-14
6.2.1.3.3	Greenhouse Gas Emissions6-14
6.2.1.4	Comments/Concerns6-14
6.2.1.4.1	General Air Emissions6-14
6.2.1.4.2	Noise6-15
6.2.1.4.3	Greenhouse Gas Emissions6-15
6.2.1.5	Proponent's Response6-16
6.2.1.5.1	General Air Emissions6-16
6.2.1.5.2	Noise6-17
6.2.1.5.3	Greenhouse Gas Emissions6-18
6.2.1.6	RA Conclusions6-18
6.2.1.6.1	General Air Emissions6-18
6.2.1.6.2	Noise6-18
6.2.1.6.3	Greenhouse Gas Emissions6-18
6.3	Geological Systems6-19
6.4	Surface Water Systems6-19
6.4.1	Attawapiskat River and its Tributaries6-19
6.4.1.1	Environmental Effects6-19
6.4.1.1.1	Hydrology6-19
6.4.1.1.2	Water Quality6-20
6.4.1.1.3	Fisheries Resources6-24
6.4.1.2	Mitigation6-25
6.4.1.2.1	Hydrology6-25
6.4.1.2.2	Water Quality6-26
6.4.1.2.3	Fisheries Resources6-27
6.4.1.3	Significance6-28
6.4.1.3.1	Hydrology6-28
6.4.1.3.2	Water Quality6-28
6.4.1.3.3	Fisheries Resources6-28
6.4.1.4	Comments/Concerns6-29
6.4.1.4.1	Hydrology6-29
6.4.1.4.2	Water Quality6-29
6.4.1.4.3	Fisheries Resources6-29
6.4.1.5	Proponent's Response6-30
6.4.1.5.1	Hydrology6-30
6.4.1.5.2	Water Quality6-30
6.4.1.5.3	Fisheries Resources6-31
6.4.1.6	RA Conclusions6-31
6.4.2	Nayshkootayaow River and Its Tributaries6-31
6.4.2.1	Environmental Effects6-31
6.4.2.1.1	Hydrology6-31
6.4.2.1.2	Water Quality6-32
6.4.2.1.3	Fisheries Resources6-34

TABLE OF CONTENTS

	<u>Page</u>
6.4.2.2 Mitigation	6-34
6.4.2.2.1 Hydrology	6-34
6.4.2.2.2 Water Quality	6-36
6.4.2.2.3 Fisheries Resources	6-36
6.4.2.3 Significance	6-36
6.4.2.3.1 Hydrology	6-36
6.4.2.3.2 Water Quality	6-37
6.4.2.3.3 Fisheries Resources	6-37
6.4.2.4 Comments/Concerns	6-37
6.4.2.4.1 Hydrology	6-37
6.4.2.4.2 Water Quality	6-38
6.4.2.4.3 Fisheries Resources	6-38
6.4.2.5 Proponent's Response	6-39
6.4.2.5.1 Hydrology	6-39
6.4.2.5.2 Water Quality	6-39
6.4.2.5.3 Fisheries Resources	6-40
6.4.2.6 RA Conclusions	6-43
6.4.3 Granny Creek System	6-43
6.4.3.1 Environmental Effects	6-43
6.4.3.1.1 Hydrology	6-43
6.4.3.1.2 Water Quality	6-46
6.4.3.1.3 Fisheries Resources	6-50
6.4.3.1.4 Discharge of Water During Construction	6-50
6.4.3.1.5 Discharge from the Landfill	6-50
6.4.3.2 Mitigation	6-51
6.4.3.2.1 Hydrology	6-51
6.4.3.2.2 Water Quality	6-52
6.4.3.2.3 Fisheries Resources	6-53
6.4.3.3 Significance	6-53
6.4.3.3.1 Hydrology	6-53
6.4.3.3.2 Water Quality	6-54
6.4.3.3.3 Fisheries Resources	6-54
6.4.3.4 Comments/Concerns	6-54
6.4.3.4.1 Hydrology	6-54
6.4.3.4.2 Water Quality	6-55
6.4.3.4.3 Fisheries Resources	6-55
6.4.3.5 Proponent's Response	6-56
6.4.3.5.1 Hydrology	6-56
6.4.3.5.2 Water Quality	6-57
6.4.3.5.3 Fisheries Resources	6-58
6.4.3.6 RA Conclusions	6-59
6.4.4 Lawashi River System	6-59
6.4.4.1 Environmental Effects	6-59
6.4.4.2 Mitigation	6-60
6.4.4.3 Significance	6-60
6.4.4.4 Comments/Concerns	6-60
6.4.4.5 Proponent's Response	6-60
6.4.4.6 RA Conclusions	6-60

TABLE OF CONTENTS

		<u>Page</u>
6.4.5	Rivers and Creeks Intersected by Winter Roads	6-60
6.4.5.1	Environmental Effects.....	6-60
6.4.5.2	Mitigation	6-61
6.4.5.3	Significance	6-61
6.4.5.4	Comments/Concerns.....	6-61
6.4.5.5	Proponent's Response	6-61
6.4.5.6	RA Conclusions.....	6-61
6.4.6	Muskeg Ponds	6-62
6.4.6.1	Environmental Effects.....	6-62
6.4.6.2	Mitigation	6-62
6.4.6.3	Significance.....	6-62
6.4.6.4	Comments/Concerns.....	6-62
6.4.6.5	Proponent's Response	6-63
6.4.6.6	RA Conclusions.....	6-63
6.5	Groundwater System	6-63
6.5.1	Shallow Overburden Aquifer.....	6-63
6.5.1.1	Environmental Effects.....	6-63
6.5.1.2	Mitigation	6-64
6.5.1.3	Significance	6-64
6.5.1.4	Comments/Concerns.....	6-65
6.5.1.5	Proponent's Response	6-65
6.5.1.6	RA Conclusions.....	6-66
6.5.2	Bedrock Aquifer	6-66
6.6	Terrestrial Environment	6-66
6.6.1	Vegetation Communities – Victor Site Area	6-66
6.6.1.1	Changes to Riverbank and Creek Margin Forests	6-67
6.6.1.1.1	Environmental Effects.....	6-67
6.6.1.1.2	Mitigation	6-69
6.6.1.1.3	Significance	6-69
6.6.1.1.4	Comments/Concerns.....	6-70
6.6.1.1.5	Proponent's Response.....	6-70
6.6.1.1.6	RA Conclusions.....	6-71
6.6.1.2	Changes to Northern Ribbed Fen with Broad Flark (Pool) Communities.....	6-71
6.6.1.2.1	Environmental Effects.....	6-71
6.6.1.2.2	Mitigation	6-72
6.6.1.2.3	Significance	6-73
6.6.1.2.4	Comments/Concerns.....	6-73
6.6.1.2.5	Proponent's Response.....	6-73
6.6.1.2.6	RA Conclusions	6-76

TABLE OF CONTENTS

	<u>Page</u>
6.6.1.3	Changes to Upland Sites6-76
6.6.1.3.1	Environmental Effects6-76
6.6.1.3.2	Mitigation6-77
6.6.1.3.3	Significance6-78
6.6.1.3.4	Comments/Concerns6-79
6.6.1.3.5	Proponent's Response.....6-79
6.6.1.3.6	RA Conclusions6-80
6.6.1.4	Changes to other Peatland Types.....6-80
6.6.1.4.1	Environmental Effects6-80
6.6.1.4.2	Mitigation6-80
6.6.1.4.3	Significance6-81
6.6.1.4.4	Comments/Concerns6-82
6.6.1.4.5	Proponent's Response.....6-82
6.6.1.4.6	RA Conclusions6-83
6.6.1.5	Vegetation Communities Associated with the Attawapiskat Barge Landing Facility6-83
6.6.2	Wildlife6-84
6.6.2.1	Moose and Caribou6-84
6.6.2.1.1	Environmental Effects6-88
6.6.2.1.2	Mitigation6-88
6.6.2.1.3	Significance6-91
6.6.2.1.4	Comments/Concerns6-91
6.6.2.1.5	Proponent's Response.....6-92
6.6.2.1.6	RA Conclusions6-95
6.6.2.2	Large Predators and Furbearers.....6-95
6.6.2.2.1	Environmental Effects6-95
6.6.2.2.2	Mitigation6-98
6.6.2.2.3	Significance6-99
6.6.2.2.4	Comments/Concerns6-100
6.6.2.2.5	Proponent's Response.....6-100
6.6.2.2.6	RA Conclusions6-101
6.6.2.3	Migratory Birds6-101
6.6.2.3.1	Environmental Effects6-101
6.6.2.3.2	Mitigation6-103
6.6.2.3.3	Significance6-104
6.6.2.3.4	Comments/Concerns6-104
6.6.2.3.5	Proponent's Response.....6-105
6.6.2.3.6	RA Conclusions6-106
6.7	Species at Risk - COSEWIC, SARA and COSSARO Species.....6-106
6.7.1	Significance6-107
6.7.2	RA Conclusions6-108

TABLE OF CONTENTS

	<u>Page</u>
6.8	Natural Heritage Systems6-108
6.8.1	Attawapiskat River Proposed Candidate Waterway Park (ARPCWP)6-108
6.8.1.1	Environmental Effects.....6-108
6.8.1.2	Mitigation6-109
6.8.1.3	Significance.....6-109
6.8.1.4	Comments/Concerns.....6-110
6.8.1.5	Proponent's Response6-110
6.8.1.6	RA Conclusions6-111
6.8.2	Areas of Natural and Scientific Interest (ANSIs)6-111
6.8.2.1	Environmental Effects.....6-111
6.8.2.2	Mitigation6-113
6.8.2.3	Significance6-114
6.8.2.4	Comments/Concerns.....6-114
6.8.2.5	Proponent's Response6-115
6.8.2.6	RA Conclusions6-116
6.8.3	Conservation and Nature Reserves6-116
6.8.3.1	Environmental Effects.....6-116
6.8.3.2	Mitigation6-117
6.8.3.3	Significance6-117
6.8.3.4	Comments/Concerns.....6-117
6.8.3.5	Proponent's Response6-117
6.8.3.6	RA Conclusion.....6-117
6.9	James Bay Coastal Zone6-117
6.9.1	Environmental Effects.....6-117
6.9.2	Mitigation6-120
6.9.3	Significance6-120
6.9.4	Comments/Concerns.....6-120
6.9.5	Proponent's Response6-121
6.9.6	RA Conclusion6-121
6.10	Effects of the Environment on the Project6-121
6.10.1	Winter Temperatures.....6-121
6.10.2	Flooding and Ice Scour.....6-123
6.10.3	Fire6-124
6.10.4	Increase Groundwater Flow Volumes and Salinities.....6-124
6.11	Malfunctions and Accidents6-125
6.11.1	Identification of Risks and Methodology.....6-125
6.11.2	Fuel Release During Truck Transport.....6-126
6.11.2.1	Potential Environmental Concerns.....6-126
6.11.2.2	Design and Operational Safeguards.....6-127
6.11.2.3	Contingency and Emergency Response Procedures.....6-127
6.11.2.4	RA Conclusion.....6-127

TABLE OF CONTENTS

	<u>Page</u>
6.11.3 Fuel Release from Storage Facilities and Dispensing Areas.....	6-128
6.11.3.1 Potential Environmental Concerns.....	6-128
6.11.3.2 Design and Operational Safeguards.....	6-128
6.11.3.3 Contingency and Emergency Response Procedures.....	6-129
6.11.3.4 RA Conclusion.....	6-129
6.11.4 Transportation Accident (Non-fuel Shipment).....	6-129
6.11.4.1 Potential Environmental Concerns.....	6-129
6.11.4.2 Design and Operational Safeguards.....	6-130
6.11.4.3 Contingency and Emergency Response Procedures.....	6-130
6.11.4.4 RA Conclusion.....	6-131
6.11.5 Open Pit Stability.....	6-131
6.11.5.1 Potential Environmental Concerns.....	6-132
6.11.5.2 Design and Operational Safeguards.....	6-132
6.11.5.3 Contingency and Emergency Response Procedures.....	6-132
6.11.5.4 RA Conclusion.....	6-133
6.11.6 Failure of the Nayshkootayaow River Flow Supplementation System.....	6-133
6.11.6.1 Potential Environmental Concerns.....	6-133
6.11.6.2 Design and Operational Safeguards.....	6-133
6.11.6.3 Contingency and Emergency Response Procedures.....	6-134
6.11.6.4 RA Conclusion.....	6-134
6.11.7 Explosives Accident.....	6-134
6.11.7.1 Potential Environmental Concerns.....	6-134
6.11.7.2 Design and Operational Safeguards.....	6-134
6.11.7.3 Contingency and Emergency Response Procedures.....	6-135
6.11.7.4 RA Conclusion.....	6-136
6.11.8 PK Pipeline Failure.....	6-136
6.11.8.1 Potential Environmental Concerns.....	6-136
6.11.8.2 Design and Operational Safeguards.....	6-136
6.11.8.3 Contingency and Emergency Response Procedures.....	6-137
6.11.8.4 RA Conclusion.....	6-137
6.11.9 PKC Dam Failure.....	6-137
6.11.9.1 Potential Environmental Concerns.....	6-137
6.11.9.2 Design and Operational Safeguards.....	6-138
6.11.9.3 Contingency and Emergency Response Procedures.....	6-138
6.11.9.4 RA Conclusion.....	6-138
6.11.10 Stockpile Slope Failure.....	6-138
6.11.10.1 RA Conclusions.....	6-139
6.11.11 Unexpected Water Quality Concerns.....	6-139
6.11.11.1 Potential Environmental Concerns.....	6-139
6.11.11.2 Design and Operational Safeguards.....	6-139
6.11.11.3 Contingency and Emergency Response Procedures.....	6-139
6.11.11.4 RA Conclusion.....	6-140

TABLE OF CONTENTS

	<u>Page</u>
6.11.12 Settling Pond Inefficiencies.....	6-140
6.11.12.1 Potential Environmental Concerns.....	6-140
6.11.12.2 Design and Operational Safeguards.....	6-140
6.11.12.3 Contingency and Emergency Response Procedures.....	6-140
6.11.12.4 RA Conclusion.....	6-140
6.11.13 Project Related Fires.....	6-141
6.11.13.1 Potential Environmental Concerns.....	6-141
6.11.13.2 Design and Operational Safeguards.....	6-141
6.11.13.3 Contingency and Emergency Response Procedures.....	6-141
6.11.13.4 RA Conclusion.....	6-141
6.11.14 Emergency Response Strategy.....	6-142
6.11.15 Environmental Management System.....	6-142
6.12 Cumulative Effects.....	6-143
6.13 Non-fettering of Federal or Provincial Governments' Abilities.....	6-151
7.0 ENVIRONMENTAL EFFECTS ANALYSIS – SOCIO-ECONOMIC ENVIRONMENT ..	7-1
7.1 Approach.....	7-1
7.1.1 Context.....	7-1
7.1.2 Criteria.....	7-1
7.1.3 Assessment of Significance.....	7-2
7.1.4 Mitigation.....	7-2
7.1.5 Comments/Concerns.....	7-2
7.1.6 Proponent's Response.....	7-3
7.2 Attawapiskat.....	7-4
7.2.1 Traditional Pursuits, Values and Skills.....	7-4
7.2.1.1 Effects.....	7-4
7.2.1.2 Mitigation.....	7-6
7.2.1.3 Significance.....	7-7
7.2.1.4 Comments/Concerns.....	7-7
7.2.1.5 Proponent's Response.....	7-8
7.2.1.6 RA Conclusions.....	7-9
7.2.2 Aboriginal Community – Physical Disturbance.....	7-9
7.2.2.1 Effects.....	7-9
7.2.2.2 Mitigation.....	7-9
7.2.2.3 Significance.....	7-9
7.2.2.4 Comments/Concerns.....	7-9
7.2.2.5 Proponent's Response.....	7-10
7.2.2.6 RA Conclusions.....	7-10
7.2.3 Health.....	7-10
7.2.3.1 Effects.....	7-10
7.2.3.2 Mitigation.....	7-11
7.2.3.3 Significance.....	7-11
7.2.3.4 Comments/Concerns.....	7-12
7.2.3.5 Proponent's Response.....	7-12
7.2.3.6 RA Conclusions.....	7-12

TABLE OF CONTENTS

		<u>Page</u>
7.2.4	Cultural Heritage Resources.....	7-13
	7.2.4.1 Effects	7-13
	7.2.4.2 Mitigation	7-13
	7.2.4.3 Significance	7-13
	7.2.4.4 Comments/Concerns.....	7-13
	7.2.4.5 Proponent's Response	7-13
	7.2.4.6 RA Conclusions.....	7-14
7.2.5	Physical Infrastructure	7-14
	7.2.5.1 Effects	7-14
	7.2.5.2 Mitigation	7-14
	7.2.5.3 Significance	7-14
	7.2.5.4 Comments/Concerns.....	7-15
	7.2.5.5 RA Conclusions.....	7-15
7.3	Other Affected Cree Communities	7-15
	7.3.1 Traditional Pursuits	7-15
	7.3.1.1 Effects	7-15
	7.3.1.2 Mitigation	7-16
	7.3.1.3 Significance	7-16
	7.3.1.4 Comments/Concerns and Proponent's Response	7-17
	7.3.1.5 RA Conclusions.....	7-17
	7.3.2 Health	7-17
	7.3.2.1 RAs Conclusion.....	7-18
7.4	Navigation	7-18
	7.4.1 Effects	7-18
	7.4.2 Mitigation	7-18
	7.4.3 Significance	7-19
	7.4.4 Comments/Concerns.....	7-20
	7.4.5 Proponent's Response	7-20
	7.4.6 RA Conclusions	7-20
7.5	Recreation and Aesthetics	7-20
	7.5.1 RA Conclusions	7-20
7.6	Effects on Sustainable Use of Renewable Resources.....	7-20
	7.6.1 Fisheries and Aquatic Resources, Hunting and Trapping	7-20
	7.6.1.1 Effects	7-21
	7.6.1.2 Mitigation	7-21
	7.6.1.3 Significance	7-21
	7.6.1.4 Comments/Concerns.....	7-21
	7.6.1.5 Proponent's Response	7-21
	7.6.2 Mining	7-22
	7.6.2.1 Effects	7-22
	7.6.2.2 Mitigation	7-22
	7.6.2.3 Significance	7-22
	7.6.2.4 Comments/Concerns.....	7-22
	7.6.2.5 Proponent's Response	7-22

TABLE OF CONTENTS

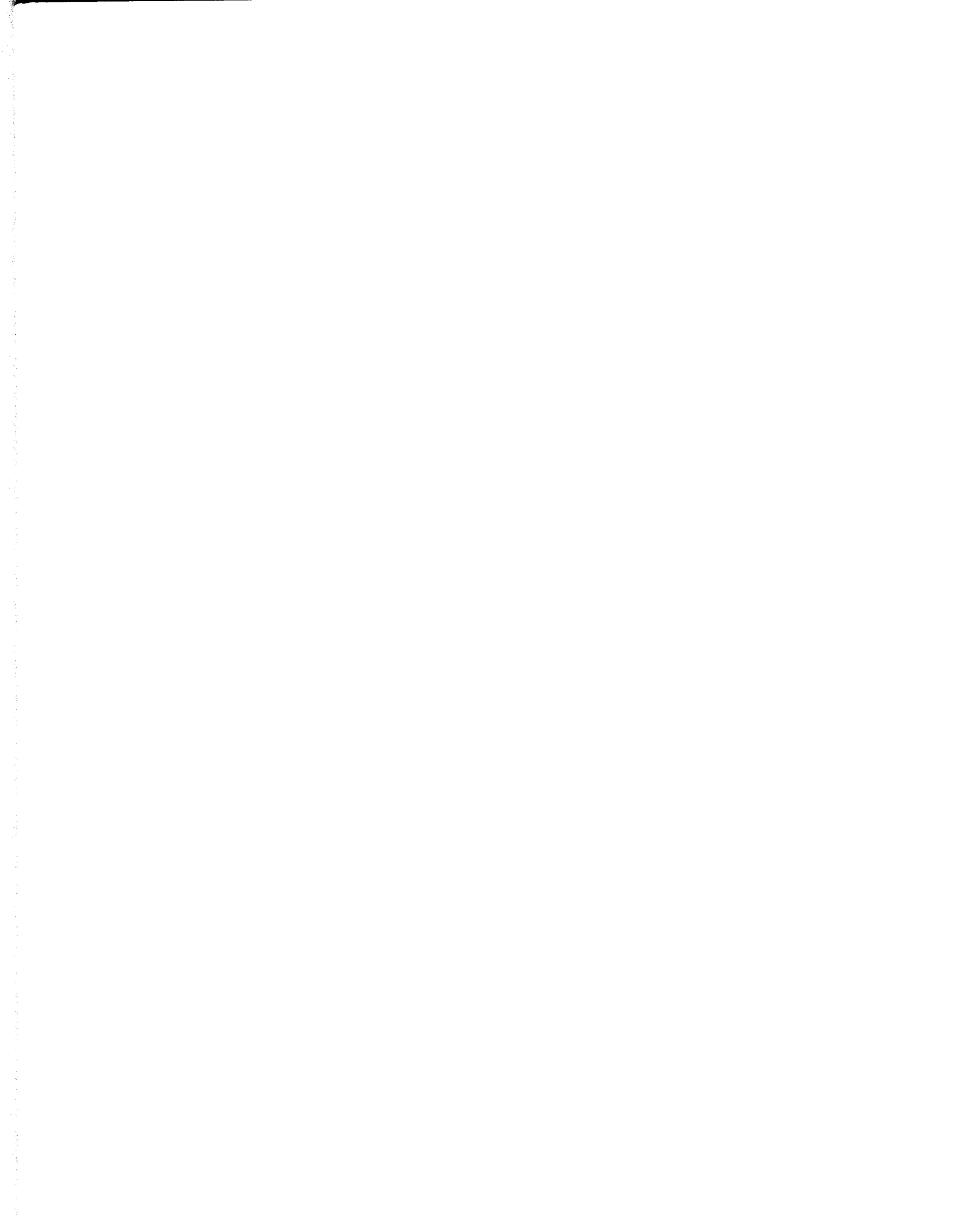
	<u>Page</u>
7.6.3 Forestry	7-22
7.6.3.1 Effects	7-23
7.6.3.2 Mitigation	7-23
7.6.3.3 Significance	7-23
7.6.3.4 Comments/Concerns	7-23
7.6.3.5 Proponent's Response	7-23
7.6.4 RA Conclusions	7-23
7.7 Cumulative Effects	7-24
7.7.1 Attawapiskat	7-24
7.7.1.1 Effects	7-24
7.7.1.2 Mitigation	7-24
7.7.1.3 Significance	7-24
7.7.2 Other James Bay Affected Cree Communities	7-26
7.7.2.1 Effects	7-26
7.7.2.2 Mitigation	7-26
7.7.2.3 Significance	7-26
7.7.3 RA Conclusions	7-26
8.0 FOLLOW-UP PROGRAMS	8-1
8.1 Air Quality	8-2
8.1.1 Context	8-2
8.1.2 Roles and Responsibilities of the Parties Involved	8-2
8.1.3 Objectives	8-3
8.1.4 Reporting Mechanisms	8-3
8.1.5 Methods for Measuring Effects	8-3
8.1.6 Adaptive Management Measures	8-4
8.2 Greenhouse Gas Emissions	8-4
8.2.1 Context	8-4
8.2.2 Objective	8-4
8.2.3 Reporting Mechanisms	8-4
8.2.4 Methods for Measuring Effects	8-4
8.2.5 Adaptive Management Measures	8-4
8.3 Groundwater, Surface Water, Fish and Fish Habitat	8-5
8.3.1 Context	8-5
8.3.2 Roles and Responsibilities of the Parties Involved	8-5
8.3.3 Objectives	8-6
8.3.4 Reporting Mechanisms	8-7
8.3.5 Methods for Measuring Effects	8-7
8.3.6 Adaptive Management Measures	8-9
8.4 Wetlands and Wildlife	8-9
8.4.1 Context	8-9
8.4.2 Objectives	8-10
8.4.3 Roles and Responsibilities of the Parties Involved	8-10
8.4.4 Reporting Mechanisms	8-11

TABLE OF CONTENTS

	<u>Page</u>
8.4.5	Wetland Water Levels8-11
8.4.5.1	Methods for Measuring Effects8-11
8.4.5.2	Adaptive Management.....8-11
8.4.6	Noise8-12
8.4.6.1	Methods for Measuring Effects8-12
8.4.6.2	Adaptive Management.....8-12
8.4.7	Vegetation8-12
8.4.7.1	Methods for Measuring Effects8-12
8.4.7.2	Adaptive Management.....8-13
8.4.8	Caribou and Moose8-13
8.4.8.1	Methods for Measuring Effects8-13
8.4.8.2	Adaptive Management.....8-14
8.4.9	Birds8-14
8.4.9.1	Methods for Measuring Effects8-14
8.4.9.2	Adaptive Management.....8-14
8.4.10	Other Wildlife8-15
8.4.10.1	Methods for Measuring Effects8-15
8.4.10.2	Adaptive Management.....8-15
8.5	Accidents and Malfunctions8-15
8.5.1	Context8-15
8.5.2	Objectives8-16
8.5.3	Roles and Responsibilities of the Parties Involved.....8-16
8.5.4	Reporting Mechanisms8-16
8.5.5	Methods for Measuring Effects8-16
8.5.6	Adaptive Management.....8-17
8.6	Traditional Pursuits, Values and Skills8-17
8.6.1	Context8-17
8.6.2	Roles and Responsibilities of the Parties Involved.....8-17
8.6.3	Objectives8-18
8.6.4	Reporting Mechanisms.....8-18
8.6.5	Methods for Measuring Effects8-18
8.6.6	Adaptive Management Measures8-19
8.7	Aboriginal Community - Physical Disturbance.....8-19
8.8	Health8-19
8.8.1	Context8-19
8.8.2	Roles and Responsibilities of the Parties Involved.....8-19
8.8.3	Objectives8-20
8.8.4	Reporting Mechanisms.....8-20
8.8.5	Methods for Measuring Effects8-20
8.8.6	Adaptive Management Mechanisms.....8-21

TABLE OF CONTENTS

	<u>Page</u>
8.9 Heritage Resources	8-21
8.9.1 Context	8-21
8.9.2 Roles and Responsibilities of the Parties Involved.....	8-21
8.9.3 Objectives	8-22
8.9.4 Reporting Mechanisms.....	8-22
8.9.5 Methods for Measuring Effects	8-22
8.9.6 Adaptive Management Mechanisms.....	8-22
8.10 Physical Infrastructure	8-23
8.10.1 Context	8-23
8.10.2 Roles and Responsibilities of the Parties Involved.....	8-23
8.10.3 Objectives	8-23
8.10.4 Reporting Mechanisms.....	8-24
8.10.5 Methods for Measuring Effects	8-24
8.10.6 Adaptive Management Mechanisms.....	8-24
8.11 Navigation	8-24
8.12 Recreation and Aesthetics	8-25
8.13 Effects on Sustainable Use of Renewable Resources.....	8-25
8.14 Cumulative Effects	8-25
9.0 SUMMARY AND CONCLUSIONS	9-1
9.1 Overview	9-1
9.2 Environmental Effects.....	9-2
9.3 Mitigation	9-3
9.4 Outstanding Issues	9-4
9.5 Follow-up	9-4
9.6 RA Conclusions	9-5
10.0 REFERENCES	10-1



7.7 Cumulative Effects

7.7.1 Attawapiskat

Potential cumulative effects involving socio-economic effects to Attawapiskat VECs are categorized as follows:

- Effect on traditional pursuits including continued and possibly accentuated cultural change; and,
- Change in community physical and social infrastructure.

7.7.1.1 Effects

Meaningful cumulative effects to traditional pursuits and to cultural and heritage resources due to other mineral projects are not anticipated, as there are no other projects in the area that are known to be economically viable.

With regard to the potential for more generalized cumulative effects involving cultural change and evolution, such changes are part of an ongoing process that is influenced by a number of factors including media, travel, and education. There is a general desire in the community to take advantage of the positive effects of the project such as training and employment. Training and employment will require proficiency in English potentially contributing to a decrease in Cree use.

The physical and social infrastructure will see no negative cumulative effect unless there is a dramatic net in-migration of AttFN members to the community. In-migration would place a cumulative effect on already stressed housing and social infrastructure. Based on experience with other mines such as Musselwhite, this consequence is deemed to be unlikely. With regard to the social infrastructure, the project will assist in increasing educational attainment and potentially create a reduced use of health and welfare services because of employment and the provision of health services at the Victor site.

Further details on cumulative effects are provided in Table 7-2.

7.7.1.2 Mitigation

The Proponent will offer cross-cultural training of all employees and provide a workplace environment that accommodates traditional pursuits.

7.7.1.3 Significance

Since there are no anticipated additional mines or development in the area, the project will have no cumulative effects of significance on the AttFN.

**TABLE 7-2
CUMULATIVE EFFECTS ASSESSMENT - SOCIO-ECONOMIC ENVIRONMENT**

Regional VECs	Spatial Boundaries	Temporal Boundaries	Other Actions or Potential Actions of Interest	Mitigation Required	Potential Cumulative Impact
Attawapiskat					
Traditional pursuits	PSA - community of Attawapiskat and associated traditional lands	Construction, operation and closure	Other mineral exploration in the region (no other projects currently economic)	No	Project development will disturb wildlife and wildlife habitat; restrictions on firearm discharge for safety reasons Effect not Significant (no other defined projects)
Health	PSA - community of Attawapiskat and associated traditional lands	Construction, operation and closure	Country foods at background level for contaminants	No - adverse contaminant releases that could potentially affect country foods lack one or more of - source strength, pathway, or receptor	Adverse health effects linked to biophysical aspects not anticipated Effect not Significant
Cultural and heritage sites	PSA - community of Attawapiskat and associated traditional lands	Construction	Other mineral exploration in the region (no other projects currently economic)	No	Project development not expected to adversely affect cultural and heritage sites Effect not Significant
Physical infrastructure	PSA - minor Attawapiskat area facilities (training centres, Proponent office, possible barge landing area to support construction phase)	Construction, operation and closure	Community solid waste disposal at local landfill	Yes - any waste materials associated with the barge landing facility (if constructed) to be removed off site	Proponent will remove wastes associated with its activities at barge landing facility for off-site disposal. Effect not Significant
Other James Bay Coastal Cree Communities					
Traditional pursuits	PSA - communities of Moosonee, Moose Factory, Fort Albany and Kashechewan and traditional lands bordering James Bay winter road	Construction, operation and closure	Existing ONR and 115 kV transmission line; existing coastal winter road; limited commercial forestry operations in Otter Rapids area	No - Project-related adverse effects from new transmission line expected to be of short duration (construction period) and not likely to meaningfully affect hunting and trapping in the area	Project development has limited potential to disturb wildlife beyond that already associated with existing railway and winter road use Effect not Significant
Health	PSA - communities of Moosonee, Moose Factory, Fort Albany and Kashechewan	Construction, operation and closure	Country foods at background level for contaminants	No - adverse contaminant releases that could potentially affect country foods lack one or more of - source strength, pathway, or receptor	Adverse health effects linked to biophysical aspects not anticipated Effect not Significant
Cultural and heritage sites	PSA - new transmission line route	Construction	Existing ONR and 115 kV transmission line; existing coastal winter road; limited commercial forestry operations in Otter Rapids area	No - line would be constructed in winter, negligible potential for ground disturbance	Project development not expected to adversely affect cultural and heritage sites Effect not Significant
Physical infrastructure	PSA - James Bay winter road and coastal barge operations	Construction, operation and closure	Regular use of west James Bay winter road; possibly some limited use of coastal barge during construction phase	Yes - improve quality and safety of winter road operations - as per current Project plans	Construction and operation of the VDP will place increased demands on the James Bay winter road, and possibly the coastal barge operations - increased demands to be offset by infrastructure improvements Effect not Significant

na - not applicable; PSA - Project Study Area; RSA - Regional Study Area

7.7.2 Other James Bay Affected Cree Communities

Potential cumulative effects involving socio-economic impacts to the other James Bay affected Cree communities include:

- Continued and possibly accentuated cultural change;
- Possible adverse effects to wildlife (mainly caribou and moose) associated with winter road use; and,
- Capacity considerations involving use of the west James Bay winter road and coastal barge services.

7.7.2.1 Effects

Aspects of cumulative environmental effects relating to cultural change are the same as those described above in connection with Attawapiskat, but the level of project-related effect to these communities would be smaller.

Increased use of the west James Bay winter road in connection with the VDP is not expected to result in any meaningful increase in wildlife disturbance beyond that which already occurs with existing road use. Victor traffic is expected to be limited mainly to 4 to 6 convoys of 5 to 6 trucks per day during the project construction phase, each way; and to about 2 convoys of 4 to 5 trucks per day during operations.

7.7.2.2 Mitigation

To minimize interference with other users, and to provide for safety, De Beers will contribute to upgrading the quality of the west James Bay winter road. Project-related truck traffic will also move mainly in convoys, as stated above, to limit interference with other users and also to reduce the risk of possible accidents. By taking these actions, the potential for adverse cumulative impacts to regional transportation capacity can be effectively eliminated.

7.7.2.3 Significance

While there may be other industrial developments such as forestry in the other James Bay Affected Cree Communities, there will not be a cumulative effect of significant consequence caused by the project.

7.7.3 RA Conclusions

The RAs conclude that there will not likely be any significant adverse cumulative environmental effects.

**TABLE 7-1
SIGNIFICANCE DETERMINATIONS OF RESIDUAL EFFECTS AFTER MITIGATION - SOCIO-ECONOMIC EFFECTS**

Feature	Potential Impact	Proposed Mitigation	Residual Effects After Mitigation					Overall Significance	Likelihood
			Direction	Geographic Extent	Magnitude	Duration	Frequency		
ATTAWAPISKAT - TRADITIONAL PURSUITS									
Land Use									
Mine and infrastructure development and operation	Direct displacement of wildlife habitat, noise and other disturbance, and general restriction on firearm discharge near working areas to protect worker safety, resulting in reduced access to wildlife and possibly fisheries resources in project development areas	Financial consideration and compensation for temporary (life-of-mine) interference with hunting and trapping activities in project development areas	Negative	Victor site buffer zone, and along south and west winter road corridors (<10% of PSA)	Compensation for effect to be provided by the Proponent	Life of project	Continuous	Compensation will be provided to the AttFN for the temporary loss of hunting and trapping opportunities in project development areas	Will occur
						Level II		Not Significant	
Traditional Values and Skills									
Project employment	Opportunity for personal choice with regard to combining traditional pursuits with participation in the wage economy	Rotational work schedules; workplace culture that accommodates traditional pursuits; increased income will provide additional resources to undertake traditional activities	Positive	Attawapiskat and at individual level	Low at community level moderate at the individual level, matter of personal choice	Life of project	Continuous	Increased freedom of choice through provision of good options is considered a positive benefit at the individual level. But see below	Will occur
						Level II		Not Significant	
	Cross-cultural experience of Aboriginals, potentially leading to reduced value placed on traditional skills and values	Cross-cultural training, workplace culture that accommodates traditional pursuits, pending actual trends and magnitude of any resultant problems, discussion with the AttFN on possible mitigation measures.	Negative	Attawapiskat and at individual level	Low insofar as the project may contribute to a pre-existing trend; matter of individual choice	Life of project	Continuous	There is some possibility that an overall shift towards the formal economy could undermine traditional activity, especially at the individual level through matters of personal choice	May occur
						Level II		Not Significant	
ATTAWAPISKAT - ABORIGINAL COMMUNITY (PHYSICAL DISTURBANCE)									
Disturbance									
Various Project activities, including construction and transportation of goods and people	Disturbance mainly as a result of winter noise and truck exhaust emissions	Implementation of best practice and/or industry standard construction and operations procedures	Negative	Truck traffic along winter road, and possibly water activity at barge landing area during construction project phase	Winter road truck traffic to pass about 2 km from community, MOE noise standards expected to be met (options for routing traffic further away)	Life of project	Seasonal or infrequent	Noise modeling shows that MOE noise criteria are predicted to be met at the nearest residences	Will occur
						Level II	Level II	Not Significant	
ATTAWAPISKAT - HEALTH									
Public Health and Security									
Traffic and workplace accidents	For the individuals involved, the effects range from inconvenience to death	Compliance with legislation, implementation of best practice, public education, roads outside communities, improved road quality	Negative	Truck traffic along winter road, and Victor site	Improved road construction standards and use of convoys for De Beers' traffic will off-set the potential for increased accidents; strict safety enforcement at Victor site	Life of project	Seasonal for winter roads; continuous at Victor site	Safety designs and operating procedures will be put in place to reduce the potential for winter road and workplace accidents	Likely to occur
						Level II		Not Significant	

Feature	Potential Impact	Proposed Mitigation	Residual Effects After Mitigation					Overall Significance	Likelihood
			Direction	Geographic Extent	Magnitude	Duration	Frequency		
Health Related Project Emissions									
Project activity	Potential contamination of food, water and air	Project design features and footprint to avoid contamination of resources that people use	Negative	Mainly Attawapiskat River corridor and near community	Low to negligible	Life of project	Continuous	There is very limited potential for contamination of resources	Unlikely to occur
						Level II		Not Significant	
ATTAWAPISKAT - CULTURAL HERITAGE RESOURCES									
Construction of Project related facilities and infrastructure	Limited potential for disturbance to heritage and archaeological sites	Avoidance of known archaeological sites, protocols for mitigation if new sites are encountered	Negative	Mainly Attawapiskat River corridor and near community	Low to negligible	Life of Project	Infrequent	No harm or loss of cultural heritage resources is expected with mitigation	May occur
						Level II		Not Significant	
ATTAWAPISKAT - PHYSICAL INFRASTRUCTURE									
Project requirements for physical infrastructure	Potential for project requirements to exceed capacity of existing infrastructure	Improvements to existing infrastructure (roads and power lines)	Positive	Mainly Attawapiskat River corridor and near community	Moderate	Life of project	Continuous	The potential for negative effect is transformed into a positive effect with payment for services and improvements to existing infrastructure	Will occur
					Level II	Level II		No Significant Adverse Effects	
OTHER JAMES BAY COASTAL CREE COMMUNITIES - TRADITIONAL PURSUITS									
Power line construction and operation	Direct displacement of wildlife habitat	Discussion with communities to minimize effects	Positive	Displacement <10% of PSA	Groundcover left largely intact	Beyond life of Project	Continuous	The activity will not substantively affect traditional pursuits, affected communities will see benefit through increased reliability of power supply and profitability of FNEI	Will occur
								Not Significant	
Project employment	Opportunity for personal choice with regard to combining traditional pursuits with participation in the wage economy	Rotational work schedules; workplace culture that accommodates traditional pursuits; increased income will provide additional resources to undertake traditional activities	Positive	Attawapiskat and at individual level	Low at community level moderate at the individual level, matter of personal choice	Life of project	Continuous	Increased freedom of choice through provision of good options is considered a positive benefit at the individual level. But see below	Will occur
						Level II		Not Significant	
	Cross-cultural experience of Aboriginals, potentially leading to reduced value placed on traditional skills and values	Cross-cultural training, workplace culture that accommodates traditional pursuits, pending actual trends and magnitude of any resultant problems, discussion with the AttFN on possible mitigation measures.	Negative	Attawapiskat and at individual level	Low insofar as the project may contribute to a pre-existing trend; matter of individual choice	Life of project	Continuous	There is some possibility that an overall shift towards the formal economy could undermine traditional activity, especially at the individual level through matters of personal choice	May occur
						Level II		Not Significant	

Feature	Potential Impact	Proposed Mitigation	Residual Effects After Mitigation					Overall Significance	Likelihood
			Direction	Geographic Extent	Magnitude	Duration	Frequency		
OTHER JAMES BAY COASTAL CREE COMMUNITIES - HEALTH									
Traffic and workplace accidents	For the individuals involved, the effects range from inconvenience to death	Compliance with legislation, implementation of best practice, public education, roads outside communities, improved road quality	Negative	Other James Bay Coastal Cree Communities and at individual level	It is not expected that there will be an increase in the number of accidents	Life of project	Seasonal for winter roads; continuous at Victor site	It is not expected that there will be an increase in the number of accidents	Likely to occur
						Level II		Not Significant	
NAVIGATION									
Barge landing facilities, water intake and discharge structures, temporary winter road bridges, all-season road crossings of Granny Creek, water pipeline crossing of Nayshkoolayaow River	Very minor potential to interfere with boat traffic in affected zones	Proper siting of facilities, worksite management during construction, seasonal removal of temporary winter road bridges so as not to obstruct waters in the non-winter period	Positive (barge landing facilities); negative (potential obstructions)	Attawapiskat River, along winter roads, and Victor site area watercourses	All effects considered to be minor	Life of project	Seasonal for winter roads; continuous at Victor site	No meaningful potential to interfere with water navigation	Unlikely to occur
						Level II		Not Significant	
RECREATION AND AESTHETICS									
Otoskwin-Attawapiskat River Provincial Waterway Park; guided moose hunting	No concerns have been raised	Undeveloped buffer zone to be preserved along major waterways to preserve river aesthetics, except in minor instances where avoidance is not reasonably practical	Negative	Minor reaches of Attawapiskat and Nayshkootayaow Rivers	All effects considered to be minor	Life of project	Continuous	No meaningful potential to interfere with recreation or aesthetics	Unlikely to occur
						Level II		Not Significant	
SUSTAINABLE USE									
Fisheries, hunting and trapping resources	Potential effects to riverine flows and water quality; disturbance of wildlife and wildlife habitat	Riverine flow supplementation and water quality management to protect fisheries resources; limited site footprint and noise control measures to limit effects to wildlife; compensation for adverse effects on traditional pursuits; site restoration at closure	Negative	Mainly river corridors and associated forested margins, and open areas for caribou	All effects considered to be minor	Life of project	Continuous	Effects to be managed through mitigation and adaptive management strategies	Likely to occur
				Level II		Level II		Not Significant	
Mineral and forestry resources	Mining the Victor kimberlites will remove that specific resource; limited tree clearing associated with new transmission line mainly south of Moosonee	Development of the Victor Diamond Project will encourage the identification of other mineral resources in the area; mitigation for forestry effects not required	Positive (mineral exploration); negative (mineral resource depletion, minor tree clearing)	Limited to Victor site and transmission line corridor mainly south of Moosonee	All effects considered to be minor	Beyond life of project	Continuous	Effects are of low magnitude and geographic extent	Will occur
								Not Significant	