

TABLE OF CONTENTS

	<u>Page</u>
1.0 BACKGROUND AND INTRODUCTION	1.1
1.1 Guiding Principles.....	1.1
1.1.1 Environmental Assessment as a Planning Tool	1.1
1.1.2 Sustainable Development	1.2
1.1.3 Precautionary Approach.....	1.2
1.1.4 Study Strategy, Methodology and Level of Detail	1.3
1.2 The Project Proponent.....	1.3
1.2.1 Contact Information	1.3
1.2.2 Development, Operation and Management of the Project	1.4
1.2.3 Environmental and Socio-economic Performance on Past and On-going Projects	1.6
1.2.4 Aboriginal Engagement.....	1.8
1.2.5 Key Personnel Engaged in Developing the EIS	1.9
1.3 Legal Framework and the Role of Government.....	1.11
1.3.1 Environmental Assessment Framework.....	1.11
1.3.2 Role of Government	1.13
1.3.3 Planning Context for the Environmental Assessment Process	1.16
1.3.4 Regulatory Approvals	1.22
1.4 Project Description	1.24
1.4.1 Need for and Purposes of the Project	1.24
1.4.2 Project Setting	1.36
1.4.3 Project Description	1.55
2.0 PROJECT SCOPING.....	2.1
2.1 Factors considered in the Environmental Impact Statement	2.1
2.2 Scope of the Factors	2.1
2.3 Valued Ecosystem Components	2.1
2.3.1 Definition of Valued Ecosystem Component	2.1
2.3.2 Use of VECs in the EA Process	2.1
2.3.3 VEC Selection Process for the Marathon PGM-Cu Project EA.....	2.2
2.3.4 VECs for the Marathon PGM-Cu Project EA.....	2.2

2.4	Spatial Boundaries of the Assessment	2.7
2.5	Temporal Boundaries of the Assessment.....	2.12
3.0	PROJECT ALTERNATIVES.....	3.1
3.1	Alternatives to the Project.....	3.1
3.1.1	Platinum Group Metals Opportunities	3.1
3.1.2	PGM Recycling Operations	3.1
3.1.3	JM Reef Development Opportunities – Montana, USA	3.2
3.1.4	Marathon PGM-Copper Project.....	3.3
3.1.5	“Do Nothing” Alternative	3.3
3.1.6	Beyond PGMs - Diversification.....	3.3
3.2	Alternatives Means of Carrying out the Project	3.4
3.2.1	Alternatives Means Assessment Framework	3.6
3.2.2	Alternative Means Assessment	3.11
3.3	Assessment of Alternatives for Long Term Mine Waste Storage	3.35
3.3.1	Assessment Framework.....	3.35
3.3.2	Mine Rock Storage.....	3.35
3.3.3	Process Solids Storage	3.38
4.0	ABORIGINAL, PUBLIC AND AGENCY CONSULTATION AND ENGAGEMENT.....	4.1
4.1	Introduction.....	4.1
4.2	Aboriginal Consultation and Engagement	4.1
4.2.1	Consultation Overview	4.1
4.2.2	Consultation and Engagement Objectives	4.2
4.2.3	Approach to Consultation and Engagement.....	4.2
4.2.4	Documentation	4.3
4.3	Aboriginal Peoples—Regional Context	4.3
4.4	Aboriginal People That May be Affected by the Project	4.3
4.4.1	Aboriginal Community Context.....	4.6
4.4.2	Early Agreements.....	4.6
4.4.3	Consultation Activities	4.8
4.5	Plans for Ongoing Consultation.....	4.34
4.5.1	Ongoing Participation of Aboriginal Peoples	4.34
4.6	Public Consultation.....	4.91
4.6.1	Engagement Approach and Overview.....	4.91

4.6.2	Engagement Activities	4.92
4.6.3	Consultation Activities	4.93
4.6.4	Plans for Ongoing Consultation.....	4.109
4.6.5	Key Issues.....	4.110
5.0	EXISTING ENVIRONMENT.....	5.1
5.1	Geology	5.1
5.1.1	Work Scope.....	5.1
5.1.2	Regional Geology	5.1
5.1.3	Deposit Geology	5.4
5.1.4	Seismicity	5.10
5.1.5	Geochemical Characterization of the Marathon PGM-Copper Deposit Host Material 5.10	5.10
5.2	Atmospheric Environment	5.35
5.2.1	Work Scope.....	5.35
5.2.2	Existing Conditions.....	5.38
5.3	Acoustic Environment.....	5.43
5.3.1	Work Scope.....	5.44
5.3.2	Existing Conditions.....	5.46
5.4	Water Quality and Quantity	5.47
5.4.1	Hydrology	5.47
5.4.2	Hydrogeology	5.53
5.4.3	Surface Water Quality	5.62
5.4.4	Sediment Quality and Benthos.....	5.76
5.4.5	Fish and Fish Habitat	5.90
5.5	Terrain and Soils	5.97
5.5.1	Work Scope.....	5.98
5.5.2	Existing Conditions.....	5.98
5.6	Vegetation	5.100
5.6.1	Work Scope.....	5.100
5.6.2	Existing Conditions.....	5.100
5.7	Wildlife	5.105
5.7.1	Work Scope.....	5.105
5.7.2	Existing Conditions.....	5.107
5.8	Species at Risk.....	5.117

5.8.1	Work Scope	5.117
5.8.2	Existing Conditions	5.117
5.9	Socio-economics, Culture and Human Health	5.127
5.9.1	Work Scope	5.127
5.9.2	Social Factors	5.128
5.9.3	Economic Factors	5.141
5.9.4	Resource Uses	5.146
5.9.5	Human Health	5.151
5.9.6	Navigable Waters	5.157
5.10	Physical and Cultural Heritage Resources	5.158
5.10.1	Work Scope	5.158
5.10.2	Archaeology	5.159
5.10.3	Built Heritage and Cultural Heritage Landscapes	5.159
5.11	Aboriginal Considerations	5.159
5.11.1	Cultural Prehistory of the Region	5.159
5.11.2	General Ethnohistorical Background of the Project Area	5.161
5.11.3	Aboriginal Groups of Interest	5.162
5.11.4	Aboriginal and Treaty Rights	5.170
5.11.5	Aboriginal Archaeological Resources	5.173
5.11.6	Local and Regional Spiritual Sites	5.174
5.11.7	Current Uses of Lands and Resources for Traditional Purposes	5.174
5.11.8	Country Foods	5.179
5.11.9	Preponderance of Traditional Dietary Habits	5.180
6.0	ASSESSMENT OF POTENTIAL IMPACTS OF THE PROPOSED MARATHON PGM-Cu PROJECT	6.1
6.1	Assessment Framework	6.1
6.1.1	Effects Predictions	6.1
6.1.2	Cumulative Effects Assessment	6.14
6.1.3	Summary of the Effects Assessment	6.14
6.2	Assessment of Effects	6.23
6.2.1	Atmospheric Environment	6.23
6.2.2	Acoustic Environment	6.38
6.2.3	Water Quality and Quantity	6.42
6.2.4	Fish and Fish Habitat	6.62

6.2.5	Terrain and Soils	6.70
6.2.6	Vegetation	6.72
6.2.7	Wildlife	6.80
6.2.8	Species at Risk.....	6.90
6.2.9	Socio-economics, Culture and Human Health	6.102
6.2.10	Physical and Cultural Heritage Resources	6.129
6.2.11	Aboriginal Considerations	6.131
6.3	Accidents and Malfunctions	6.138
6.3.1	Scope of the Assessment of Accidents and Malfunctions	6.138
6.3.2	Accident and Malfunction Scenarios	6.138
6.4	Effects of the Environment on the Project	6.180
6.4.1	Climate Change.....	6.180
6.4.2	Extreme Weather	6.182
6.4.3	Forest Fires	6.184
6.4.4	Seismic Activity	6.186
6.5	Capacity of Renewable Resources	6.187
6.5.1	Atmospheric Resources	6.188
6.5.2	Surface Water Resources	6.188
6.5.3	Groundwater Resources	6.188
6.5.4	Aquatic Resources	6.188
6.5.5	Terrestrial Resources	6.189
6.6	Cumulative Effects Analysis	6.189
7.0	ENVIRONMENTAL MANAGEMENT.....	7.1
7.1	Environmental Management System.....	7.1
7.1.1	EMS Framework.....	7.1
7.1.2	EMS Components – Management Programs.....	7.1
7.1.3	Adaptive Management	7.6
7.1.4	Application of the EMS	7.7
7.2	Decommissioning and Closure Plan.....	7.7
7.3	Monitoring and Follow-up Programs.....	7.11
7.4	Occupational Health and Safety Plan (OHSP)	7.15
7.4.1	Context	7.15
7.4.2	SCI's OHSP.....	7.15

8.0	TABLE OF COMMITMENTS	8.1
9.0	ASSESSMENT SUMMARY AND CONCLUSIONS	9.1
10.0	REFERENCES.....	10.1

LIST OF TABLES

	<u>Page</u>
Table 1.2-1: Key Individuals within Stillwater Canada Inc. and the Stillwater Mining Company Involved in the Preparation of the Marathon PGM-Cu Project EIS	1.10
Table 1.2-2: Key Individuals on the Marathon PGM-Cu Project EA Project Team Involved in the Preparation of the Marathon PGM-Cu Project EIS	1.10
Table 1.3-1: Federal approvals, permits and/or authorizations that may be required for the Project	1.22
Table 1.3-2: Provincial approvals, permits and/or authorizations that may be required for the Project	1.23
Table 1.3-3: Municipal approvals, permits and/or authorizations that may be required for the Project	1.24
Table 1.4-1: Commercial and industrial applications of the platinum group metals (source SWCSWC, 2011)	1.25
Table 1.4-2: Primary Phases Associated with the proposed Marathon PGM-Cu Project	1.35
Table 1.4-3: Major Facilities Associated with the proposed Marathon PGM-Cu Project	1.35
Table 1.4-4: Land Tenure of the Stillwater Canada Inc. Marathon PGM-Cu Project	1.38
Table 1.4-5: Summary of Key Site Preparation Phase Activities	1.61
Table 1.4-6: Marathon PGM-Cu Project Pit Shell Mineral Resource Estimates (Source; MICON, 2010)	1.68
Table 1.4-7: Estimated Mineable Mineral Reserves for the Marathon PGM-Cu Deposit (Source; MICON, 2010)	1.68
Table 1.4-8: Conceptual Dimensions and Surface Areas of the Primary Pit and Satellite Pits at the Marathon PGM-Cu Project	1.70
Table 2.3-1: Summary of VECs used for the Marathon PGM-Cu Project Environmental Impact Assessment	2.3
Table 3.2-1: Summary of the Assessment of Alternative Means by which the Project could be implemented	3.5
Table 3.2-2: Alternatives Means Assessment Evaluation Criteria and Evaluation Criteria Indicators	3.7
Table 3.2-3: Alternative Means Assessment Evaluation Criteria Rating Scheme	3.10
Table 4.4-1: Key Issues and Responses to Date with PRFN	4.13
Table 4.4-2: Key Issues and Responses to Date with PMFN	4.18
Table 4.4-3: Key Issues and Responses to Date with PPFN	4.22
Table 4.4-4: Key Issues and Responses to Date with RSMIN	4.26

Table 4.4-5: Key Issues and Responses to Date with OCAP	4.29
Table 4.4-6: Key Issues and Responses to Date with MNO	4.32
Table 5.1-1: Summary of Samples Collected for Static Testing and Estimated Percentages of Mine Rock	5.19
Table 5.1-2: Summary of Bulk-Elemental Content and ABA of Overburden Samples.....	5.21
Table 5.1-3: Average Sulphur Contents of Mine Rock Types	5.24
Table 5.1-4: Summary of Bulk-Element Content and ABA for Mine Rock Samples	5.25
Table 5.1-5: Bulk Process Solids Decant Water Quality	5.28
Table 5.1-6: Summary of Bulk-Element Content and ABA for Process Solids Materials.....	5.29
Table 5.2-1: Summary of local and regional climate data	5.39
Table 5.2-2: Summary of Measured and Predicted Project Site Air Quality	5.42
Table 5.2-3: National and Provincial Greenhouse Gas Emissions	5.43
Table 5.3-1: Key Baseline Noise Descriptors for the Project and Surrounding Area	5.46
Table 5.4-1: Monthly flow statistics for WSC stations in the vicinity of the Project site (flows as m ³ /s)	5.49
Table 5.4-2: Summary of Subwatershed Characteristics.....	5.50
Table 5.4-3: Summary of Mean Monthly Stream Flows in the Six Subwatersheds Draining the Project Site (nodes refer to stream flow monitoring locations as provided in Figure 5.4-1).....	5.50
Table 5.4-4: Estimated Low Flows for the Pic River	5.53
Table 5.4-5: Summary of Hydraulic Conductivity by Depth	5.57
Table 5.4-6: Summary of Hydraulic Conductivity Tests in Upper Bedrock & Non-Clay Overburden	5.57
Table 5.4-7: Baseline overburden groundwater quality	5.58
Table 5.4-8: Baseline bedrock groundwater quality.....	5.59
Table 5.4-9: Parameters for which Analyses Completed as part of Routine Surface Water Quality Sampling on the Project Site.....	5.64
Table 5.4-10: Existing Water Quality in and Around the Marathon PGM-Cu Project Site.....	5.65
Table 5.4-11: Sediment Quality for the Stream 1 Watershed	5.78
Table 5.4-12: Sediment Quality for the Stream 2 Watershed	5.79
Table 5.4-13: Sediment Quality for the Stream 3 Watershed	5.79
Table 5.4-14: Sediment Quality for the Stream 4 Watershed	5.80
Table 5.4-15: Sediment Quality for the Stream 5 Watershed	5.80
Table 5.4-16: Sediment Quality for the Stream 6 Watershed	5.81

Table 5.4-17: Sediment Quality for the Pic River and some miscellaneous tributary sampling locations	5.81
Table 5.4-18: Sediment Quality for Lake Superior	5.82
Table 5.4-19: Summary of Benthic Macroinvertebrate Data for the Stream 1 Subwatershed .	5.83
Table 5.4-20: Summary of Benthic Macroinvertebrate Data for the Stream 2 Subwatershed .	5.84
Table 5.4-21: Summary of Benthic Macroinvertebrate Data for the Stream 3 Subwatershed .	5.85
Table 5.4-22: Summary of Benthic Macroinvertebrate Data for the Stream 4 Subwatershed .	5.86
Table 5.4-23: Summary of Benthic Macroinvertebrate Data for the Stream 5 Watershed.....	5.87
Table 5.4-24: Summary of Benthic Macroinvertebrate Data for the Stream 6 subwatershed..	5.88
Table 5.4-25: Summary of Benthic Macroinvertebrate Data for the Pic River and other Small Tributaries	5.89
Table 5.4-26: Summary of Benthic Macroinvertebrate Data for Lake Superior	5.90
Table 5.5-1: First-order estimate of overburden volumes to be excavated at the Project site .	5.99
Table 5.6-1: Ecological Land Classifications for the Project Study Area (Racey <i>et al.</i> , 1996).	5.102
Table 5.7-1: Summary of Terrestrial Baseline Field Sampling Efforts on and around the SCI Marathon Project Site in 2007 to 2011	5.106
Table 5.7-2: The Amphibian and Reptile Species Occurring or Potentially Occurring within the Study Site.....	5.108
Table 5.7-3: Mammal Species Occurring or Potentially Occurring in the Study Area.....	5.109
Table 5.7-4: The Most Common Birds Encountered on the Marathon Project Site during the Baseline Forest Bird Monitoring	5.114
Table 5.7-5: Raptor Observed or Potentially Occurring on the Project Site.....	5.115
Table 5.8-1: Bird Species at Risk that Occur or Potentially Occur Within the Project Area ...	5.118
Table 5.8-2: Plant Species that are Considered Rare in Thunder Bay District	5.125
Table 5.8-3: Provincially rare (S1 to S3) Plant Species Occurring Surrounding the Project Area (NHIC, 2012).	5.126
Table 5.9-1: 2011 Population and Population Density for Locations of Interest (FN data for on-reserve populations).....	5.132
Table 5.9-2: Summary of Available Housing in Marathon and Surrounding Municipalities....	5.136
Table 5.9-3: Percent Change in Median Income, Rental Payments, Mortgage Payments (2001 to 2006) for Municipalities of Interest	5.137
Table 5.9-4: Description of Road Network and Existing Traffic Volumes.....	5.141
Table 5.9-5: Easily Reached Fishing Spots in and Around Marathon (Source: Marathon Information Centre, 10 Easily Reached Fishing Spots in and Around Marathon,	

http://www.marathon.ca/upload/documents/10-easily-reached-fishing-spots-in-and-around-marathon.pdf)	5.149
Table 5.9-6: Air Quality Index Scores for Sault Ste. Marie and Thunder Bay, 2010 through May 2012.	5.152
Table 5.9-7: Community Well-Being (CWB) Index Scores for Local Communities in the Vicinity of the Marathon PGM-Cu Project.....	5.157
Table 5.11-1: Periods in the Cultural Prehistory of the Marathon Area (9500 to 400 BP)	5.160
Table 5.11-2: First Nation Communities of Potential Interest to the Marathon PGM-Cu Project	5.163
Table 5.11-3: Animals or parts thereof identified by PRFN on or around the Project site that are Utilized for Food, Cultural and/or Medicinal purposes.	5.176
Table 5.11-4: Plants identified by PRFN on or around the Project site that are Harvested for Food, Cultural and/or Medicinal purposes.	5.177
Table 6.1-1: Potential Project-environment interactions for biophysical VECs	6.2
Table 6.1-2: Project-environment interactions for socio-economic, land and resource uses, physical and cultural heritage and Aboriginal considerations	6.5
Table 6.1-3: Criteria for the Characterization of Residual Effects and their Significance in the Assessment Process.....	6.13
Table 6.1-4: Summary of the results of the effects assessment of the Marathon PGM-Cu Project.....	6.15
Table 6.2-1: Summary of Emissions Sources for all Phases of the Project.....	6.23
Table 6.2-2: Summary of Predicted Criteria Air Contaminants Concentrations during Site Preparation and Construction	6.27
Table 6.2-3: Summary of Predicted Criteria Air Contaminants Concentrations during Operation	6.30
Table 6.2-4: Estimated Greenhouse Gas Emissions during All Phases of the Project.....	6.32
Table 6.2-5: Predicted Sound Levels at Noise Sensitive Receptors from Project Activities ...	6.38
Table 6.2-6: Predicted Sound Levels at Noise Sensitive Receptors from Highway 17 Traffic	6.39
Table 6.2-7: Project Facilities and Study Area Sub-Basins	6.43
Table 6.2-8: Assessment Benchmarks for Water Quality in Hare Lake	6.48
Table 6.2-9: Assessment Benchmarks for Water Quality in Pic River	6.49
Table 6.2-10: Groundwater Inflow to Pits.....	6.55
Table 6.2-11: Approximate Volumes of Overburden to be Excavated at each Project Zone...	6.70
Table 6.2-12: Estimated land clearing requirements for Project-related infrastructure during site preparation and construction (excluding roads and other linear features).....	6.72

Table 6.3-1: Summary of potential environmental issues, mitigation and response procedures associated with the accident and malfunction scenarios identified for the Marathon PGM-Cu Project EIS	6.174
Table 6.4-1: Projected Changes in Temperature and Precipitation at Project Site.....	6.180
Table 6.6-1: Summary of Potential and Residual Effects on VECs for the Marathon PGM-Cu Project.....	6.191
Table 6.6-2: Summary of Environmental Components and Associated VECs Assessed for Cumulative Effects	6.200
Table 6.6-3: Summary of Projects and Activities included in Cumulative Effects Assessment	6.202
Table 6.6-4: Summary of Potential Effects that May Overlap in Type of Effect, Time or Space	6.219
Table 7.1-1: Planned Components of SCI’s Environmental Management System.....	7.1
Table 7.3-1: Monitoring and follow-up programs for the Marathon PGM-Cu Project.....	7.12
Table 8-1: Table of Commitments related to the implementation of the Marathon PGM-Cu Project.....	8.2

LIST OF FIGURES

Figure 1.3-1: One Window Coordination Process Flow Chart	1.15
Figure 1.3-2: Municipal Boundaries and Zoning Designations in Relation to the Marathon PGM-Cu Project Site – Land Use.....	1.19
Figure 1.3-3: Municipal Boundaries and Zoning Designations in Relation to the Marathon PGM-Cu Project Site – Groundwater Protection Zones	1.20
Figure 1.3-4: Municipal Boundaries and Zoning Designations in Relation to the Marathon PGM-Cu Project Site – Resources and Constraints.....	1.21
Figure 1.4-1: Relative Palladium Demand by End Use in 2010.....	1.26
Figure 1.4-2: Relative Platinum Demand by End Use in 2010.....	1.27
Figure 1.4-3: The Supply-Demand Relationship for Platinum and Palladium for the Period 2005 through 2020 (source SFA [Oxford] in SWC, 2011).....	1.28
Figure 1.4-4: World Copper Consumption Over the Period 2000 Through 2010.....	1.30
Figure 1.4-5: World Copper Production Over the Period 1900 Through 2010.....	1.31
Figure 1.4-6: Location of the Proposed Marathon PGM-Cu Project Site Near Marathon, Ontario	1.37
Figure 1.4-7: Summary of Crown Leases and Claim Blocks for the Marathon PGM-Cu Project Site.....	1.44

Figure 1.4-8: Approximate 1:50,000 Scale Map of the Project and Surrounding Area	1.46
Figure 1.4-9: Approximate 1:250,000 Scale Map of the Project and Surrounding Area	1.47
Figure 1.4-10: Watersheds Draining the Project Site.....	1.50
Figure 1.4-11: Existing Conditions at the Marathon PGM-Cu Project Site.....	1.58
Figure 1.4-12: Marathon PGM-Cu Project General Site Layout	1.59
Figure 1.4-13: Approximate Areas on the Mine Site that will be cleared to Accommodate Site Development.....	1.63
Figure 1.4-14: Conceptual Year 1 Development of the MRSA and the PSMF	1.73
Figure 1.4-15: Conceptual Year 4 Development of the MRSA and the PSMF	1.74
Figure 1.4-16: Conceptual Year 10 Development of the MRSA and the PSMF	1.75
Figure 1.4-17: Conceptual MRSA and PSMF Configuration at the Cessation of Operations ..	1.76
Figure 1.4-18: Conceptual Mill Process Flow Diagram for the Marathon PGM-Cu Project	1.85
Figure 1.4-19: Proposed Configuration of the Camp 19 Road – Hwy 17 Intersection	1.90
Figure 1.4-20: The Project Development Schedule	1.91
Figure 2.4-1: Site Study Area for the Marathon PGM-Cu Project EIS	2.9
Figure 2.4-2: Local Study Areas for the Marathon PGM-Cu Project EIS	2.10
Figure 2.4-3: Regional Study Area for the Marathon PGM-Cu Project EIS	2.11
Figure 2.4-4: Preliminary Delineation of local Woodland Caribou population ranges along the southern edge of the provincial extent of occurrence (source; OMNR, 2009)	2.12
Figure 3.2-1: Alternative Site Access Road Routes for the Marathon PGM-Cu Project	3.12
Figure 3.3-1: MRSA Candidate Site Locations for the Marathon PGM-Cu Project.....	3.37
Figure 3.3-2: PSMF Candidate Site Locations for the Marathon PGM-Cu Project	3.39
Figure 4.4-1 Aboriginal Groups in the Vicinity of the proposed Stillwater Project	4.5
Figure 5.1-1: Regional Geology of the Lake Superior Area	5.2
Figure 5.1-2: Geology of the Eastern Half of the Coldwell Complex Showing Location of the SCI Marathon Deposit.....	5.3
Figure 5.1-3: Geological Map of the SCI Marathon Deposit	5.5
Figure 5.1-4: Total Magnetic Image over the Eastern Boundary of the Coldwell Complex.....	5.6
Figure 5.1-5: Cross Section of the SCI Marathon Deposit at Section 4400 North	5.9
Figure 5.1-6: Seismic Hazard Map of Canada (Source NRCAN, 2011)	5.10
Figure 5.1-7: Cross Section for Project Section 3450 N (Source: Marathon PGM Corp.)	5.18
Figure 5.1-8: Comparison of Percent Total Sulphur versus Acid Leachable Sulphate in Overburden Materials.....	5.22

Figure 5.1-9: Comparison of Percent Total Carbon versus Percent Carbonate and Percent Total Organic Carbon for Overburden Materials	5.23
Figure 5.1-10: Total Sulphur and Sulphide Correlation for Mine Rock	5.26
Figure 5.2-1: Baseline Air Quality Monitoring Locations	5.37
Figure 5.2-2: Wind Rose for Marathon Airport – 2007 to 2009	5.40
Figure 5.3-1: Noise Sensitive Receptors in the Vicinity of the Marathon PGM-Cu Project Site	5.45
Figure 5.4-1: Flow Monitoring Locations at the Marathon PGM-Cu Project Site	5.48
Figure 5.4-2: Groundwater Well Monitoring Locations at the Marathon PGM-Cu Project Site	5.54
Figure 5.4-3: Location of Fault Lines within the Marathon PGM-Cu Project Site	5.61
Figure 5.4-4: Routine Baseline Surface Water Quality Sampling Locations	5.63
Figure 5.4-5: Baseline Sediment Sampling Locations at the Marathon PGM-Cu Project Site	5.77
Figure 5.4-6: Distribution of Fish Across the Marathon PGM-Cu Project Site	5.92
Figure 5.6-1: Ecosites of the Stillwater Study Area (Racey et al., 1996)	5.103
Figure 5.6-2: Forest Composition in the Project Study Area (OMNR data)	5.104
Figure 5.7-1: Location of Wildlife Management Units in the Vicinity of Lake Superior (Source: OMNR 2007, Wildlife Management Units)	5.111
Figure 5.9-1: Communities within 100 km of the Project Site	5.128
Figure 5.9-2: Comparison of 2011, 2006, and 2001 Census Data in the RSA	5.131
Figure 5.9-3: 2006 Age Class Distribution for Marathon, Terrace Bay, Manitouwadge, Schreiber, and White River.....	5.133
Figure 5.9-4: Age Class Distribution for the 2006 Census Populations of Pic River First Nation, Pic Moberg North, Pic Moberg South and Pays Plat First Nation	5.134
Figure 5.9-5: Characteristics of Private Occupied Dwellings in Marathon	5.135
Figure 5.9-6: Employment and Unemployment Rates for Municipalities of Interest	5.143
Figure 5.9-7: Main Occupations in Municipality of Marathon	5.144
Figure 5.9-8: Wildlife Management Units in the RSA (Source: OMNR, 2007. Wildlife Management Units. http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@fw/documents/geospatialmaterial/mnr_wmu21a_pdf.pdf)	5.147
Figure 5.9-9: Fish Management Zone 7 (Source; OMNR, 2012, Recreational Fishing Regulations. http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@letsfish/documents/document/mnr_e001327.pdf)	5.148
Figure 5.9-10: Trap Line License Areas in the Vicinity of the Project site (the black outline shows the mining lease area associated with the Project).....	5.150

Figure 5.9-11: Location of Drinking Water Wells for the Town of Marathon	5.153
Figure 5.11-1: Pic River First Nation Aboriginal and Treaty Rights Area	5.166
Figure 5.11-2: The Robinson-Superior Treaty Lands in Relation to the Marathon PGM-Cu Project Site near Marathon	5.170
Figure 6.3-1: Three-dimensional Representation of the Configuration of the MRSA.....	6.164
Figure 6.4-1: Forest Fires from 1980 to 2003 in the Regional Study Area (Source: NRCAN, http://cwfis.cfs.nrcan.gc.ca/en_CA/index)	6.184
Figure 6.4-2: Forest Fires from 1920 to 2005 in the Regional Study Area (Source: pers. comm., Ray Wheldon, OMNR, Nipigon District2012)	6.185
Figure 6.6-1: Cumulative Effects Assessment Method	6.190
Figure 6.6-2: Existing, Certain, and Reasonably Foreseeable Projects within the Spatial Boundary of the Cumulative Effects Assessment	6.205
Figure 6.6-3: Timeline for Existing and Future Projects	6.218
Figure 6.6-4: Mining Claims in Coastal and Discontinuous Range West of Pukaskwa National Park.....	6.225
Figure 7.1-1: Structure of the Adaptive Management Cycle	7.6
Figure 7.2-1: Conceptual Closure Arrangement of the PSMF Combined Storage Area.....	7.9
Figure 7.2-2: Conceptual Closure Arrangement of the Mine Rock Storage Area	7.10

LIST OF APPENDICES

APPENDIX NO.

- 1: Table of Concordance for the Marathon PGM-Cu Project
- 2: EA and EIS Related Documentation
- 3: Public and First Nations Consultation Records

CATALOGUE OF SUPPORTING DOCUMENTS

SID ¹ Number	Reference	Citation
1	Marathon PGM-Cu Project Site - Aquatic Resources Baseline Report. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012a
2	Soil Conditions at the Marathon PGM-Cu Project Site. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012b
3	Baseline Water Quality Report for the Marathon PGM-Cu Project. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012c
4	Geological Conditions at the Marathon PGM-Cu Project Site. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012d
5	Geochemical Assessment of Mine Components at the Marathon PGM-Cu Project. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012e
6	Water Quality and COPC Fate Modeling for the Marathon PGM-Cu Project. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012f
7	Fish Habitat Compensation Strategy for the Marathon PGM-Cu Project. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012j
8	Green House Gas and Climate Change Assessment for the Marathon PGM-Cu Project. Prepared by EcoMetrix Incorporated.	EcoMetrix, 2012h
9	Impact Assessment Report – Navigable Waters – Marathon PGM-Cu Project.	EcoMetrix, 2012i
10	Marathon PGM-Cu Project Traffic Impact Study. Prepared by Engineering Northwest Ltd.	ENL, 2012
11	Alternatives Assessments Report for the Process Solids Storage Facility and the Mine Rock Storage Area for the Marathon PGM-Cu Project. Prepared by Knight Piesold Ltd. Includes the following appendix material: <ul style="list-style-type: none"> • Marathon PGM-Cu Project – 2011 Winter Site Investigation Summary (KPL Ref. No. NB101-446/2-2) • Marathon PGM-Cu Project – 2011 Summer and Fall Site Investigation Summary (KPL Ref. No. NB101-446/2-3) • Improved Option 3 PSMF Preliminary Stability Analysis (KPL Ref. No. NB11-00452) • Improved Option 3 PSMF Seepage Analysis (KPL Ref. No. NB11-00455) • Combined Storage Area PSMF Preliminary Stability Analysis (KPL Ref. No. NB12-00055) • Combined Storage Area Seepage Analysis (KPL Ref. No. NB12-00093) • Combined Storage Area PSMF and MRSA Conceptual Closure Plan (KPL Ref. No. NB12-00078) 	Knight Piesold, 2012

¹ Supporting Information Document.

	<ul style="list-style-type: none"> • Marathon PGM-Cu Improved Option 3 PSMF – Water/Solids Balance Update (KPL Ref. No. NB12-00035) • Marathon PGM-Cu Combined Storage Area PSMF – Water/Solids Balance (KPL Ref. No. NB12-00080) • Marathon PGM-Cu Combined Storage Area PSMF – Wet Scenarios Water Balance (KPL Ref. No. NB12-00081) • Marathon PGM-Cu Combined Storage Area PSMF – Dry Scenarios Water Balance (KPL Ref. No. NB12-00111) • Mine Rock Storage Area Runoff Water Management (KPL Ref. No. NB12-00114) 	
12	Baseline Technical Report – Air, Marathon PGM-Cu Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2011a
13	Baseline Technical Report – Noise, Marathon PGM-Cu Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2011b
14	Baseline Report – Hydrogeology, Marathon PGM-Cu Project. Prepared by True Grit Consulting Limited	TGCL, 2011c
15	Impact Assessment – Hydrogeology, Marathon PGM-Cu Project Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2012a
16	Air Quality Impact Assessment, Marathon PGM-Cu Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2012b
17	Impact Assessment Technical Report – Noise, Marathon PGM-Cu Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2012c
18	Draft Conceptual Closure Plan, Marathon PGM-Cu Project. Prepared by True Grit Consulting Limited	TGCL, 2012d
19	Technical Report – Worker Health and Safety, Marathon PGM-Cu Environmental Assessment. Prepared by True Grit Consulting Limited	TGCL, 2012e
20	Baseline Hydrologic Conditions at the Marathon PGM-Cu Project Site. Prepared by Calder Engineering.	Calder, 2012a
21	Marathon PGM-Cu Project - Surface Water Hydrologic Impact Assessment. Prepared by Calder Engineering.	Calder, 2012b
22	Baseline Economic and Social Conditions in the Vicinity of the Marathon PGM-Cu Project. Prepared by gck Consulting Ltd.	gck, 2012
23	Economic and Social Impact Assessment for the Marathon PGM-Cu Project. Prepared by gck Consulting Ltd.	Stanec, 2012
24	Marathon PGM-Cu Project Terrestrial Baseline Environment Program. Prepared by Northern BioScience.	Northern BioScience, 2012a
25	Marathon PGM-Cu Project – Assessment of Impacts on Birds. Prepared by Northern BioScience.	Northern BioScience, 2012b

26	Marathon PGM-Cu Project – Assessment of Impacts on Woodland Caribou. Prepared by Northern BioScience.	Northern BioScience, 2012c
27	A Stage 1 and Stage 2 Archaeological Assessment of Hare Lake and Hare Creek, North of Marathon, McCoy Township, Ontario. Prepared by Ross Archaeological Research Associates.	Ross Archaeological Research Associates, 2009
28	Stage I and II Archaeological Assessment of the Marathon PGM property, north of Marathon Ontario. Prepared by Woodland Heritage Services Ltd.	Woodland Heritage Services Ltd., 2008
29	Marathon Platinum Group Metals – Copper Mining Project Baseline Assessment of the Aquatic and Terrestrial Environment. Prepared by Golder Associates.	Golder Associates, 2009
30	Environmental Baseline Assessment Marathon PGM-Cu Project. Prepared by NAR Environmental Consultants Inc.	NAR, 2007
31	Technical Report on the Updated feasibility Study for the Marathon PGM-Cu Project, Marathon, Ontario, Canada. Prepared by MICON International Ltd.	MICON, 2010

ABBREVIATIONS AND ACRONYMS

AANDC	Aboriginal Affairs and Northern Development Canada
AAQC	Ambient Air Quality Criteria
ABA	Acid-Base Accounting
AIP	Agreement In Principle
AOC	Area of Concern
ANFO	Ammonium Nitrate Fuel Oil
AP	Acid Potential
APS	Anishinabek Police Service
AQI	Air Quality Index
AR Act	Aggregate Resources Act (Ontario)
ARD	Acid Rock Drainage
ASL	Above Sea Level
ATV	All-terrain Vehicle
B	Billion
BA	Benefit Agreement
BC MELP	British Columbia Ministry of Environment and Land Protection
BC MOE	British Columbia Ministry of the Environment
BHP	BHP Engineering Pty Ltd.
BNA	Bingwi Neyaashi Anishinaabek First Nation
BOD	Board of Directors
BP	Before Present
BZA	Biinjitaawabik Zaaging Anishinaabek First Nation
ca	Circa
CAC	Criteria Air Contaminant
CCME	Canadian Council of Ministers of the Environment
CCCma	Canadian Centre for Climate Modeling and Analysis
CDAF	Community Development Assistance Fund
CEA Act	Canadian Environmental Assessment Act (Canada)
CEA Agency	Canadian Environmental Assessment Agency
CEAA	Cumulative Effects Analysis
CEAR	Canadian Environmental Assessment Registry
CEF	Cervid Ecological Framework
CEO	Chief Executive Office

CEP Act	Canadian Environmental Protection Act (Canada)
CEZ	Cervid Ecological Zone
CFS Act	Crown Forest Sustainability Act (Ontario)
CGCM3	Third Generation Coupled Global Climate Model
CIER	Centre for Indigenous Environmental
CL	Critical Load
CNR	Canadian National Rail
COA	Canada Ontario Agreement
COPCs	Constituents of Potential Concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CPR	Canadian Pacific Railway
CSA	Canadian Standards Association
Cu	Copper
CWB	Community Well Being
DFO	Department of Fisheries and Oceans Canada
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
EA	Environmental Assessment
EC	Environment Canada
ECA	Environmental Compliance Approval
EDS	Environmental Design Storm
e.g.	For example
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Field
EMMP	Environmental Monitoring and Management Program
EMRD	Extraction Metallurgy Research Division
EMS	Environmental Management System
EPA	Environmental Protection Act (Ontario)
EPP	Emergency Preparedness Program
EPT	
ERT	Emergency Rescue Team
ES Act	Endangered Species Act (Ontario)

ESA	Environmentally Sensitive Area
FBMP	Forest Bird Monitoring Program
Fe	Iron
FRI	Forest Resource Inventory
FN	First Nations
FWC Act	Fish and Wildlife Conservation Act (Ontario)
G&T	G & T Metallurgical Services Ltd.
GCM	Global Climate Models
GDP	Gross Domestic Product
GFN	Ginoogaming First Nation
GHG	Greenhouse Gases
GWP	Global Warming Potential
ha	Hectare
HADD	Harmful Alteration, Disruption, Destruction
HDPE	High-density polyethylene
HHRA	
HO	Harmonization Order
HPGR	High Pressure Grinding Roll
HQ	Hazard Quotient
Hwy	Highway
IBA	Impacts and Benefits Agreement
IDF	Inflow Design Flood
i.e.	That is
IMT	Incident Management Team
INAC	Indian and Northern Affairs Canada
IPCC	International Panel on Climate Change
IRI Act	International River Improvements Act (Canada)
JCC	Joint Consultation Committee
JORC	Joint Ore Reserves Committee
JRP	Joint Review Panel
JSL	Jurisdictional Screening Levels
km	Kilometer
KP	Knight Piesold
kV	Kilovolts

LaMP	Lakewide Management Plan
LEL	Lowest Effect Levels
LIDAR	Light Detection and Ranging
LL58	Lake Lake No. 58 First Nation
LMOC	Layered Magnetite Olivine Cumulate
LOS	Levels of Service
LRI Act	Lakes and Rivers Improvement Act (Ontario)
LSA	Local Study Area
LSBP	Lake Superior Binational Program
m	Metre
M	Million
M Act	Mining Act (Ontario)
MBC Act	Migratory Birds Convention Act (Canada)
MC	MC Mining Ltd
MDL	Method Detection Limited
MEDC	Marathon Economic Development Corporation
MIBC	Methyl
ML	Metal Leaching
MLS	Multiple Listing Service
MMEEM	Metal Mining Environmental Effects Monitoring
MMER	Metal Mining Effluent Regulations (Canada)
MNDMF	Ministry of Northern Development, Mines and Forestry
MNO	Métis Nation of Ontario
MNR	Ministry of Natural Resources
MOE	Ministry of the Environment
MOU	Memorandum of Understanding
MPI	Marathon Pulp Inc.
MPGM	Marathon PGM Corporation
MPMO	Major Projects Management Office
MRSA	Mine Rock Storage Area
MSDS	Material Safety Data Sheet
MTO	Ministry of Transportation
MW	Mega Watts
N	Nitrate

NAAQOs	National Ambient Air Quality Objectives
NAG	Non-Acid Generating
NEB	National Energy Board
NFPA	National Fire Protection Agency
NI	National Instrument
NP	Neutralization Potential
NPRI	National Pollution Release Inventory
NoC	Noitce of Commencement
NOEGTS	Northern Ontario Engineering Geology Terrain Study Maps
NO _x	Nitrogen Oxides
NRCan	Natural Resources Canada
NSR	Net Smelter Returns
NWP Act	Navigable Waters Protection Act (Canada)
NWPP	Navigable Waters Protection Program
O.Reg	Ontario Regulation
OB	Overburden
OBBN	Ontario Benthos Biomonitoring Network
OCAP	Ontario Coalition of Aboriginal People
ODWS	Ontario Drinking Water Standards
ODWQS	Ontario Drinking Water Quality Standards
OEA Act	Ontario Environmental Assessment Act (Ontario)
OEB	Ontario Energy Board
OER	Ontario Electricity Regulation
OGS	Ontario Geological Survey
OH Act	Ontario Heritage Act (Ontario)
OHSP	Occupational Health and Safety Plan
OM&S	Operations, Maintenance and Surveillance Manual
OMNR	Ontario Ministry of Natural Resources
OMOC	Ontario Ministry of Culture
OMOE	Ontario Ministry of the Environment
OMOL	Ontario Ministry of Labour
OMOT	Ontario Ministry of Transportation
OPP	Ontario Provincial Police
OWR Act	Ontario Water Resources Act (Ontario)

oz	Ounces
PAG	Potentially Acid Generating
PAX	Potassium Amyl Xanthate
PC	Parks Canada
PCB	Polychlorinated Biphenyls
PETN	Pentaerythritol Tetranitrate
PGE	Platinum Group Element
PGM	Platinum Group Metal
PL Act	Public Lands Act (Ontario)
PM	Particulate Matter
PMFN	Pic Moberg First Nation
POW	Prisoner of War
PPFN	Pays Plat First Nation
PRFN	Pic River First Nation
PSMF	Process Solids Management Facility
PSQG	Provincial Sediment Quality Guidelines
PTHI Act	Public Transportation and Highway Improvement Act (Ontario)
PWQO	Provincial Water Quality Objectives
RAP	Remedial Action Plan
RBC	Rotating Biological Contractor
RDP	Results Driven Policing
RH	Relative Humidity
RIB	Rheomorphic Intrusive Breccia
RSA	Regional Study Area
RSMIN	Red Sky Métis Independent Nation
SAG	Semi-Autogenous Grinding
SAP	Strategic Action Plan
SAR	Sodium Absorption Ratio
SARA	Species at Risk Act (Canada)
SCI	Stillwater Canada Incorporated
SEL	Severe Effects Level
SNSMC	Superior North Shore Metis Council
SO ₂	Sulphur Dioxide
SOP	Standard Operating Procedures

SPLP	Synthetic Precipitation Leaching Procedure
SSA	Site Study Area
SWC	Stillwater Mining Company
TAD	Technical Assessment Document
TBM	Tunnel Boring Machine
TC	Transport Canada
TDS	Total Dissolved Solids
TDL	Two Duck Lake
TEK	Traditional Ecological Knowledge
TGCL	True Grit Consulting Limited
TK	Traditional Knowledge
TKN	Total Kjeldahl Nitrogen
TLU	Traditional Land Use
TNM	Traffic Noise Modeling
TNT	Trinitrotoluene
TOC	Total Organic Carbon
ToR	Terms of Reference
TPD	Tonnes Per Day
TSP	Total Suspended Particulate
TSSA	Technical Standards and Safety Act
TSS	Total Suspended Solids
TSX	Toronto Stock Exchange
URL	Uniform Resource Locator
VA	Voluntary Agreeemnt
VEC	Valued Ecosystem Component
WHMIS	Workplace Hazardous Materials Information System
WMU	Wildlife Management Units
WQO	Water Quality Objectives
WRMMP	Waste and Recycling Material Management Program
WTG	Wind Turbine Generator
WTP	Water Treatment Plant
WWII	World War Two
XPS	Xstrata Processing Services