



BC EAO EAC Application – Tenas Project

Section 0.2 List of Figures

May 2022

VERSION 1.0

Submitted to:	BC Environmental Assessment Office
Pursuant to:	<i>Environmental Assessment Act</i> , S.B.C. 2002, c.43
Submitted by:	Telkwa Coal Limited Suite 1410 – 409 Granville Street Vancouver, BC V6C 1T2

Tenas Project

LIST OF FIGURES

PART A INTRODUCTION

Section 1.0 Overview of Project Proponent Description

Figure 0-1:	Project Location	xxxviii
Figure 1.2-1:	Project Location	1
Figure 1.2-2:	Site Plan.....	2
Figure 1.2-3:	Wet'suwet'en Traditional Territory	3
Figure 1.8-1:	Telkwa Property Regional Geology	9
Figure 1.8-2:	Table of formations for the Telkwa Property.....	10
Figure 1.8-3:	Schematic stratigraphy of Skeena Group for the Telkwa Property.....	11
Figure 1.8-4:	Representative regional stratigraphic section of the Bulkley Canyon Formation for the Telkwa Property	12
Figure 1.8-5:	Stratigraphy of Unit 1 of the Bulkley Canyon Formation in the Tenas Project.....	14
Figure 1.8-6:	Seam 1 in green with Seam 1L in pink where it included parting of up to 0.20 metres (m) thick, while red lines are faults	15
Figure 1.8-7:	Tenas Project geology, drillholes, and reference for cross sections	16
Figure 1.8-8:	Isometric view of seam 1 bottom (light brown), faults (red) and 2019 drillhole locations including selected 2019 drillholes looking northwest.....	18
Figure 1.8-9:	Isometric view of seam 1 bottom (light brown), faults (red) and 2019 drillhole locations including selected 2019 drillholes looking southeast.....	19
Figure 1.8-10:	Longitudinal isometric view of syncline axis with orientation (azimuth and degrees).....	20
Figure 1.8-11:	Tenas Project Geologic cross section 5400	21
Figure 1.8-12:	Tenas Project Geologic cross section 5150	22
Figure 1.8-13:	Tenas Project Geologic cross section 5100	23
Figure 1.8-14:	Tenas Project Geologic cross section 4925	24
Figure 1.8-15:	Tenas Project Geologic cross section 4800	25
Figure 1.8-16:	Tenas Project Geologic cross section 4275	26
Figure 1.8-17:	Tenas Project Geologic cross section 4125	27

Figure 1.8-18: Isometric view of overburden units showing 2019 sonic drillholes	29
Figure 1.8-19: Coal quality drilling for the Tenas Project	31
Figure 1.8-20: Tenas Project insitu coal ash values in percent (adb)	33
Figure 1.8-21: Tenas Project insitu coal total sulfur values in percent (adb)	34
Figure 1.8-22: Tenas Project insitu coal volatile matter values in percent (adb)	35
Figure 1.8-23: Tenas Project plan view of the resource classifications	38
Figure 1.9-1: Project Area and Footprint.....	42
Figure 1.9-2: Water management infrastructure in place for Tenas Control Pond construction Year - 0.5.....	59
Figure 1.9-3: Water management during Tenas Control Pond fill up with water at the end of Year 0	60
Figure 1.9-4: Mining to 4-metre (m) platform above c seam	63
Figure 1.9-5: Mining to the top of 1U Seam or 1 Seam.....	63
Figure 1.9-6: Footwall stabilization blast pattern design	67
Figure 1.9-7: Highwall stabilization blast pattern design	68
Figure 1.9-8: Water management infrastructure at the end of the Operation Phase	70
Figure 1.9-9: Project status at the end of Year -0.5	73
Figure 1.9-10: Project status at the end of Year 0, with end of the Construction Phase	74
Figure 1.9-11: Completion of Construction Phase activities at end of Year 0 for the entire Project.....	75
Figure 1.9-12: Project status at the end of Year 1	76
Figure 1.9-13: Project status at the end of Year 2	77
Figure 1.9-14: Project status at the end of Year 3	78
Figure 1.9-15: Project status at the end of Year 4	79
Figure 1.9-16: Project status at the end of Year 5	80
Figure 1.9-17: Project status at the end of Year 10	81
Figure 1.9-18: Project status at the end of Year 15	82
Figure 1.9-19: Project status at the end of mining at the end of Year 21.....	83
Figure 1.9-20: Project status at the end of Decommissioning and Reclamation Phase at end of Year 25	84
Figure 1.9-21: Project status at the end of Decommissioning and Reclamation Phase at end of Year 25 for the entire Project Footprint	85

Figure 1.9-22: Project status at the end of Post-closure Phase at the end of Year 50	86
Figure 1.9-23: Project status at the end of Post-closure Phase at end of Year 50 for the entire Project Footprint	87
Figure 1.9-24: Plan view of water management features at the end of the Operation Phase	95
Figure 1.9-25: Plan View of management and control ponds at the end of the Operation Phase	96
Figure 1.9-26: Tenas Control Pond embankment and buttress Cross Section A-A' at the end of the Operation Phase	97
Figure 1.9-27: North Management Pond embankment and buttress Cross Section B-B' at the end of the Operation Phase	98
Figure 1.9-28: East Management Pond embankment and buttress Cross Section C-C' at the end of the Operation Phase.....	99
Figure 1.9-29: West Management Pond embankment Cross Section D-D' at the end of the Operation Phase	100
Figure 1.9-30: East and West Management Pond embankment Cross Section E-E' at the end of the Operation Phase.....	101
Figure 1.9-31 a: Explosive Facility Sedimentation Pond at the end of the Operation Phase	102
Figure 1.9-31 b: Explosive Magazine Sedimentation Pond at the end of the Operation Phase	103
Figure 1.9-32: Coal Processing Plant (CPP) Sedimentation Pond at the end of the Operation Phase	104
Figure 1.9-33: Rail Infrastructure Sedimentation Pond at the end of the Operation Phase	105
Figure 1.9-34b: Potable Water Storage Pond profile at the End of the Operation Phase	107
Figure 1.9-35: Wastewater Storage Pond at the end of the Operation Phase.....	108
Figure 1.9-36a: Soil Treatment Facility at the End of the Operation Phase.....	109
Figure 1.9-36b: Soil Treatment Facility profile at the End of the Operation Phase.....	110
Figure 1.9-37: Backfill plan, cross section and long section at the end of the Operation Phase	112
Figure 1.9-38: Backfill plan cross section A-A' at the end of the Operation Phase.....	113
Figure 1.9-39: Backfill plan cross section B-B' at the end of the Operation Phase.....	114
Figure 1.9-40: Backfill plan cross section C-C' at the end of the Operation Phase	115
Figure 1.9-41: Backfill plan cross section D-D' at the end of the Operation Phase	116

Figure 1.9-42: Management, Control, Water Storage, and Sedimentation Ponds status at the end of Year 5.....	141
Figure 1.9-43: Tenas Control Pond at the end of Year -0.5	142
Figure 1.9-44: Tenas Control Pond at the end of Year 0	143
Figure 1.9-45: Tenas Control Pond at the end of Year 1 with no further activity between Year 2 and 5.....	144
Figure 1.9-46: North Management Pond at the end of Year -0.5.....	145
Figure 1.9-47: North Management Pond at end of Year 0	146
Figure 1.9-48: North Management Pond at end of Year 1	147
Figure 1.9-49: North Management Pond at end of Year 2	148
Figure 1.9-50: North Management Pond at end of Year 3	149
Figure 1.9-51: North Management Pond at end of Year 4	150
Figure 1.9-52: North Management Pond at end of Year 5	151
Figure 1.9-53: East Management Pond at end of Year 1, no activity in Year -0.5 and 1	152
Figure 1.9-54: East Management Pond at end of Year 2.....	153
Figure 1.9-55: East Management Pond at end of Year 3.....	154
Figure 1.9-56: East Management Pond at end of Year 4.....	155
Figure 1.9-57: East Management Pond at end of Year 5.....	156
Figure 1.9-58: West Management Pond at end of Year 3, with no activity between Years -0.5 and 2	157
Figure 1.9-59: West Management Pond at the end of Year 4.....	158
Figure 1.9-60: West Management Pond at end of Year 5.....	159
Figure 1.9-61: East and West Management Pond separation embankment at end of Year 2.....	160
Figure 1.9-62: East and West Management Pond separation embankment at the end of Year 3	161
Figure 1.9-63: East and West Management Pond separation embankment at end of Year 4.....	162
Figure 1.9-64: East and West Management Pond separation embankment at end of Year 5.....	163
Figure 1.9-65a: Explosive Facility Sedimentation Pond Plan View.....	164
Figure 1.9-65b: Explosive Magazine Sedimentation Pond Plan View	165
Figure 1.9-66: CPP Sedimentation Pond Plan View	166
Figure 1.9-67: Rail Infrastructure Sedimentation Pond Plan View	167

Figure 1.9-68a: Potable Water Storage Pond completed in Year 0	168
Figure 1.9-68b: Potable Water Storage Pond completed in Year 0, no further activity in Years 1 through 5.....	169
Figure 1.9-69: Soil Treatment Facility embankment completed in Year 0 with no further activity in Years 1 through 5	170
Figure 1.9-70: Wastewater Storage Pond completed in Year 0 with no further activity in Years 1 through 5.....	171
Figure 1.9-71: View of the open pit backfill status at the end of Year 5	173
Figure 1.9-72: Water management infrastructure at the end of the Decommissioning and Reclamation Phase	177
Figure 1.9-73: Water management infrastructure after the Active portion of the Post-closure Phase	179
Figure 1.10-1: Site Plan showing Project Components.....	182
Figure 1.10-2: Project Components	183
Figure 1.10-3: Project related Mine Infrastructure Complex (MIC) isometric view.....	184
Figure 1.10-4: Designated areas for light vehicles (LV) and heavy vehicles (HV).....	185
Figure 1.11-1: Cut-off strip ratio analysis results.....	187
Figure 1.11-2: Open pit shell 23 determined by the open pit optimization process	188
Figure 1.11-3: Final pit floor dips within the environmental assessment (EA) open pit	190
Figure 1.11-4: Plan location showing drillholes used for geotechnical data collection for the Tenas Project.....	192
Figure 1.11-5: Major fault interactions(red) within the environmental assessment (EA) open pit design (grey).....	194
Figure 1.11-6: Schematic representation of open pit slope design sections.....	196
Figure 1.11-7: Schematic representing the open pit wall geotechnical design sections for the environmental assessment (EA) open pit	197
Figure 1.11-8: Three-dimensional (3D) analyses results for sensitivity scenario where undercut bedding slope is not supported with an excavation strategy for the environmental assessment (EA) open pit.....	200
Figure 1.11-9: Three-dimensional (3D) analyses results for sensitivity scenario where undercut bedding slope is not supported with an excavation strategy for the environmental assessment (EA) open pit.....	200
Figure 1.11-10: Schematic representation of open pit geotechnical slope design sectors and phases for the environmental assessment (EA) open pit prior to backfilling	202

Figure 1.11-11: Location of placed backfill and overburden cover at end of the Decommissioning and Reclamation phase of the environmental assessment (EA) open pit.....	205
Figure 1.11-12: Geotechnical Design Section 1 of the environmental assessment (EA) Phase 3 open pit with backfilling completed (post Decommissioning and Reclamation Phase configuration)	206
Figure 1.11-13: Schematic figure showing interim endwall and backfilling within the environmental assessment (EA) Phase 3 Open Pit	206
Figure 1.11-14: Schematic figure showing localized groundwater conditions with the environmental assessment (EA) open pit	208
Figure 1.11-15: Plan view of the open pit with cross sections and longitudinal sections illustrated	210
Figure 1.11-16: Open pit longitudinal section 1	211
Figure 1.11-17: Open pit longitudinal section 2.....	212
Figure 1.11-18: Open pit cross section 2950	213
Figure 1.11-19: Open pit cross section 3475	214
Figure 1.11-20: Open pit cross section 4125	215
Figure 1.11-21: Open pit cross section 4800	216
Figure 1.11-22: Open pit cross section 5400	217
Figure 1.11-23: Deepest coal seam dips within the environmental assessment (EA) open pit	219
Figure 1.11-24: Environmental assessment (EA) open pit phases	220
Figure 1.11-25: Environmental assessment (EA) open pit showing mining cuts for phases.....	222
Figure 1.11-26: Surface water diversion channels C05 and C02.....	224
Figure 1.11-27: Maximum groundwater drawdown zone from environmental assessment (EA) open pit development	226
Figure 1.11-28: Aerial distribution of reserve classifications	228
Figure 1.13-1: External and/or backfill pile geometry definitions.....	236
Figure 1.13-2: Stratigraphic column with material zones classified as non-PAG or PAG based on geochemical and mining classifications	240
Figure 1.13-3: Acid base accounting (ABA) exploration drillhole locations in reference to the environmental assessment (EA) open pit.....	242
Figure 1.13-4: Material management decision flow diagram for Tenas Project.....	246
Figure 1.13-5: Core picture of mudstone rock type.....	250

Figure 1.13-6: Fault model shown for the proposed environmental assessment (EA) open pit (red are faults and grey is open pit outline)	251
Figure 1.13-7: End pit lake elevations at the end of the Post-closure Phase	254
Figure 1.13-8: Location of backfill stability sections within environmental assessment (EA) open pit.....	256
Figure 1.13-9: Backfill section 2 for Phase 4 open pit.....	257
Figure 1.13-10: Schematic showing interim endwall and backfilling within the Phase 3 open pit	257
Figure 1.13-11: Slide analyses results for the Mining Phase 3 open pit with Stage 6 backfill as part of the excavation strategy	259
Figure 1.13-12: Schematic showing the mining of Phase 3 (south phase) open pit excavation and backfilling sequence	261
Figure 1.13-13: Plot of pile crest advance rate versus pile height	264
Figure 1.14-1: Surface Soil Stockpiles for the Southern portion of the Project footprint	267
Figure 1.14-2: Surface Soil Stockpiles for the Northern portion of the Project footprint	268
Figure 1.14-3: Reclamation material (surface soil) stockpile stability analyses results.....	272
Figure 1.14-4: Processed coal stockpile stability analyses results	272
Figure 1.14-5: Processed rock stockpile stability analyses results	273
Figure 1.14-6: Run-of-mine (ROM) coal stockpile stability analyses results.....	273
Figure 1.15-1: Coal Processing Plant (CPP) isometric view from the thickener	274
Figure 1.15-2: Coal Processing Plant (CPP) isometric view from the feed point.....	275
Figure 1.15-3: Tenas Project Coal Processing Plant (CPP) location.....	276
Figure 1.15-4: Tenas Project Coal Processing Plant (CPP) isometric view.....	277
Figure 1.15-5: Dense Medium Cyclone (DMC)/flotation Coal Processing Plant (CPP) block flowsheet schematic	285
Figure 1.15-6: Coal Processing Plant (CPP) detailed plant flowsheet.....	287
Figure 1.15-7: Coal Processing Plant (CPP) coarse ROM coal circuit schematic	289
Figure 1.15-8: Coal Processing Plant (CPP) flotation circuit schematic for fine run-of-mine (ROM) coal	290
Figure 1.15-9: Coal Processing Plant (CPP) fine processed rock (reject) circuit schematic.....	292
Figure 1.15-10: Coal Processing Plant (CPP) typical modular arrangement sample 1	295

Figure 1.15-11: Coal Processing Plant (CPP) typical modular arrangement sample 2	295
Figure 1.15-12: Coal Processing Plant (CPP) laboratory layout	299
Figure 1.15-13: Super B-train truck configuration	301
Figure 1.16-1: Proposed floor plan for the Administration and Mine Dry Building	303
Figure 1.16-2: Photo of typical building that will be used for Light Vehicle Maintenance and Mine Rescue buildings	305
Figure 1.16-3: Isometric view of Maintenance Facility	306
Figure 1.16-4: Maintenance Facility plan view	307
Figure 1.16-5: 90-tonne rigid frame truck jacking pad	309
Figure 1.16-6: Security Boom Gate Locations	311
Figure 1.17-1: Water management overview at the end of the Operation Phase	315
Figure 1.17-2: Flocculation building general arrangement drawing	320
Figure 1.17-3: Process water distribution schematic	326
Figure 1.17-4: Example of Potable Water Treatment Plant	328
Figure 1.17-5: Example of a Sewage Treatment Plant	329
Figure 1.17-6: Summary of pumping strategy for management, sedimentation, and control ponds during the Operation, and Decommissioning and Post-closure Phases	331
Figure 1.17-7: Summary of water flows in Post-closure Phase	332
Figure 1.17-8: Mine Infrastructure Complex (MIC) water and power distribution network	333
Figure 1.17-9: Explosive Facility water and power distribution network	334
Figure 1.17-11: Conceptual water and load balance model at the end of Post- closure Phase	337
Figure 1.17-12: Monthly average precipitation conditions	338
Figure 1.17-13: Tenas Project Groundwater Conceptual Model Section View	344
Figure 1.17-14: Groundwater tables in overburden and bedrock with the Environmental Assessment (EA) open pit shown	345
Figure 1.18-1: Example of Pit Fueling Station	350
Figure 1.18-2: Plan view of Pit Fueling Station	352
Figure 1.18-3: Example of Light Vehicle Fueling Station	353
Figure 1.18-4: Diesel fueling and lubricant dispensing station at Rail Infrastructure Fueling Station	355
Figure 1.18-5: Pit Fueling Lubricant Storage Facility	356

Figure 1.18-6:	Lubricant storage facility schematic and location in relation to the Maintenance Facility	358
Figure 1.18-7:	One (1) 30 tonne emulsion silos and one (1) 50 tonne Ammonium Nitrate Fuel Oil (ANFO) silo for Storage	360
Figure 1.18-8:	Example of explosive facility overhead view constructed in 2019 at similar Project in Western Canada	362
Figure 1.18-9:	Example of explosive magazine that will be used for the Tenas Project	362
Figure 1.19-1:	25 kV powerline location in relation to BC Hydro 25 kV grid	367
Figure 1.19-2:	Sectionalizing three (3)-phase cut-outs	372
Figure 1.19-3:	Primary revenue metering phase four (4) Wire J7-01.01 and three (3)-phase tangent skypin	372
Figure 1.19-4:	Basic line structures three (3)-phase angle 5°-25° and three (3)-phase horizontal angle 30°-60° crossarm	373
Figure 1.19-5:	Basic line structures three (3)-phase angle 25°-45° flat and three (3)-phase corner 45°-90°	373
Figure 1.19-6:	Single-phase transformer framing step-down tap, pole mounted and three (3)-phase dead end	374
Figure 1.19-7:	4,000 kilovolt amps (kVA), 25 kilovolt (kV) to 600-volt (V) Minesite substation	375
Figure 1.19-8:	Electrical House (E-House) for Tenas Project	376
Figure 1.19-9:	Plan view of the planned electrical distribution system for the Mine Infrastructure Complex (MIC) pad	378
Figure 1.19-10:	Power distribution at Explosive Facility pad	379
Figure 1.19-11:	Single line diagram for the Tenas Project	380
Figure 1.20-1:	Historical public access with road regulatory ownership	382
Figure 1.20-2:	Ongoing public access with road regulatory ownership	384
Figure 1.20-3:	Public and Project access with road regulatory ownership	386
Figure 1.20-4:	Access to the Project Area after the Project's Construction phase for Inset 2	387
Figure 1.20-5:	Tenas Access Corridor (TAC) relevant features	389
Figure 1.20-6:	Typical cross sections for the Tenas Access Corridor (TAC)	390
Figure 1.20-7:	Profile of the Tenas Access Corridor (TAC)	391
Figure 1.20-8:	Pavement design for the Tenas Access Corridor (TAC)	393
Figure 1.20-9:	Plan view of livestock fence locations for the Tenas Access Corridor (TAC)	395

Figure 1.20-10: Typical livestock fence details for Tenas Access Corridor (TAC).....	396
Figure 1.20-11: Typical livestock level crossing for the Tenas Access Corridor (TAC).....	397
Figure 1.21-1: Rail Infrastructure design for the Project	403
Figure 1.21-2: Photo of similar Rail Infrastructure design for the Project	404
Figure 1.21-3: Typical Rail Infrastructure Loading Pad	406
Figure 1.21-4: Typical rail car set up prior to loading of the train after Canadian National Rail (CNR) drop off	408
Figure 1.21-5: Water Management for Rail Infrastructure Area	412
Figure 1.22-1: Cross-section locations and potential weaker material Zone 1 and 2 areas	421
Figure 1.22-2: TCP-01 Stability Cross Section - geometric configuration.....	422
Figure 1.22-3: TCP & NMP-01 (TCP) stability cross section - geometric configuration.....	423
Figure 1.22-4: TCP & NMP-01 (NMP) Stability Cross Section - geometric configuration.....	424
Figure 1.22-5: NMP-01 Stability Cross Section - geometric configuration.....	425
Figure 1.22-6: NMP-02 Stability Cross Section - geometric configuration.....	426
Figure 1.22-7: NMP & WMP-01 (WMP) Stability Cross Section - geometric configuration.....	427
Figure 1.22-8: NMP & WMP (NMP) Stability Cross Section - geometric configuration.....	428
Figure 1.22-9: WMP-01 Stability Cross Section - geometric configuration	429
Figure 1.22-10: WMP-02 Stability Cross Section - geometric configuration	430
Figure 1.22-11: EMP & WMP-01 Stability Cross Section - geometric configuration.....	431
Figure 1.22-12: EMP-01 Stability Cross Section - geometric configuration	432
Figure 1.22-13: EMP-02 Stability Cross Section - geometric configuration	433
Figure 1.22-14: EMP-03 Stability Cross Section - geometric configuration	434
Figure 1.22-15: Dividing embankment groundwater condition for East Management Pond when completed	435
Figure 1.22-16: Typical Compaction Procedure - EMP-01 Section (not at scale)	438
Figure 1.22-17: Coletanche bituminous waterproof geomembrane	441
Figure 1.22-18: Permeability Coefficients for Coletanche	442
Figure 1.22-19: Typical installation of a bituminous liner in a large sedimentation pond	443

Figure 1.22-20: Piezometer proposed locations	448
Figure 1.22-21: Piezometer proposed locations section view (illustrative)	449
Figure 1.23-1: Location of Gravel Quarry	452
Figure 1.23-2: Plan View of Gravel Quarry Pit 1 at end of Year 1 when it is completed.....	454
Figure 1.23-3: Plan View of Gravel Quarry Pit 2 at end of Year 12 when it is completed.....	456
Figure 1.24-1: Location of the Rock Quarry	459
Figure 1.24-2: Plan View of Pit 2 at end of Operation Phase showing cross sections A'-A, and B'-B	460
Figure 1.24-3: Cross section A-A' for the Rock Quarry	461
Figure 1.24-4: Cross section B-B' for the Rock Quarry	462
Figure 1.25-1: Two potential offsite parking lot locations for employee bussing.....	464
Figure 2.3-1: Example of hazardous waste facility that will be used for the Tenas Project	471
Figure 5.2-1: Land Ownership	509
Figure 7.2-1: Seaborne metallurgical coal market product types.....	567
Figure 7.2-2: Seaborne coal imports into China and India.....	568
Figure 7.2-3: Global trends in mining investor returns and capital expenditures in the metal and mining industry	568
Figure 7.2-4: Tenas Project position on the seaborne export metallurgical cost curve	569

Section 2.0 Environmental Assessment (EA) Process

Chapter 1 Provincial and Federal EA Process

n/a

PART B – Assessment of Environmental, Economic, Social, Heritage and Health Effects

Section 3.0 Assessment Methodology

Chapter 1 Assessment Methodology

Figure 3.1-1: Project Area	13
Figure 6.2-1: Location of present and reasonably foreseeable projects and activities	29

Section 4.0 Environmental Effects Assessment**Chapter 1 Atmospheric Environment Valued Component**

Figure 3.2-1:	Air Quality Local and Regional Study Areas.....	11
Figure 3.2-2:	Noise Local and Regional Study Areas	12
Figure 4.2-1:	Temperature regime from Smithers Airport climate normals.....	20
Figure 4.2-2:	Precipitation regime from Smithers Airport climate normals.....	20
Figure 4.2-3:	Wind roses for the Air Quality Regional Study Area (RSA) - Smithers St Josephs, 2015.....	21
Figure 4.2-4:	Wind roses for the Air Quality Regional Study Area (RSA) - Telkwa, 2015.....	22
Figure 4.2-5:	Wind roses for the Air Quality Regional Study Area (RSA) - Pine Creek, 2015.....	23
Figure 4.2-6:	Wind roses for the Air Quality Regional Study Area (RSA) - Tenas Deposit, 2018.....	24
Figure 4.2-7:	Seasonal variation in measured particulate matter less than 10 microns in diameter (PM ₁₀) concentrations.....	26
Figure 4.2-8:	Seasonal variation in measured particulate matter less than 2.5 microns in diameter (PM _{2.5}) concentrations.....	26
Figure 4.2-9:	Summary of measured dustfall deposition rates.....	28
Figure 5.2-1:	Maximum Predicted 24-hour TSP Concentrations (µg/m ³)	39
Figure 5.2-2:	Predicted Annual TSP Concentrations (µg/m ³)	40
Figure 5.2-3:	Maximum Predicted 24-hour PM ₁₀ Concentrations (µg/m ³)	41
Figure 5.2-4:	Maximum Predicted 24-hour PM _{2.5} Concentrations (µg/m ³).....	42
Figure 5.2-5:	Predicted Annual PM _{2.5} Concentrations (µg/m ³).....	43
Figure 5.2-6:	Maximum Predicted 1-hour NO ₂ Concentrations (µg/m ³).....	44
Figure 5.2-7:	Maximum Annual NO ₂ Concentrations (µg/m ³)	45
Figure 5.2-8:	Maximum Predicted 1-hour SO ₂ Concentrations (µg/m ³).....	46
Figure 5.2-9:	Predicted Annual SO ₂ Concentrations (µg/m ³).....	47
Figure 5.2-10:	Maximum Predicted 30-Day Dustfall Deposition (µg/m ³)	48
Figure 6-1:	Map of Projects and Activities for Cumulative Effects Assessment.....	64

Chapter 2 Terrain and Soils Valued Component

Figure 3.2-1:	Spatial assessment boundaries for the Terrain and Soils Valued Component.....	11
---------------	--	----

Figure 4.2-1:	Area extent of Slope Stability Class within the Project Area and Terrain and Soils Local Study Area	20
Figure 4.2-2:	Area extent of Soil Map Units within the Project Area and Terrain and Soils Local Study Area	23
Figure 4.2-3:	Area extent of Soil Salvage Potential within the Project Area and Terrain and Soils Local Study Area	30
Figure 4.2-4:	Area extent of Soil Erosion Potential within the Project Area and Terrain and Soils Local Study Area	31
Figure 4.2-5:	Area extent of Agricultural Capability Classes within Project Area and Terrain and Soils Local Study Area in the Agricultural Land Reserve	33
Figure 6-1:	Projects included in the Cumulative Effects Assessment for the Terrain and Soils VC	62
Chapter 3	Surface Water Valued Component	
Figure 3.2-1:	Local and Regional Study Areas for Surface Water Valued Component	12
Figure 4.1-1:	Monitoring Map for Baseline Characterisation of Surface Water Quantity	20
Figure 4.2-1:	Monthly Runoff Rates (millimetre [mm]) at Representative Regional Monitoring Stations (WSC) for Various Percentile Flow Conditions, including 5 th (Grey), 50 th (Orange) and 95 th (Blue) Monthly Runoff Percentiles	28
Figure 4.2-2:	Monthly Runoff Distribution for Local Hydrometric Stations based on Measured Data from 2017 to 2020, including Tenas-Hydro (Grey), Goathorn-Hydro (Blue), Telkwa-Hydro (Orange), and Four-Hydro (Yellow)	29
Figure 6.1-1:	Surface Water Cumulative Effects Assessment Project Inclusion List	74
Chapter 4	Groundwater Valued Component	
Figure 3.2-1:	Local and Regional Study Areas for Groundwater	7
Figure 4.2-1:	Aquifers and Private Wells in the Local Study Area	16
Figure 4.2-2:	Groundwater tables in overburden and bedrock in the Tenas area	18
Figure 8-1:	Proposed Groundwater Monitoring Locations	66
Chapter 5	Aquatic Resources Valued Component	
Figure 3.2-1:	Aquatic Resources Local and Regional Study Areas	8

Figure 4.1-1:	Aquatic Resources Sampling Locations	14
Figure 5.2-1:	Mine Footprint and Infrastructure.....	29
Figure 6.1-1:	Map of Projects and Activities for Cumulative Effects Assessment.....	52

Chapter 6 Fish and Fish Habitat Valued Component

Figure 3.2-1:	Fish and Fish Habitat Local and Regional Study Areas	11
Figure 4.1-1:	Fish and Fish Habitat Sampling Locations	17
Figure 4.2-1:	Goathorn Creek and Tenas Creek Tributaries.....	25
Figure 5.2-1:	Mine Footprint and Infrastructure.....	42
Figure 5.2-2:	EFN Policy Stream Sensitivity and Risk Management Process	46
Figure 5.2-3:	Steelhead habitat (Area Weighted Suitability [AWS]) as a function of flow, Reach 1, Four Creek	53
Figure 5.2-4:	Dolly Varden habitat (Area Weighted Suitability [AWS]) as a function of flow, Reach 1, Four Creek	53
Figure 5.2-5:	Dolly Varden habitat (Area Weighted Suitability [AWS]) as a function of flow, Reach 3 and 4, Four Creek	54
Figure 6.1-1:	Map of Projects and Activities for Cumulative Effects Assessment.....	80

Chapter 7 Vegetation Valued Component

Figure 3.2-1:	Spatial assessment boundaries for the Vegetation Valued Component.....	14
Figure 4.2-1:	Old Growth Forest within the Vegetation Study Areas	26
Figure 4.2-2:	Wetlands within the Vegetation Study Areas.....	30
Figure 4.2-3:	Listed Ecological Communities within the Vegetation Study Areas.....	33
Figure 4.2-4:	Ecosystems with the Potential to Support Culturally Important Species Within the Vegetation Study Areas	36
Figure 4.2-5:	Rare Plants and Lichens within the Vegetation Study Areas	38
Figure 6.1-1:	Projects included in the Cumulative Effects Assessment for the Vegetation VC	104

Chapter 8 Wildlife Valued Component

Figure 3.2-1:	Spatial assessment boundaries for the Wildlife Valued Component - Furbearers, Grizzly Bear, Moose, Bats and Western Toad subcomponents.....	20
---------------	---	----

Figure 3.2-2:	Spatial assessment boundaries for the Wildlife Valued Component - Caribou subcomponent.....	21
Figure 3.2-3:	Wildlife Valued Component ecosystem boundaries	25
Figure 4.2-3:	The distribution of anthropogenic disturbance features relative to the WLSA, CRSA1, CRSA2 Core and CRSA2 Matrix	45
Figure 4.2-4:	Telkwa caribou movement paths by season, 2001 to 2004, 2013 to 2015, and 2018	48
Figure 4.2-5:	Telkwa Caribou Herd minimum counts from late-winter (March) and rut (October) recruitment surveys, 2004 to 2019 (Cichowski 2014)	49
Figure 4.2-6:	Grizzly bear spring habitat suitability within the Wide-ranging Wildlife Regional Study Area	53
Figure 4.2-7:	Grizzly bear summer habitat suitability within the Wide-ranging Wildlife Regional Study Area	54
Figure 4.2-8:	Grizzly bear fall habitat suitability within the Wide-ranging Wildlife Regional Study Area	55
Figure 4.2-9:	Moose winter habitat suitability within the Wide-ranging Wildlife Regional Study Area	58
Figure 4.2-10:	Forest Bat foraging habitat suitability within the Wildlife Regional Study Area	62
Figure 4.2-11:	Forest Bat security/thermal habitat suitability within the Wildlife Regional Study Area	63
Figure 4.2-12:	Forest Bat reproductive habitat suitability within the Wildlife Regional Study Area	64
Figure 4.2-13:	Forest Bat hibernation habitat suitability within the Wildlife Regional Study Area	65
Figure 4.2-14:	Western Toad living habitat suitability within the Wildlife Local Study Area	69
Figure 4.2-15:	Western Toad reproduction habitat suitability within the Wildlife Local Study Area.....	70
Figure 4.2-16:	Western Toad hibernation habitat suitability within the Wildlife Local Study Area.....	71
Figure 5.4-1:	Existing disturbance and Project-related disturbance	126
Chapter 9	Avian Species Valued Component	
Figure 3.2-1:	Spatial assessment boundaries for the Avian Species Valued Component.....	13

Figure 4.2-1:	Old/mature forest habitat suitability within the Avian Species Regional Study Area	21
Figure 4.2-2:	Early seral habitat suitability within the Avian Species Regional Study Area	22
Figure 4.2-3:	Wetland habitat suitability within the Avian Species Regional Study Area.....	23
Figure 4.2-4:	Common nighthawk habitat suitability within the Avian Species Regional Study Area	26
Figure 4.2-5:	Olive-sided flycatcher habitat suitability within the Avian Species Regional Study Area	27
Figure 4.2-6:	Short-eared owl habitat suitability within the Avian Species Regional Study Area	28
Figure 4.2-7:	Northern goshawk habitat suitability within the Avian Species Regional Study Area	30
Figure 5.4-1:	Overlap of the Project with suitable nesting habitat for Migratory Breeding Birds – wetlands	62
Figure 5.4-2:	Overlap of the Project with suitable nesting habitat for Migratory Breeding Birds – early seral.....	63
Figure 5.4-3:	Overlap of the Project with suitable nesting habitat for Migratory Breeding Birds – old/mature forest	64
Figure 5.4-4:	Overlap of the Project with suitable nesting habitat for common nighthawk.....	81
Figure 5.4-5:	Overlap of the Project with suitable nesting habitat for olive-sided flycatcher.....	82
Figure 5.4-6:	Overlap of the Project with suitable nesting habitat for short-eared owl.....	83
Figure 5.4-7:	Overlap of the Project with suitable nesting habitat for northern goshawk.....	104
Figure 6.1-1:	Projects and activities included in the Cumulative Effects Assessment for the Avian Species Valued Component	127

Section 5.0 Economic Effects Assessment

Chapter 1 Labour Market Valued Component

Figure 3.2-1:	Labour Market Local and Regional Study Areas	7
Figure 5.2-1:	Direct construction workforce (number of jobs)	30
Figure 5.2-2:	Sourcing of direct Tenas Project workers by number of full-time equivalents (FTE) (TCL employees and contractors).....	31

Figure 5.2-3:	Direct Tenas Project employment during the Operation Phase – TCL employees (jobs).....	33
Figure 5.2-4:	Direct Tenas Project employment during the Operation Phase – contractors (number of jobs).....	34
Table 5.2-2:	Number of Indirect and Induced Jobs During the Operation Phase	35
Figure 6-1:	Project and Activities Included in the Cumulative Effects Assessment for Labour Market	68

Chapter 2 Economic Development Valued Component

Figure 3.2-1:	Economic Development Local and Regional Study Areas	9
Figure 4.2-1:	Total timber harvest in British Columbia (BC) (millions cubic metres [m ³]).....	15
Figure 4.2-2:	British Columbia (BC) job trend in selected industries (annual averages, thousands of persons)	15
Figure 5.2-1:	Operating costs by category and by year (million Canadian dollars)	30
Figure 6-1:	Projects and Activities included in the Cumulative Effects Assessment for Economic Development	66

Chapter 1 Demographics Valued Component

Figure 3.2-1:	Demographics Local and Regional Study Areas	7
Figure 4.2-1:	Local Study Area Population Change 2001-2016.....	14
Figure 6.1-1:	Projects and Activities Included in the Cumulative Effects Assessment for Demographics	43

Chapter 2 Visual Resources Valued Component

Figure 3.2-1:	Visual Resources Local and Regional Study Areas	8
Figure 4.2-1:	Visual Resources Viewpoints and Viewshed Analysis	15
Figure 4.2-2:	Current view from PP4.....	17
Figure 4.2-4:	Current view from PP9.....	19
Figure 4.2-5:	Current view from PP10.....	20
Figure 4.2-6:	Current view from PP11.....	21
Figure 4.2-7:	Current view from PP13.....	22
Figure 5.2-1:	Location within the view from PP19.....	34
Figure 5.2-2:	Visual simulation of view from Viewpoint PP4 during Active Phases	36

Figure 5.2-3:	Visual simulation of view from Viewpoint PP5 during Active Phases	37
Figure 5.2-4:	Visual simulation of view from Viewpoint PP9 during Active Phases	37
Figure 5.2-5:	Visual simulation of view from Viewpoint PP10 during Active Phases	38
Figure 5.2-6:	Visual simulation of view from Viewpoint PP13 during Active Phases	39
Figure 5.2-7:	Visual simulation of view from Viewpoint PP11 during Active Phases	40
Figure 5.2-8:	Visual simulation of view from Viewpoint PP4 during Post-closure Phase	43
Figure 5.2-9:	Visual simulation of view from Viewpoint PP5 during Post-closure Phase	44
Figure 5.2-10:	Visual simulation of view from Viewpoint PP9 during Post-closure Phase	44
Figure 5.2-11:	Visual simulation of view from Viewpoint PP10 during Post-closure Phase	45
Figure 5.2-12:	Visual simulation of view from Viewpoint PP13 during Post-closure Phase	46
Figure 5.2-13:	Visual simulation of view from Viewpoint PP11 during Post-closure Phase	47
Figure 5.2-14:	Visual simulation of view of the Rail Infrastructure from Viewpoint PP13	50
Figure 6.1-1:	Projects and Activities Included in the Cumulative Effects Assessment (CEA) for Visual Quality Subcomponent	70
Chapter 3	Infrastructure and Services Valued Component	
Figure 3.2-1:	Infrastructure and Services Local and Regional Study Areas	9
Figure 6.1-1:	Projects and Activities Included in the Cumulative Effects Assessment for Infrastructure and Services Local and Regional Study Areas.....	68
Chapter 4	Land and Resource Use Valued Component	
Figure 2.2-1:	Land and Resource Management Plans in the Local and Regional Study Areas.....	6
Figure 3.2-1:	Land and Resource Use Local and Regional Study Areas	13

Figure 4.2-1:	Bulkley LRMP Resource Management Planning Zones in the Local and Regional Study Areas	18
Figure 4.2-2:	Access in the Regional and Local Study Areas	21
Figure 4.2-3:	Private Land in the Regional and Local Study Areas	23
Figure 4.2-4:	Water wells in the Regional and Local Study Areas	26
Figure 4.2-5:	Parks and Protected Areas in the in the Regional and Local Study Areas	28
Figure 4.2-6:	Coal Licenses and Mineral Claims in the Regional and Local Study Areas	32
Figure 4.2-7:	Forestry Tenures in the Regional and Local Study Areas	34
Figure 4.2-8:	Forestry cutblocks in the Local Study Area	35
Figure 4.2-9:	Energy Transmission, Rail Lines and Oil and Gas Activity in the Regional and Local Study Areas	37
Figure 4.2-10:	Outdoor Recreational Areas in the Regional and Local Study Areas	39
Figure 4.2-11:	Agricultural Land Reserve and Range Tenures in the Regional and Local Study Areas	43
Figure 4.2-12:	Hunting and Guide Outfitting Areas in the Regional and Local Study Areas	45
Figure 4.2-13:	Angling in the Regional and Local Study Areas	48
Figure 4.2-14:	Traplines in the Regional and Local Study Areas	50
Figure 6.1-1:	Projects and Activities Included in the Cumulative Effects Assessment for Land and Resource Use	95

Chapter 5 Community Well-being Valued Component

Figure 3.2-1:	Community Well-being Local and Regional Study Areas	11
Figure 4.2-1:	Wet'suwet'en Holistic Wellness Conceptual Framework	22
Figure 6-1:	Projects and Activities Included in the Cumulative Effects Assessment for Community Well-being	83

Section 7.0 Heritage Effects Assessment

Chapter 1 Heritage Resources Valued Component

Figure 3.2-1:	Heritage Resources Local and Regional Study Areas	8
Figure 4.2-1:	Known Historic and Cultural Sites	19

Section 8.0 Health Effects Assessment**Chapter 1 Human Health Valued Component**

Figure 3.2-1:	Local Study Areas (LSA) and Regional Study Areas (RSA) for Human Health	11
Figure 6-1:	Map of Projects and Activities Considered for the Cumulative Effects Assessment	88

Section 9.0 Accidents and Malfunctions

Figure 4.3-1:	Summary of Likelihood definitions	9
Figure 4.3-2:	Summary of Consequence definitions	10
Figure 4.3-3:	Summary of Risk Assessment ratings	10

Section 10.0 Effects of the Environment on the Project

Figure 1.2-1:	Summary of Likelihood definitions	3
Figure 1.2-2:	Summary of Consequence definitions	4
Figure 1.2-3:	Summary of Risk Assessment ratings	4
Figure 2.1-1:	Forecast of climate change effect on mean annual air temperature	6
Figure 2.1-2:	Forecast of climate change effect on mean annual precipitation (MAP)	8
Figure 2.1-3:	Tenas Creek monthly streamflow summary for historical conditions and climate change conditions in 2100 with Representative Concentration Pathway (RCP) 4.5	11
Figure 2.1-4:	Four Creek monthly streamflow summary for historical conditions and climate change conditions in 2100 with Representative Concentration Pathway (RCP) 4.5	12
Figure 2.1-5:	Goathorn Creek monthly streamflow summary for historical conditions and climate change conditions in 2100 with Representative Concentration Pathway (RCP) 4.5	12
Figure 2.1-6:	Telkwa River monthly streamflow summary for historical conditions and climate change conditions in 2100 with Representative Concentration Pathway (RCP) 4.5	13
Figure 2.1-7:	Bulkley River monthly streamflow summary for historical conditions and climate change conditions in 2100 with Representative Concentration Pathway (RCP) 4.5	13
Figure 4.1-1:	Average Lightning Flash Density (per square kilometre per year [km ² /yr]) in Western Canada from 1999-2018	40

Figure 5.1-1:	Terrain Stability Classes in the Local Study Area.....	45
Figure 5.2-1:	Evacuation Routes.....	48
Figure 6.1-1:	Seismic hazard map for British Columbia.....	50

PART C WET'SUWET'EN RIGHTS AND INTERESTS

Section 11.0 Wet'suwet'en Rights and Interests Assessment

Figure 2.8-1:	Wet'suwet'en Traditional Territory and House Territories in relation to the Project Location	11
Figure 2.8-2:	Wet'suwet'en House Territories in Which the Project is Located	12
Figure 2.8-3:	Wet'suwet'en Traditional Territory and Reserves in Relation to the Project Location	14
Figure 3.2-1:	Systemic view of Wet'suwet'en Governance as a Virtuous Fiduciary Loop	20
Figure 3.2-2:	Systemic view of Wet'suwet'en Aboriginal Rights	22
Figure 3.2-3:	Systems view of Synchronous Fiduciaries of <i>Anuk Nu'at'en</i> within Section 35, Aboriginal rights and right of title	23
Figure 3.3-1:	Median income, 2015, First Nations and non-Indigenous populations, aged 25-64, by region	29
Figure 3.3-2:	Percentage of First Nations with knowledge of an Indigenous language, 2016, by region	32
Figure 6.3-1:	Local Study Area for Wet'suwet'en Rights and Interests: C'inilh K'it and Cosl'et Bin House Territories	50
Figure 6.3-2:	Regional Study Area for Wet'suwet'en Rights and Interests: Wet'suwet'en Traditional Territory	51
Figure 6.4-1:	Wet'suwet'en Fishing Sites Near the Project.....	56
Figure 6.4-2:	Detail from Map 22, "Fishing Sites, <i>tok'k'et</i> " in Skoda 1987	61
Figure 6.4-3:	Wet'suwet'en Holistic Wellness Conceptual Framework.....	62
Figure 6.5-1:	Focused Systems view of Synchronous Fiduciaries of Anuk Nu'at'en within Section 35, Aboriginal rights and right of title.....	75
Figure 6.5-2:	Systems view of potential effects of a new project on the integrity of Wet'suwet'en Section 35, Aboriginal rights and right of title in the absence of collaborative governance	77
Figure 6.6-1:	Systems view of collaborative governance as a means for supporting and reinforcing Wet'suwet'en Section 35, Aboriginal rights and right to title per the Tenas Project.....	91
Figure 6.6-2:	Collaboration dynamics.....	92

Figure 6.6-3:	United Nations Sustainable Development Goals.....	96
Figure 7.2-1:	Present and foreseeable projects and activities and Wet'suwet'en Traditional Territory.....	122
Figure 7.2-2:	Present and foreseeable projects and activities and Wet'suwet'en House Territories near the Tenas Project.....	123
Figure 7.2-3:	Present and foreseeable projects and activities and Cas'Yex House Territories	124
Figure 7.2-4:	Present and foreseeable projects and activities and Kwen Bea Yex House Territories	125

Part D Public Consultation

Section 12.0 Public Consultation

Figure 1.1-1:	Project Area.....	2
Figure 1.1-2:	Public Consultation Area	3

PART E MANAGEMENT PLANS AND MANAGEMENT STRATEGIES

Section 13.0 Management Plans

Chapter 1 Environmental Management System

Figure 6.1-1:	Environmental Management System (EMS) Cycle	9
Figure 6.2-1:	Summary of Likelihood Definitions	10
Figure 6.2-2:	Summary of Consequence Definitions	11
Figure 6.2-3:	Summary of Risk Assessment Ratings.....	12
Figure 9.9-1:	Tenas Project Organizational Structure.....	31

Chapter 2 Air Quality Management Plan

Figure 6.1-1:	Project components and air quality receptors.....	6
Figure 6.3-1:	Site map with designated receptors and predicted dust fall contours	11
Figure 6.5-1:	Site map with designated receptors and predicted daytime noise level contours	13
Figure 6.5-2:	Site map with designated receptors and predicted nighttime noise level contours	14

Chapter 3 Chemicals and Materials, Storage, Transfer, and Handling Plan

n/a

Chapter 4 Construction Environmental Management Plan

Figure 3-1:	Project overview	4
Figure 6.6-1:	Best management practices (BMPs) effectiveness	15
Figure 6.6-2:	Example of a silt fence used for sediment control at a bridge site	28
Figure 6.6-3:	Small scale application of the dam and pump technique	30
Figure 6.6-4:	Passive diversion technique – temporary poly-lined channel.....	31
Figure 6.6-5:	Examples of temporary erosion and sediment control methods.....	33
Figure 6.6-6:	Erosion and sediment control plan for construction of the Tenas Control Pond embankment.....	37
Figure 6.6-7:	Erosion and sediment control plan for construction of the internal area of the Tenas Control Pond and interception channels.....	39

Chapter 5 Discharge Management Plan

n/a

Chapter 6 Explosives Management Plan

Figure 6.1-1:	Initial footwall blast design – 12 m bench	10
Figure 6.1-2:	Initial highwall stabilization design – 12 m bench	11
Figure 6.1-3:	Material percent (%) passing configuration	12
Figure 6.3-1:	Plan of the proposed Explosive Magazine storage location	20
Figure 6.3-2:	Photo of 1 x 30 tonne Emulsion Silos for storage and 1 x 50 tonne ammonium nitrate fuel oil (ANFO) silo	22
Figure 6.3-3:	Example of proposed shop complex for the Explosive Facility.....	23
Figure 6.3-4:	Example of proposed Explosive Facility overhead view for Tenas Project	24
Figure 6.3-5:	Explosive Facility location	26
Figure 6.3-6:	2 x typical Type 4 Explosive Magazine	28

Chapter 7 Fuel Management and Spill Control Plan

Figure 6.1-1: Spill/Incident reporting procedures	17
---	----

Chapter 8 Heritage Resources Management Plan

Figure 3.1-1: Heritage Resources Local and Regional Study Areas	2
Figure 6.1-1: Known Historical and Cultural Sites	8

Chapter 9 Mine Emergency Response Plan

Figure 3-1: Explosive Facility location	3
Figure 6.2-1: Summary of Likelihood definitions	9
Figure 6.2-2: Summary of Consequence definitions	10
Figure 6.2-3: Summary of Risk Assessment ratings	10
Figure 6.2-4: SLAM card form	19
Figure 6.6-1: Emergency level assessment – decision flowchart	23
Figure 6.7-1: Muster points and fire hydrants.....	29
Figure 6.8-1: Adult triage flowchart	34
Figure 6.8-2: Wildfire evacuation levels	50
Figure 6.9-1: Evacuation routes	52
Figure 9.7-1: Emergency Incident Command System (EICS) structure	65
Figure 8.3-1: Emergency Communication Form	70

Chapter 10 Minesite Traffic Control Plan

Figure 6.1-1: Existing Access to the Tenas Project Area.....	7
Figure 6.1-2: Tenas Access Corridor (TAC) relevant features.....	8
Figure 6.1-3: Maximum axel loading requirements for the Tenas Access Corridor (TAC)	9
Figure 6.1-4: Interaction with public roads and trails and access gate locations.....	11

Chapter 11 Minesite Water Management Plan

Figure 1-1: Water Management Overview	1
Figure 1-2: Water Management Rail Infrastructure Area	2
Figure 6.1-1: Monthly precipitation as snow and rain.....	8

Figure 6.2-1:	Water Management Construction Phase Year -0.5	18
Figure 6.2-2:	Water Management End of Year 1	19
Figure 6.2-3:	Water Management End of Year 5	20
Figure 6.2-4:	Water Management End of Year 10	21
Figure 6.2-5:	Water Management Decommissioning and Reclamation Phase	22
Figure 6.2-6:	Water Management Post-closure Phase	23
Figure 6.3-1:	Calibrated curve number (CN) values and CN values after adjustments for AMC III saturated conditions for return periods	25
Figure 6.3-2:	Typical sediment control pond geometry	47
Figure 6.3-3:	Sedimentation pond catchment area map for (a) Tenas Control Pond, (b) Coal Processing Plant (CPP) and Explosive Infrastructure area sedimentation ponds and (c) Rail Infrastructure Sedimentation Pond	52
Figure 6.3-4:	Tenas Control Pond conceptual design schematic	53
Figure 6.3-5:	Tenas Control Pond catchment area, Year 5, during critical potentially acid generating (PAG) placement period	57
Figure 6.3-6:	Routing of the inflow design flood (IDF) through the Tenas Control Pond spillway	59
Figure 6.3-7:	Management pond spillway catchment map	66
Figure 6.3-8:	North Management Pond inflow design flood (IDF) hydrographs. (a) Operation Phase conditions hydrographs (b) Post-closure Phase conditions hydrographs	68
Figure 6.3-9:	East Management Pond inflow design flood (IDF) hydrographs. (a) Operation Phase conditions hydrographs (b) Post-closure Phase conditions hydrographs	68
Figure 6.3-10:	West Management Pond inflow design flood (IDF) hydrographs. (a) Operation Phase conditions hydrographs (b) Post-closure Phase conditions hydrographs	69
Chapter 12	Metal Leaching/Acid Rock Drainage Management Plan	
Figure 6.1-1:	Neutralization Potential Ratio (NPR) versus Acid Potential.....	5
Figure 6.1-2:	Modified-NP versus TICXRD-Fe corrected.....	6
Figure 6.1-3:	TICXRD versus TICXRD-Fe corrected	6
Figure 6.1-4:	SLeco versus Total Inorganic Sulfur and S2-	8
Figure 6.1-5:	Leco Sulfur versus XRD Sulfur	8
Figure 6.1-6:	Carbonate Molar Ratios versus Sulfide Release Rates	10

Figure 6.1-7:	Carbonate Molar Ratios Accounting for Cation Exchange versus Sulfide Release Rates	11
Figure 6.2-1:	Tenas Project Proposed Project Footprint and Facilities.....	18
Figure 6.3-1:	Material Management Decision Matrix	19
Figure 6.3-2:	Coal Processing Flowsheet	20
Figure 6.4-1:	Example of Blast Grid non-PAG and PAG Waste Rock	22

Chapter 13 Occupational Health and Safety Program

Figure 6.4-1:	Risk assessment using Risk Matrix Grid of consequence versus likelihood	12
Figure 6.4-2:	Determination of likelihood.....	12
Figure 6.4-3:	Determination of consequence	13
Figure 6.4-4:	Stop, Look, Assess, Manage (SLAM) card.....	15
Figure 6.4-2:	Safety Interaction Form.....	17
Figure 6.5-1:	Mine Dry, Lunchroom and Office Building	24
Figure 6.6-1:	Flowchart of refusal of unsafe work process	45

Chapter 14 Public Access Management Plan

Figure 3-1:	No Unauthorized Entry, Hunting, Fishing, and Project Boundary with current road regulatory ownership.....	3
Figure 6.2-1:	Historical public access with road regulatory ownership	9
Figure 6.2-2:	Ongoing public access with road regulatory ownership	11
Figure 6.4-1:	Public and Project Access with road regulatory ownership	13
Figure 6.4-2:	Public and Project Access with road regulatory ownership for Inset 2	14
Figure 6.4-3:	Photograph of an access road like the proposed access road (TAC) for the Operation, Decommissioning and Reclamation Phases	16
Figure 6.5-1:	Example of an access control gate.....	2
Figure 6.5-2:	Contingency public access to Project Area after Project's Construction Phase.....	6

Chapter 15 Reclamation and Closure Plan

Figure 6.1-1:	Major Project Components for the Southern Portion of the Project Footprint.....	8
---------------	---	---

Figure 6.1-2:	Major Project Components for the Northern Portion of the Project	9
Figure 6.2-1:	Pre-Project ecosystems, modelled for the 2050s climate for the southern area of the Project.....	17
Figure 6.2-2:	Pre-Project ecosystems, modelled for the 2050s climate for the northern area of the Project	18
Figure 6.2-3:	Post-closure ecosystems, modelled for the 2050s climate for the southern area of the Project.....	19
Figure 6.2-4:	Post-closure ecosystems, modelled for the 2050s climate for the northern area of the Project	20
Figure 6.2-5:	Edatopic grid for the ICHmc2 biogeoclimatic variant	22
Figure 6.2-6:	Edatopic grid for the SBSmc2 biogeoclimatic variant.....	23
Figure 6.2-7:	Edatopic grid for the IDFmw2 biogeoclimatic variant	24
Figure 6.3-1:	Available-water storage capacity of mine materials and overburden compared to surface-soil suitability classes.....	27
Figure 6.3-2:	Surface soil suitability and salvage for the southern area of the Project.....	35
Figure 6.3-3:	Surface soil suitability and salvage for the northern area of the Project.....	36
Figure 6.3-4:	Surface Soil stockpiles for the southern area of the Project.....	45
Figure 6.3-5:	Surface Soil stockpiles for the northern area of the Project	46
Figure 6.3-6:	Reclamation fact sheet for ICHmc2 01-52.....	49
Figure 6.3-7:	Water management infrastructure at the completion of the Decommissioning and Reclamation Phase	57
Figure 6.4-1:	Year -0.5	59
Figure 6.4-2:	Year 0.....	60
Figure 6.4-3:	Year 1.....	61
Figure 6.4-4:	Year 2.....	62
Figure 6.4-5:	Year 3.....	63
Figure 6.4-6:	Year 4.....	64
Figure 6.4-7:	Year 5.....	65
Chapter 16	Socio-economic Management Plan	
Figure 3.1-1:	Project location and study areas.....	3

Chapter 17	Surface Erosion Prevention and Sediment Control Plan	
Figure 6.3-1:	Best management practices (BMPs) effectiveness	9
Chapter 18	Vegetation Management Plan	
Figure 3-1:	Study Area Boundaries	4
Chapter 19	Visual Resources Management Plan	
Figure 7.2-1:	Viewpoints selected for the Visual Resources Valued Component.....	14
Chapter 20	Waste Management Plan for Refuse and Emissions	
Figure 6-1:	Waste Management Hierarchy for the Tenas Project.....	7
Chapter 21	Wildlife Management Plan	
Figure 3.1-1:	Project Area and Wildlife Feature Locations.....	3
Figure 6.1-1:	Timing window for selected wildlife species	17
Figure 6.3-1:	Mitigation procedure flow chart to follow in the event of a wildlife incident.....	24
Section 14.0	Follow-up Strategy	
Figure 2-1:	Tenas Project Organizational Structure	18
PART F	CONCLUSIONS	
Section 15.0	Conclusions	
	n/a	
Section 16.0	References	
	n/a	