APPENDIX I
INSPECTION PHOTOS

LIST OF APPENDIX I INSPECTION PHOTOS

Photo 1. East Adit Treatment Facility—Looking east at breach in East Adit Treatment dyke.

Photo 2. East Adit Treatment Facility—Retention pond as seen from East Pit road.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: EAST ADIT TREATMENT FACILITY

CLIENT: nyrstar	APPENDIX No.: I-1	PROJ No.: 0255-026-03	REV:

Photo 3. Port Area—As seen from Mt. Fuji.

Photo 4. Port Area—As seen from communication tower area.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: PORT AREA

APPENDIX No.:	PROJ No.:	REV:
I-2	0255-026-03	

Photo 5. West Twin Dyke Spillway—Looking downslope along left edge of ramp on right bank of spillway. Note water flowing along channel.

Photo 6. West Twin Dyke Spillway—Looking upstream along left bank of spillway. Note erosion scar approximately 1-2 m above base of spillway.

Photo 7. West Twin Dyke Spillway—Spillway as seen from top of right bank. View looking downstream.

Photo 8. West Twin Dyke Spillway—Spillway outlet as seen from crest of right bank.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: WEST TWIN DYKE SPILLWAY

APPENDIX No.:	PROJ No.:	REV:
I-3	0255-026-03	

Photo 9. West Twin Outlet Channel—Thermokarst feature in bottom of polishing pond.

Photo 10. West Twin Outlet Channel—Looking upstream at wall.

Photo 11. West Twin Outlet Channel—Looking north along wall.

Photo 12. West Twin Outlet Channel—Settlement induced cracking along north edge of polishing pond.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: WEST TWIN LAKE OUTLET CHANNEL

APPENDIX No.:	PROJ No.:	REV:
I-4	0255-026-03	

Photo 13. East Twin Creek Diversion Channel—View looking up gradient. Upstream of left bank erosion.

Photo 14. East Twin Creek Diversion Channel– View of area downstream of armoured area. Note bedrock outcrop along face of dyke and in bottom of channel.

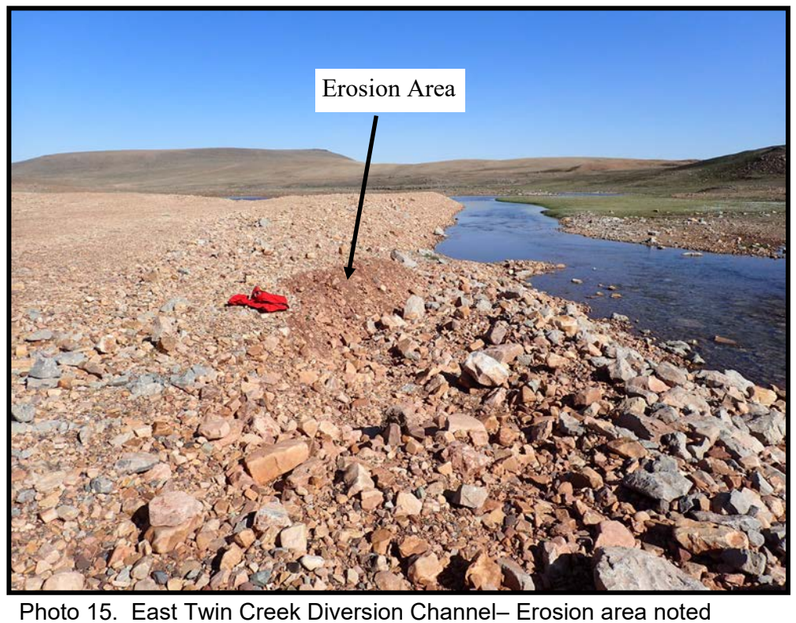


Photo 15. East Twin Creek Diversion Channel– Erosion area noted above seepage discharge point. Erosion is similar to 2013.

Photo 16. East Twin Creek Diversion Channel– View of area downstream of armoured area. Note bedrock outcrop along face of dyke and in bottom of channel.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: EAST TWIN LAKE CREEK DIVERSION DYKE

APPENDIX No.:	PROJ No.:	REV:
I-5	0255-026-03	

Photo 17. Surface Cell—Thermokarst settlement near E/W drainage channel.

Photo 18. Surface Cell—Settlement area along east edge of main N/S drainage swale. View looking north.

Photo 19. Surface Cell—Cracking in secondary N/S drainage swale. View looking north.

Photo 20. Surface Cell—E/W drainage channel on Surface Cell cover. View looking west.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: SURFACE CELL TAILINGS COVER

APPENDIX No.: I-6

PROJ No.: 0255-026-03

REV:

Photo 21. West Twin Dyke—Crest of dyke, view looking north.

Photo 22. West Twin Dyke—Face of dyke, view looking south.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: WEST TWIN DYKE

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-7	0255-026-03	

Photo 23. Test Cell—Settlement trough along edge of East/West Test Cell dyke.

Photo 24. Test Cell—Looking toward outlet of Test Cell cover system.

Photo 25. Test Cell—View looking southwest along centre of Test Cell cover system.

Photo 26. Test Cell—Test Cell area as seen from crest of West Twin Dyke.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: TEST CELL TAILINGS COVER

APPENDIX No.: I-8

PROJ No.: 0255-026-03

REV:

Photo 27. Test Cell—Looking towards toe of West Twin dyke from centre of Test Cell.

Photo 28. Test Cell—View looking east toward outlet of Test Cell cover system.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: TEST CELL TAILINGS COVER 2

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-9	0255-026-03	

Photo 29. Toe of Test Cell Dyke—Armour along shoreline of cover at toe of Test Cell Dyke. East/West arm, view looking east.

Photo 30. Toe of Test Cell Dyke—Armour along shoreline of cover at toe of Test Cell Dyke. East/West arm, view looking west.

Photo 31. Toe of Test Cell Dyke—North/South arm, view looking south.

Photo 32. Toe of Test Cell Dyke—Outlet of Test Cell Cover

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: TOE OF TEST CELL DYKE TAILINGS COVER

APPENDIX No.:	PROJ No.:	REV:
I-10	0255-026-03	

Photo 33. Toe of West Twin Dyke. As seen from crest of West Twin Dyke

Photo 34. Toe of West Twin Dyke—Settlement Area.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: TOE OF WEST TWIN DYKE TAILINGS COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-11	0255-026-03	

Photo 35. Landfill—Surface of landfill cover looking north.

Photo 36. Landfill—North sloping face of cover.

Photo 37. Landfill— As seen from the communication tower area.

Photo 38. Landfill—West facing slope of landfill cover.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: LANDFILL COVER

APPENDIX No.	PROJ No.	REV.
I-12	0255-026-03	

Photo 39. West Open Pit—Crack in crown pillar. Note that there has been no visual change in the 10 years since closure.

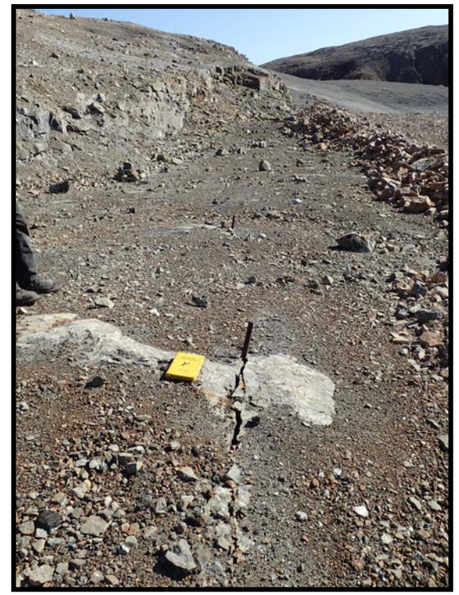


Photo 40. West Open Pit—Crack in crown pillar. Note that there has been very little change in the 10 years since closure.

Photo 41. West Open Pit—Surface of cover system looking downslope.

Photo 42. West Open Pit—Centre of surface cover system looking west.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: WEST OPEN PIT WASTE ROCK COVER

APPENDIX No.:	PROJ No.:	REV:
I-13	0255-026-03	

Photo 43. East Open Pit— At transition from flat to sloping upper surface of cover system. Note minor settlement and cracking.

Photo 44. East Open Pit—Face of remnant highwall where cracking of crown pillar has been observed.

Photo 45. East Open Pit—Looking upslope along lower sloping face of cover. Note rill erosion.

Photo 46. East Open Pit—Cracking in crown pillar. Similar condition to 2014.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: EAST OPEN PIT WASTE ROCK COVER

APPENDIX No.:	PROJ No.:	REV:
I-14	0255-026-03	

Photo 47. East Trench—Trench cover as seen from upslope edge. Not small flow of water on surface of cover causing minor rill erosion.

Photo 48. East Trench—Spring water running along surface of cover causing minor rill erosion

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: EAST TRENCH

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-15	0255-026-03	

Photo 49. Oceanview Open Pit—Toe of cover system. Note seepage emerging at the bottom of toe.

Photo 50. Oceanview Open Pit—Rill erosion along backslope. Note self armouring that is occurring.

Photo 51. Oceanview Open Pit—Main pit area as seen from backslope.

Photo 52. Oceanview Open Pit—Small sinkhole in middle of cover system. Note little visible change since 2014.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: OCEANVIEW OPEN PIT WASTE ROCK COVER

APPENDIX No.:	PROJ No.:	REV:
I-16	0255-026-03	

Photo 53. Area 14—Upper flat surface of waste rock cover.

Photo 54. Area 14—Slope face of waste rock cover.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: AREA 14 WASTE ROCK COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-17	0255-026-03	

Photo 55. Upper Dump Pond—General view of cover system, as seen from road above 09S portal.

Photo 56. Upper Dump Pond—View of surface of cover.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: UPPER DUMP POND TAILINGS COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-18	0255-026-03	

Photo 57. Industrial Complex Cover—View across sloping face of cover.

Photo 58. Industrial Complex Cover—Cover system as seen from the communication tower area.

Photo 59. Industrial Complex Cover—Surface of cover system.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: INDUSTRIAL COMPLEX COVER

APPENDIX No.: I-19

PROJ No.: 0255-026-03

REV:

Photo 60. 17N Portal—Surface water running along east edge of portal cover.

Photo 61. 17N Portal—Looking upslope along surface of cover.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: 17N PORTAL COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-20	0255-026-03	

Photo 62. Oceanview Portal—Looking downslope along surface of portal cover.

Photo 63. Oceanview Portal—Settlement area along west edge of cover. Note very little to no change in 10 years.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: OCEANVIEW PORTAL COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-21	0255-026-03	

Photo 64. K-Baseline Portal—Surface of cover as seen from East Trench.

Photo 65. K-Baseline Portal—Sloping face of cover system looking upslope.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: K-BASELINE PORTAL COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-22	0255-026-03	

Photo 66. Area 14 Portal—Surface of portal cover system.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: AREA 14 PORTAL COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-23	0255-026-03	

Photo 67. 09S Portal—Eroding road between 09S and 17N portals.

Photo 68. 09S Portal—Looking upslope along surface of cover. Note shale deposited on top of armour from upslope.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: 09S PORTAL COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-24	0255-026-03	

Photo 69. Lower Adit—As seen from Industrial Complex cover.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: LOWER ADIT COVER

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-25	0255-026-03	

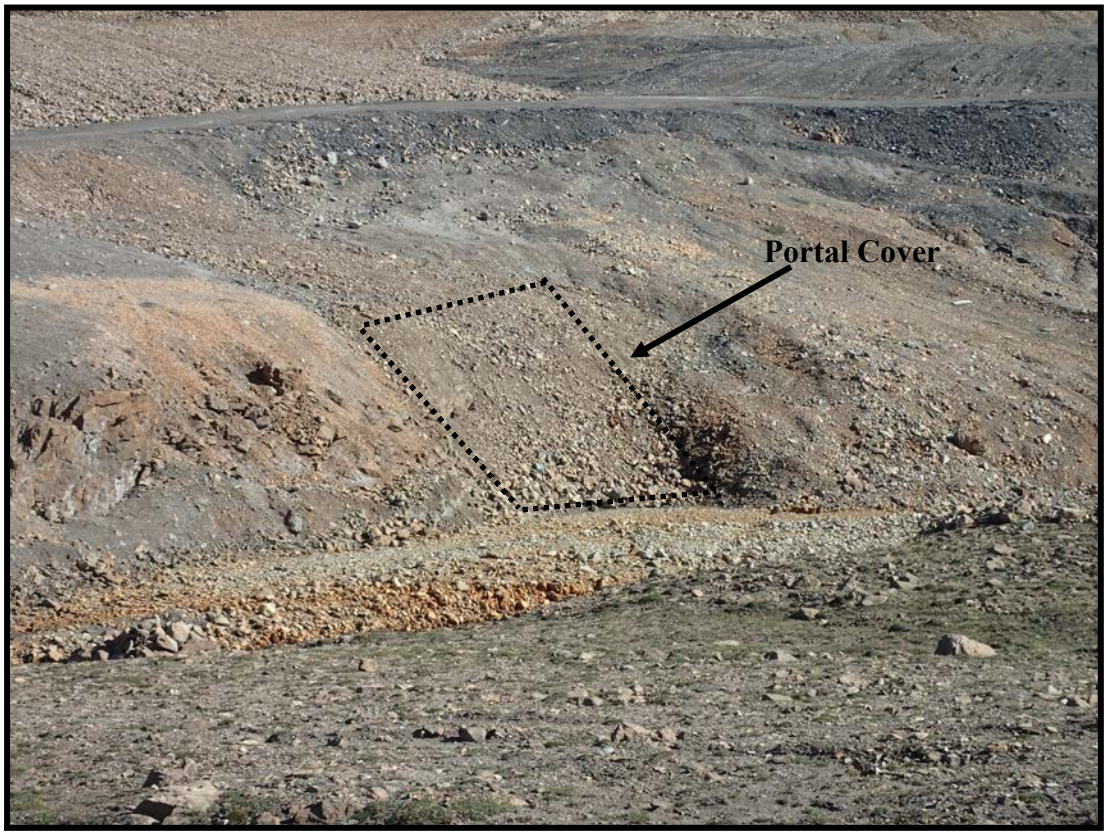


Photo 70. Mill Portal—Portal plug as seen from right bank of Twin Lakes Creek.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: MILL PORTAL

CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-26	0255-026-03	

Photo 71. Shale Hill Raise—Mound over backfilled raise. No settlement has been observed.

Photo 72. Oceanview East Raise. — Mound over backfilled raise. No settlement has been observed.

Photo 73. Oceanview West Raise— Mound over backfilled raise. No settlement has been observed.

Photo 74. Area 14 Raise—Graded area above backfilled raise. Note stake with flagging denoting approximate location of raise.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: MINE RAISE COVERS

APPENDIX No.: I-27

PROJ No.: 0255-026-03

REV:

Photo 75. Area 14 Shale Quarry.

Photo 76. Shale Hill Quarry.

Photo 77. Mt. Fuji Shale Quarry.

Photo 78. Mt. Fuji Shale Quarry—Midslope benches.

SCALE:	N/A
DATE:	MAR 2016
DESIGNED:	GKC
DRAWN:	SG
CHECKED:	JWC
APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: nyrstar

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: SHALE BORROW AREAS

APPENDIX No.: I-28

PROJ No.: 0255-026-03

REV:

Photo 79. Kuhulu Lake Road Armour Quarry—Thermokarsting in floor of quarry. Note minor ponding near northwest corner.

Photo 80. Chris Creek Armour Quarry—Surface of quarry floor.

SCALE:	AS SHOWN	DRAWN:	SG
DATE:	MAR 2016	CHECKED:	JWC
DESIGNED:	GKC	APPROVED:	GKC

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT: NANISIVIK MINE
2015 ANNUAL GEOTECHNICAL INSPECTION

TITLE: SAND AND GRAVEL BORROW AREAS

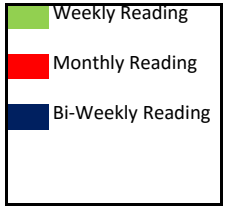
CLIENT: nyrstar

APPENDIX No.:	PROJ No.:	REV:
I-29	0255-026-03	

APPENDIX II
2015 GEOTECHNICAL MONITORING SCHEDULE

2015 Geothechnical and Geothermal Instrument Readings Completed

		01-Jan	01-Feb	01-Mar	07-Apr	21-Apr	05-May	19-May	26-May	02-Jun	09-Jun	16-Jun	23-Jun	30-Jun	07-Jul	14-Jul	21-Jul	28-Jul	04-Aug	11-Aug	18-Aug	25-Aug	01-Sep	08-Sep	15-Sep	22-Sep	29-Sep	06-Oct	03-Nov	01-Dec	08-Dec	15-Dec	22-Dec	29-Dec
West Twin Dyke																																	
TC12	Thermocouple	Not functioning																															
TC13A	Thermocouple	Not functioning																															
TC31	Thermocouple	Not functioning																															
TC32	Thermocouple	Not functioning																															
TC33	Thermocouple	Not functioning																															
BGC03-33	Thermistor																																
BGC03-34	Thermistor																																
BGC05-09	Thermistor																																
BGC05-15	Thermistor																																
BGC05-17	VW Piezo.																																
Surface Cell																																	
BGC02-03	Thermistor	Not functioning																															
BGC03-07	Thermistor																																
BGC03-09	Thermistor																																
BGC03-10	Thermistor																																
BGC03-11	Thermistor	Not functioning																															
BGC03-12	VW Piezo.																																
BGC03-14	VW Piezo.																																
BGC03-15	Thermistor																																
BGC03-20	Thermistor																																
BGC03-21	Thermistor	Not functioning																															
BGC03-32	VW Piezo.																																
BGC03-35	VW Piezo.																																
BGC03-36	Thermocouple																																
BGC03-37	Thermistor	Not functioning																															
BGC05-05	Thermistor																																
BGC05-06	VW Piezo.																																
BGC05-07	VW Piezo.																																
BGC05-08	Contingency																																
BGC05-10	VW Piezo.																																
BGC05-11	Monitoring Well	Not functioning																															
BGC05-12	Monitoring Well	Not functioning																															
BGC05-13	VW Piezo.																																
BGC05-14	Contingency																																
BGC05-16	Contingency																																
FG-1	Frost Gauge																																
FG-2	Frost Gauge																																
FG-3	Frost Gauge																																
FG-4	Frost Gauge																																
FG-5	Frost Gauge																																
FG-6	Frost Gauge																																



BGC Engineering Inc.

2015 Geothechnical and Geothermal Instrument Readings Completed

		01-Jan	01-Feb	01-Mar	07-Apr	21-Apr	05-May	19-May	26-May	02-Jun	09-Jun	16-Jun	23-Jun	30-Jun	07-Jul	14-Jul	21-Jul	28-Jul	04-Aug	11-Aug	18-Aug	25-Aug	01-Sep	08-Sep	15-Sep	22-Sep	29-Sep	06-Oct	03-Nov	01-Dec	08-Dec	15-Dec	22-Dec	29-Dec
Toe of West Twin Dyke																																		
BGC03-18	Thermocouple	Not functioning																																
BGC03-19	Thermistor																																	
BGC05-26	Thermistor																																	
Test Cell																																		
BGC05-04	Thermistor																																	
BGC05-18	VW Piezo.																																	
BGC05-19	Thermistor																																	
BGC05-20	VW Piezo.																																	
BGC05-21	Monitoring Well	Not functioning																																
BGC05-22	VW Piezo.																																	
BGC05-23	Monitoring Well	Not functioning																																
BGC05-24	VW Piezo.																																	
BGC05-25	Contingency																																	
FG-7	Frost Gauge																																	
FG-8	Frost Gauge																																	
Test Cell Dyke																																		
BGC02-09	Thermistor	Not functioning																																
BGC03-22	Thermistor																																	
BGC05-29	Thermistor																																	
Toe of Test Cell Dyke																																		
BGC05-27	Thermistor																																	
BGC05-28	VW Piezo.																																	
FG-9	Frost Gauge																																	
FG-10	Frost Gauge																																	
Oceanview Pit																																		
BGC05-01	Thermistor																																	
FG-16	Frost Gauge																																	
East Open Pit																																		
BGC05-02	Thermistor																																	
BGC05-03	Thermistor																																	
FG-13	Frost Gauge																																	
FG-14	Frost Gauge																																	
Landfill																																		
BGC05-30	Thermistor																																	
FG-11	Frost Gauge																																	
Area 14																																		
TC7	Thermocouple																																	
FG-15	Frost Gauge																																	
Upper Dump Road																																		
FG-17	Frost Gauge																																	
West Open Pit																																		
BGC08-01	Thermistor																																	
Mill Cover																																		
BGC08-02	Thermistor																																	
Water Quality / Levels																																		
159-4	Water Level																																	
159-4	Water Quality																																	
Spillway Inlet	Water Quality																																	

Weekly Reading

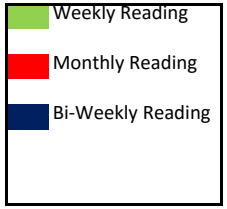
Monthly Reading

Bi-Weekly Reading

APPENDIX III
2016 - 2019 GEOTECHNICAL MONITORING PROGRAM SCHEDULE

2016-2019 Geothechnical and Geothermal Instrument Reading Schedule

		01-Jan	01-Feb	01-Mar	01-Apr	15-Apr	01-May	11-May	21-May	01-Jun	07-Jun	14-Jun	21-Jun	01-Jul	07-Jul	14-Jul	21-Jul	01-Aug	07-Aug	14-Aug	21-Aug	01-Sep	07-Sep	14-Sep	21-Sep	01-Oct	11-Oct	21-Oct	01-Nov	01-Dec	08-Dec	15-Dec	22-Dec	29-Dec
West Twin Dyke																																		
TC12	Thermocouple	Not functioning																																
TC13A	Thermocouple	Not functioning																																
TC31	Thermocouple	Not functioning																																
TC32	Thermocouple	Not functioning																																
TC33	Thermocouple	Not functioning																																
BGC03-33	Thermistor																																	
BGC03-34	Thermistor																																	
BGC05-09	Thermistor																																	
BGC05-15	Thermistor																																	
BGC05-17	VW Piezo.																																	
Surface Cell																																		
BGC02-03	Thermistor	Not functioning																																
BGC03-07	Thermistor																																	
BGC03-09	Thermistor																																	
BGC03-10	Thermistor																																	
BGC03-11	Thermistor	Not functioning																																
BGC03-12	Vibrating Wire																																	
BGC03-14	Vibrating Wire																																	
BGC03-15	Thermistor																																	
BGC03-20	Thermistor																																	
BGC03-21	Thermistor	Not functioning																																
BGC03-32	Vibrating Wire																																	
BGC03-35	Vibrating Wire																																	
BGC03-36	Thermocouple																																	
BGC03-37	Thermistor	Not functioning																																
BGC05-05	Thermistor																																	
BGC05-06	VW Piezo.																																	
BGC05-07	VW Piezo.																																	
BGC05-08	Contingency																																	
BGC05-10	VW Piezo.																																	
BGC05-11	Monitoring Well	Not functioning																																
BGC05-12	Monitoring Well	Not functioning																																
BGC05-13	VW Piezo.																																	
BGC05-14	Contingency																																	
BGC05-16	Contingency																																	
FG-1	Frost Gauge																																	
FG-2	Frost Gauge																																	
FG-3	Frost Gauge																																	
FG-4	Frost Gauge																																	
FG-5	Frost Gauge																																	
FG-6	Frost Gauge																																	



BGC Engineering Inc.

2016-2019 Geothechnical and Geothermal Instrument Reading Schedule

		01-Jan	01-Feb	01-Mar	01-Apr	15-Apr	01-May	11-May	21-May	01-Jun	07-Jun	14-Jun	21-Jun	01-Jul	07-Jul	14-Jul	21-Jul	01-Aug	07-Aug	14-Aug	21-Aug	01-Sep	07-Sep	14-Sep	21-Sep	01-Oct	11-Oct	21-Oct	01-Nov	01-Dec	08-Dec	15-Dec	22-Dec	29-Dec
Toe of West Twin Dyke																																		
BGC03-18	Thermocouple	Not functioning																																
BGC03-19	Thermistor																																	
BGC05-26	Thermistor																																	
Test Cell																																		
BGC05-04	Thermistor																																	
BGC05-18	VW Piezo.																																	
BGC05-19	Thermistor																																	
BGC05-20	VW Piezo.																																	
BGC05-21	Monitoring Well	Not functioning																																
BGC05-22	VW Piezo.																																	
BGC05-23	Monitoring Well	Not functioning																																
BGC05-24	VW Piezo.																																	
BGC05-25	Contingency																																	
FG-7	Frost Gauge																																	
FG-8	Frost Gauge																																	
Test Cell Dyke																																		
BGC02-09	Thermistor	Not functioning																																
BGC03-22	Thermistor																																	
BGC05-29	Thermistor																																	
Toe of Test Cell Dyke																																		
BGC05-27	Thermistor																																	
BGC05-28	VW Piezo.																																	
FG-9	Frost Gauge																																	
FG-10	Frost Gauge																																	
Oceanview Pit																																		
BGC05-01	Thermistor																																	
FG-16	Frost Gauge																																	
East Open Pit																																		
BGC05-02	Thermistor																																	
BGC05-03	Thermistor																																	
FG-13	Frost Gauge																																	
FG-14	Frost Gauge																																	
Landfill																																		
BGC05-30	Thermistor																																	
FG-11	Frost Gauge																																	
Area 14																																		
TC7	Thermocouple																																	
FG-15	Frost Gauge																																	
Upper Dump Road																																		
FG-17	Frost Gauge																																	
West Open Pit																																		
BGC08-01	Thermistor																																	
Mill Cover																																		
BGC08-02	Thermistor																																	
Water Quality / Levels																																		
159-4	Water Level																																	
159-4	Water Quality																																	
Spillway Inlet	Water Quality																																	

Weekly Reading

Monthly Reading

Bi-Weekly Reading