APPENDIX 3
CLYDE RIVER HARBOUR CONSTRUCTION

APPENDIX 3

QUARRY DEVELOPMENT PLAN

Submittals

PILITAK ENTERPRISES LTD

No. :	31
Rev. :	01
Date :	August 29, 2022

Project : **CLYDE RIVER HARBOUR CONSTRUCTION**
DFO ETO-025-222050
Project No. : 2022-034

Subject : **Quarry Development Plan, rev-01**

Submitted to :
CBCL Limited
1505 Barrington St
Halifax, NS, B3J 3K5

David Parsons
davidp@cbcl.ca
506-633-6650 ext 3233

Copy to :
Kenton Thiesson
PSPC

kenton.thiessen@pwgsc-tpsgc.gc.ca
204-229-6375

Speciality :	General	**Submitted for :**	Révision
Specification section :	01 35 4331 23 16.26	**Revision required by :**	**September 8, 2022**
Drawing reference :		**Color choice required :**	
Submited as :	As specified	**Total Page incl. cover :**	**56**

Subcontractor or supplier :

Manufacturer :

Description : Quarry Development Plan, rev-01

Supplier No :

Comments :

Revised and submitted by :

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
NAME: François Bourassa
DATE: Aoû 29, 2022

François Bourassa, P.Eng.
Pilitak Enterprises Ltd.
1519 Federal Road
Iqaluit
418-781-6114 ext 213
fbourassa@pilitak.biz

Review by the consultant or the client :

Shop Drawing Review

This review is intended to assist the contractor in complying with the requirements of the Contract Documents and does not relieve him of his responsibilities under the contract.

- [X] no apparent errors
- [ ] apparent errors noted
- [ ] rejected - see remarks
- [ ] revise and resubmit

PER Dallas Dalzell
CBCL LIMITED

200235.00 — PROJECT
09/05/2022 — DATE

PILITAK ENTERPRISES LTD

ᐱᓕᒃ ᐃᖃᓗᐃᔾᔨᕐᓂᐊᓕᕆᓂ ᓕᒥᑎᓂ

QUARRY DEVELOPMENT PLAN

Clyde River Harbour Development

DFO ET025-222050/A

Submitted to:

Public Services and Procurement Canada

Revision: August 2022

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

The purpose of this document is to present the Quarry Development Plan in order to describe the design and operation of the quarry from initial development through to final reclamation.

The construction project was awarded to Pilitak Enterprises Ltd (PEL) in May 2022 by Public Services and Procurement Canada (PSPC) for the Department of Fisheries and Ocean (DFO). At the end of August 2022, heavy equipment, camp facilities and material will be delivered by sealift to Clyde River. The project consists mainly of the construction of two large breakwaters, a fixed wharf structure, two lines of float wharf modules, a retrofit of the existing sealift ramp and improvements to the uplands. The new marine infrastructure will be constructed during the summers of 2023, 2024 and 2025 while preparation work will be carried out during the fall of 2022.

This plan is in effect from August 2022 and will be updated accordingly, as needed.

1.1 OBJECTIVE AND DEFINITIONS

The main objectives of this plan are described below:

- Present the development steps of the quarry;
- Detail the drilling and blasting procedures;
- Explain the explosive management;
- Present the reclamation plan at the end of our operations.

The existing quarry is located about 2 kilometers southwest of the air terminal. The quarry is accessible through two roads, both connected to the airport road. The current foot print of the quarry represents approximately 3,800 square meters. The quarry floor is currently at the elevation ±20 m with faces ranging from 4 meters high on the north side and up to 12 meters high on the south side.

The total volume of rock needed for this project could be roughly estimated to 150,000 cubic meters including losses for rejected material. The total volume will be higher in the case where the rock would be highly fractured. Assuming an average depth of 8 meters, a surface of 18,750 square meters would be needed to produce the rocks and the granular material for the project. The current permitting for the quarry allows a potential expansion of about 40,000 square meters, which seems sufficient to cover the needs for this project.

1.2 EXISTING SURFACE AND BEDROCK CONDITIONS

According to the results of the geotechnical investigation realized by Canadrill for this project, the overburden thickness within the quarry expansion would range from 100mm to 460mm. The overburden consists mainly in a thin layer of rootmat and silty sand. This was observed in 7 boreholes that were drilled within the quarry expansion limits. The bedrock consists of granitic gneiss that could be moderately fractured, as observed in the current quarry faces.

1.3 TOPOGRAHY AND HYDROGEOLOGY

In regard to the topography of the area included within the quarry expansion, the west half is mainly flat at an elevation of 33 meters while the eastern half is sloping toward North east to reach an elevation of 18 meters at the limit of the expansion area. It is expected that any surface water would follow the natural slope of this area, ending into a drainage path that leads to the Clyde River.

The current elevation of the quarry floor is about 20 meters. It allows the water to drain out to the north end. It is expected that the floor will be kept to the same elevation during the development phases of the quarry. However, a minimum slope will be kept toward the north end in order to maintain a positive drainage in this direction.

2. QUARRY DEVELOPMENT

2.1 CLEARING AND GRUBBING

Prior the development of a quarry section, the organic vegetation mat and upper soil horizon material will be grubbed and stockpiled for further site rehabilitation. The quarry development will be initiated prior to the arrival of migratory birds (breeding season mid-May to mid-August) such that the quarry and surrounding area becomes unattractive for nesting. Buffers or exclusion zones shall be implemented, in the event a sensitive species or feature (e.g., nest) is identified, to ensure wildlife are not disturbed.
During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas which are to be left undisturbed.

2.2 SNOW REMOVAL AND LOCAL WATER MANAGEMENT

Positive drainage will be incorporated in the quarry design as development progresses. As mentioned earlier, the pit floor will also have a positive grade applied for drainage to flow and to minimize ponding effects. Grades will not exceed 2% to avoid adverse flow and erosion problems. The drainage will exit the pit floor to natural ground elevations at the north end of the quarry.

At the end of each season, rocks will be removed from the pit floor in order to facilitate the snow removal at the beginning of the next construction season. The accumulated snow during the winter will be cleared out from the pit floor and stockpiled outside of the work area. Erosion and sediment control measures will be implemented where needed, according to the site conditions and to the Erosion and Sediment Control Plan (ESCP).

2.3 DEVELOPMENT PHASES AND PROCESSING

2.3.1 Development phases

The quarry site development will be a drill and blast (rock) site and the pit will be developed uniformly up the face of the deposit, using the quarry section already opened. It is anticipated that the deposit is consistent through the quarry perimeters. Extraction will be consistent with the drilling pattern and bench design working up the face of the ridge.

The quarry development will be done in 3 phases, as presented in figure 2.3.1. It is currently planned to develop the phase 1 during the fall 2022 in order to test and adjust our processing methodology. During

the phase 1, the rock processing plant will be installed outside of the quarry limits. For the subsequent development phases, the rock processing plant will be installed directly into the quarry. The processing equipment will be removed while blasting.

The top perimeter of the quarry will be protected with boulders.

Figure 2.3.1

2.3.2 survey

An original ground topographic survey will be completed prior to quarry activities and repeated upon completion of quarrying to obtain a final measurement of the materials excavated from the quarry source.

2.3.3 Processing

The rocks meeting the requirements to be used for armour stones will be removed directly from the blasted section with an excavator, measured, transported and placed into two separate stockpiles on the west side of the quarry, the first one being for the 500-1500 Kg and the second one for the 2000-3000 Kg. The Oversize material will be left in the quarry and reprocessed with an excavator equipped with a hydraulic hammer in order to meet the armour stones specifications. In certain cases, the oversized material will be dealt with by the drilling and blasting crew by “popping” the material with a small charge to break it down into usable material.

Material too small to be used for armour stones will be processed with the rip rap plant which will be adjusted to produce either core stone, filter stones or rip rap. Each product will be transported and placed into separate stockpiles outside of the quarry limits. The rejected material will be transported to the rock crusher plant installed on the west side of the airport where the other types of material will be processed.

2.3.4 Equipment

Rock processing Plant

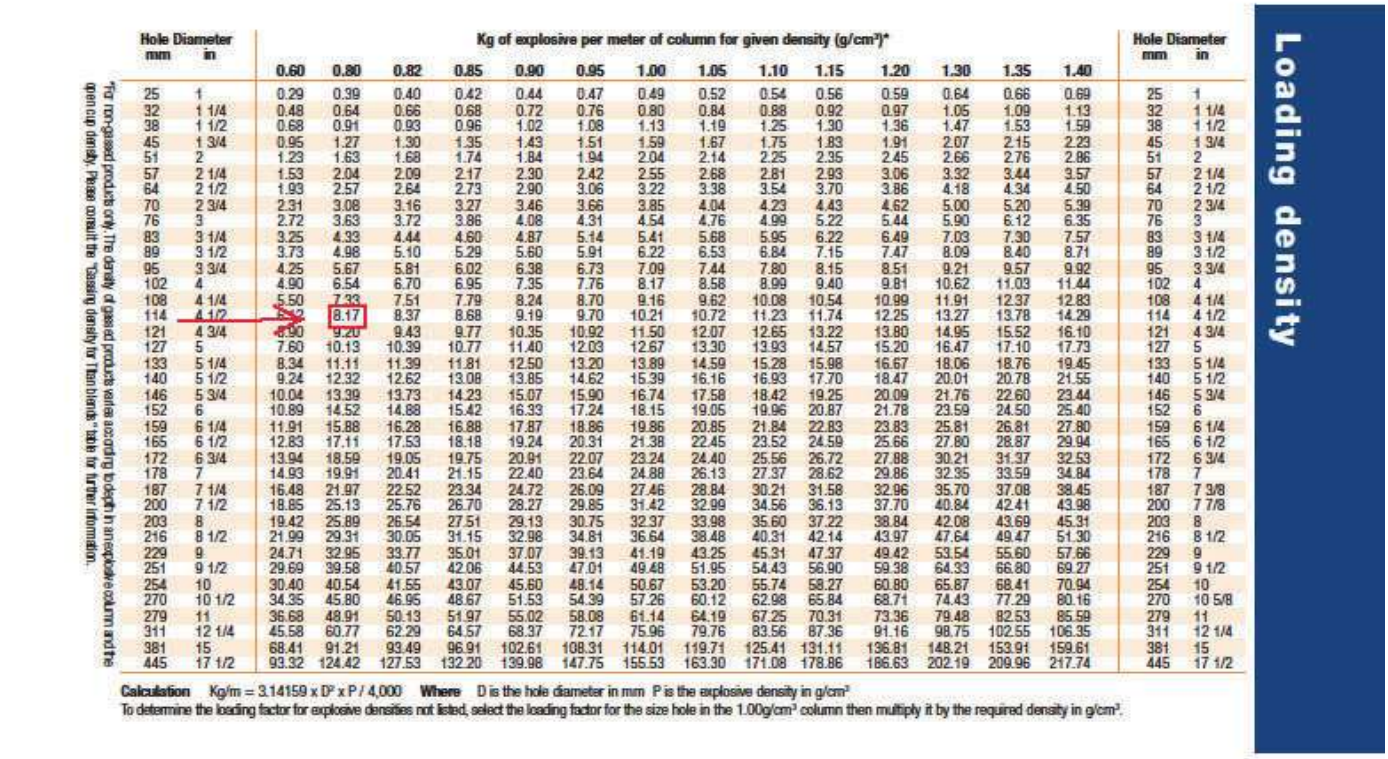
- Rip Rap Plant Lippman VGF6224
- Screener Plant and conveyor JCI-FT6203
- Excavator Komatsu PC-650-11
- Excavator PC-450 LC8
- Loader Komatsu W500-8
- Dump truck HM-300 (2)

Rock crushing plant

- Rock crusher Pioneer FT2650
- Rock crusher JCI FT 300
- Excavator Komatsu PC-400 LC7
- Loader Komatsu W500-6
- Dump truck HM-300

3. DRILLING AND BLASTING

The drilling pattern was preliminary established to 3.7 x 4.3 meters in order to obtain material in a size that can be used as armour stone for the construction of the breakwaters. The drill pattern will be adjusted according to the result of the first blast and when changes in the geological conditions are observed. Boreholes diameter will be 4 ½'' and the drilling depth will be reaching the current pit floor elevation. The in-hole powder factor will be initially set at 0.8 and adjusted according to the results of the first blast. The following table shows typical explosive quantity to be used according to the borehole diameter



Loading density

Hole Diameter mm	Hole Diameter in	Kg of explosive per meter of column for given density (g/cm³)*														Hole Diameter mm	Hole Diameter in
		0.60	0.80	0.82	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.30	1.35	1.40		
25	1	0.29	0.39	0.40	0.42	0.44	0.47	0.49	0.52	0.54	0.56	0.59	0.64	0.66	0.69	25	1
32	1 1/4	0.48	0.64	0.66	0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.97	1.05	1.09	1.13	32	1 1/4
38	1 1/2	0.68	0.91	0.93	0.96	1.02	1.08	1.13	1.19	1.25	1.30	1.36	1.47	1.53	1.59	38	1 1/2
45	1 3/4	0.95	1.27	1.30	1.35	1.43	1.51	1.59	1.67	1.75	1.83	1.91	2.07	2.15	2.23	45	1 3/4
51	2	1.23	1.63	1.68	1.74	1.84	1.94	2.04	2.14	2.25	2.35	2.45	2.66	2.76	2.86	51	2
57	2 1/4	1.53	2.04	2.09	2.17	2.30	2.42	2.55	2.68	2.81	2.93	3.06	3.32	3.44	3.57	57	2 1/4
64	2 1/2	1.93	2.57	2.64	2.73	2.90	3.06	3.22	3.38	3.54	3.70	3.86	4.18	4.34	4.50	64	2 1/2
70	2 3/4	2.31	3.08	3.16	3.27	3.46	3.66	3.85	4.04	4.23	4.43	4.62	5.00	5.20	5.39	70	2 3/4
76	3	2.72	3.63	3.72	3.86	4.08	4.31	4.54	4.76	4.99	5.22	5.44	5.90	6.12	6.35	76	3
83	3 1/4	3.25	4.33	4.44	4.60	4.87	5.14	5.41	5.68	5.95	6.22	6.49	7.03	7.30	7.57	83	3 1/4
89	3 1/2	3.73	4.98	5.10	5.29	5.60	5.91	6.22	6.53	6.84	7.15	7.47	8.09	8.40	8.71	89	3 1/2
95	3 3/4	4.25	5.67	5.81	6.02	6.38	6.73	7.09	7.44	7.80	8.15	8.51	9.21	9.57	9.92	95	3 3/4
102	4	4.90	6.54	6.70	6.95	7.35	7.76	8.17	8.58	8.99	9.40	9.81	10.62	11.03	11.44	102	4
108	4 1/4	5.50	7.33	7.51	7.79	8.24	8.70	9.16	9.62	10.08	10.54	10.99	11.91	12.37	12.83	108	4 1/4
114	4 1/2	5.82	8.17	8.37	8.68	9.19	9.70	10.21	10.72	11.23	11.74	12.25	13.27	13.78	14.29	114	4 1/2
121	4 3/4	6.90	9.20	9.43	9.77	10.35	10.92	11.50	12.07	12.65	13.22	13.80	14.95	15.52	16.10	121	4 3/4
127	5	7.60	10.13	10.39	10.77	11.40	12.03	12.67	13.30	13.93	14.57	15.20	16.47	17.10	17.73	127	5
133	5 1/4	8.34	11.11	11.39	11.81	12.50	13.20	13.89	14.59	15.28	15.98	16.67	18.06	18.76	19.45	133	5 1/4
140	5 1/2	9.24	12.32	12.62	13.08	13.85	14.62	15.39	16.16	16.93	17.70	18.47	20.01	20.78	21.55	140	5 1/2
146	5 3/4	10.04	13.39	13.73	14.23	15.07	15.90	16.74	17.58	18.42	19.25	20.09	21.76	22.60	23.44	146	5 3/4
152	6	10.89	14.52	14.88	15.42	16.33	17.24	18.15	19.05	19.96	20.87	21.78	23.59	24.50	25.40	152	6
159	6 1/4	11.91	15.88	16.28	16.88	17.87	18.86	19.86	20.85	21.84	22.83	23.83	25.81	26.81	27.80	159	6 1/4
165	6 1/2	12.83	17.11	17.53	18.18	19.24	20.31	21.38	22.45	23.52	24.59	25.66	27.80	28.87	29.94	165	6 1/2
172	6 3/4	13.94	18.59	19.05	19.75	20.91	22.07	23.24	24.40	25.56	26.72	27.88	30.21	31.37	32.53	172	6 3/4
178	7	14.93	19.91	20.41	21.15	22.40	23.64	24.88	26.13	27.37	28.62	29.86	32.35	33.59	34.84	178	7
187	7 1/4	16.48	21.97	22.52	23.34	24.72	26.09	27.46	28.84	30.21	31.58	32.96	35.70	37.08	38.45	187	7 3/8
200	7 1/2	18.85	25.13	25.76	26.70	28.27	29.85	31.42	32.99	34.56	36.13	37.70	40.84	42.41	43.98	200	7 7/8
203	8	19.42	25.89	26.54	27.51	29.13	30.75	32.37	33.98	35.60	37.22	38.84	42.08	43.69	45.31	203	8
216	8 1/2	21.99	29.31	30.05	31.15	32.98	34.81	36.64	38.48	40.31	42.14	43.97	47.64	49.47	51.30	216	8 1/2
229	9	24.71	32.95	33.77	35.01	37.07	39.13	41.19	43.25	45.31	47.37	49.42	53.54	55.60	57.66	229	9
251	9 1/2	29.69	39.58	40.57	42.06	44.53	47.01	49.48	51.95	54.43	56.90	59.38	64.33	66.80	69.27	251	9 1/2
254	10	30.40	40.54	41.55	43.07	45.60	48.14	50.67	53.20	55.74	58.27	60.80	65.87	68.41	70.94	254	10
270	10 1/2	34.35	45.80	46.95	48.67	51.53	54.39	57.26	60.12	62.98	65.84	68.71	74.43	77.29	80.16	270	10 5/8
279	11	36.68	48.91	50.13	51.97	55.02	58.08	61.14	64.19	67.25	70.31	73.36	79.48	82.53	85.59	279	11
311	12 1/4	45.58	60.77	62.29	64.57	68.37	72.17	75.96	79.76	83.56	87.36	91.16	98.75	102.55	106.35	311	12 1/4
381	15	68.41	91.21	93.49	96.91	102.61	108.31	114.01	119.71	125.41	131.11	136.81	148.21	153.91	159.61	381	15
445	17 1/2	93.32	124.42	127.53	132.20	139.98	147.75	155.53	163.30	171.08	178.86	186.63	202.19	209.96	217.74	445	17 1/2

*For non-gassed products only. The density of gassed products varies according to depth in an explosive column and the open cup density. Please consult the "Gassing density for Titan blends" table for further information.

Calculation Kg/m = 3.14159 x D² x P / 4,000 **Where** D is the hole diameter in mm P is the explosive density in g/cm³

To determine the loading factor for explosive densities not listed, select the loading factor for the size hole in the 1.00g/cm³ column then multiply it by the required density in g/cm³.

3.1 PERMITTING AND QUALIFICATIONS

An explosive license for the acquisition and storage of explosives was obtain through Natural Resources Canada for the Clyde River Harbour Project.
Considering that the quarry is located in the alignment of the runway, an aeronautical assessment form was sent to transport Canada and a land use proposal to NAV Canada in order to advise them that blasting operations will be carried out at the quarry. These notifications shall be done at the beginning of each blasting season. A NOTAM (Notice to Airmen) agreement for blasting will be issued by NAV Canada when required.

All explosive handling and blasting operations will be carried out by our licenced explosive specialists. Refer to the appendix 1 for their qualifications.

3.2 EQUIPMENT AND EXPLOSIVES

The following equipment will be assigned to the drilling and blasting operations.

Equipment

- Drill Sandvik DX800
- Air compressor 950 CFM Atlas-Copco
- 2 explosive magazine, capacity 2,500Kg
- 2 explosive magazine, capacity 7,500Kg
- 6 explosive magazine, capacity 10,000Kg
- Pick up truck with explosive magazine, capacity 900 Kg

The following explosives and accessories will be used. The safety data sheets are presented in Appendix 2.

Explosives

- ANFO bags WR
- ANFO bags HD
- Packaged emulsion 1.5 Normite V 2.5'' x 35''
- Cast boosters AES 12 OZ
- Non-electric detonators 15M 25/500
- Electric detonators Daveydet serie 4000

3.3 EXPLOSIVE MANAGEMENT

High quality explosives have been selected for blasting operations. The explosives are packaged into marine containers specially built and identified for ground and marine transportation. Once arrived in Clyde River, the explosive containers will be transported nearby the quarry and their content transferred into certified explosive magazines. The explosive containers will be guarded 24 hours until their content has been transferred into magazines. When boreholes are ready to be loaded, the explosives will be transported from the storage caches to the quarry with a pickup truck equipped with an explosive magazine at the back. The following procedures apply for the transportation and the handling of the explosives:

- Transportation and handling of explosives to be done only by authorized and qualified personnel;
- No smoking or any source of light or fire shall be allowed near explosives;
- Explosives and detonators are to be transported into separate magazines;
- A daily Inventory of the explosives shall be done;
- Ensure the stock of explosives is rotated so that the oldest stock is used first;
- Explosive magazines are to be weekly inspected;
- Empty packages shall be removed immediately and destroyed;
- Proper signage to be installed on magazines and vehicles

During the project shut down for the winter period, a weekly inspection of the explosive magazines will be done by a local worker. The Hamlet will be informed of the explosive storage plan and conditions of the permit.

3.4 SAFETY PERIMETER

The quarry is located into an area where the access is limited by the Clyde River. There are only two access roads that lead to the quarry from the airport road. One access road is crossing the river by the bridge and the other one by the ford crossing. The airport is located 1.5 km from the quarry to the north and the nearest building is located at 1.4 km to the northwest. The nearest point of the airport road from the quarry is located at 1.2 km to the north. Before any blast, both access roads to the quarry will be temporary blocked at the junction of the airport road. Currently, the safety perimeter for workers and construction vehicles was established to an area of 300 meters away from the blast location. This perimeter could be adjusted according to the observed geological conditions.

3.5 BLASTING PROCEDURES

Blasting will be restricted to hours as agreed upon with the Hamlet. The blasting schedule will be submitted to the Hamlet for review and approval prior to commencing blasting.

When a Blast has been completely drilled, the following procedures will be applied by Pilitak before loading boreholes and blasting:

- The blaster in the morning will let the following people know the scheduled time of blast in accordance with the airport flight dispatcher.

AIRPORT (CARS)	(867) 924-6344
RCMP	(867) 980-0123
HAMLET RADIO	(867) 924-6264

- Two trucks will be assigned to block the access roads (2) to the quarry site, at junction of the airport road. Proper signage will be installed.
- The guards will be communicating to the blaster by radio to let him know that the entire blasting perimeter has been cleared and that it is safe to blast when he is ready.
- When all is cleared the blaster will sound the siren to let everybody know he is ready to blast. 30 seconds will pass then he will press on the button.
- No one is to leave their position until the blaster goes down to the blast site to make sure that all the explosives set off as properly.
- The blaster will then set off the siren again to let everybody know it is safe to go back to work.
- The trucks will then clear the way and the guards will remove the signs.

3.6 MISFIRE

Before drilling is commenced, the Blaster shall walk the complete pattern to check for any misfire/cut-off holes. The Blaster will look for any signs of explosives or lack of ground movement that might indicate a misfire or cut-off hole. Where an explosive charge has been misfired or cut-off, no work may be performed in the area other than that required making the area safe. Once the hole has been cleaned out, the hole may be re-charged, re-stemmed and blasted.

3.7 MONITORING

There is only one building located within 1.5 kilometers of the quarry. The Learning Center is located to 1.4 km to the northwest. A seismograph will be installed inside the building in order to monitor the vibrations during the entire progress of blasting operations.

3.8 EXPLOSIVE SPILL

When handling, transporting or storing explosives, care will be taken to avoid any spillage. Any spilled product will be promptly reported, cleaned up, and properly disposed. A spill report detailing the incident will be submitted. An incident report will be provided that details the basic cause of the spill and any corrective actions taken to minimize the type of incident from reoccurring.

3.9 INCIDENTS INVOLVING EXPLOSIVES

Any incident involving the transportation, the storage of explosives and restricted of explosives and restricted components shall be reported to the Chief Explosives Inspector as soon as circumstances permit. For an accident serious injury or major property damage, call (855) 912-0012 as soon as possible. All other accidents/incidents should be reported to (450) 773-3431. The completed Explosive Incident Report Form F07-01 and should be emailed to ERDmms@rncan.gc.ca or by fax to (450) 773-6226.

3.10 TRAINING

Training is seen as a key element in the safe usage and proper environmental management of explosives and blasting. All employees working on or around blasting operations will undergo rigorous employee orientation and training procedures for managing, transporting and loading explosives into blast holes. Experienced competent employees are an essential part of blasting best management practices

4. RECLAMATION

The operation of the quarry is anticipated to continue until 2025. The process of the quarry reclamation will be ongoing and not relegated to the end of operations. As a result, progressive reclamation will be employed as areas of the pit quarry become depleted and no longer used. The active quarry site will be kept clean, tidy, trimmed and free of any garbage and debris during the operational. All unused materials will be returned to the quarry, flattened and contoured at the time of final reclamation. Displaced and stored topsoil and overburden will also be returned and placed into selected areas where revegetation will be promoted.

4.1 WATER DIVERSION

As described previously, the quarry development includes a positive drainage management plan for the pit floor. On completion of the operations and final clean-up of the quarry, positive drainage will be maintained or improved to enhance the drainage requirements. Disruption of drainage courses will not be encountered in the development of the quarry. According to the Erosion and Sediment Control Plan (ESCP), adequate mitigation facilities will be installed to reduce the erosion at the discharge point, where the water is coming out from the quarry pit.

4.2 PERMAFROST PROTECTION

Soil permafrost conditions in the quarry are not anticipated. At the end of the quarry operation, the general appearance of the quarry will be of exposed rock, not prone to movement or erosion.

4.3 WILDLIFE HABITAT ENHANCEMENT

Working in conjunction with the environmental monitor, wildlife habitat enhancement will be considered in the reclamation plan. This includes specifics related to the enhancement of revegetation using locally stored materials and if required, reseeding and fertilization using the appropriate and approved mixtures.

4.4 FACE STABILIZATION AND EDGE PROTECTION

Each time a face section of the quarry is completed, loose rocks will be removed with the excavator in order to make sure to avoid future potential rock fall-off. Boulders and rocks will be placed along the top edge of the quarry faces in order to indicate the limit of the quarry perimeter.

APPENDIX 1
CLYDE RIVER HARBOUR CONSTRUCTION

APPENDIX 1

EXPLOSIVE SPECIALIST QUALIFICATIONS

Certificate Number: 2020-0262

Expires at midnight on: July 10, 2025

MINE HEALTH AND SAFETY ACT

BLASTING CERTIFICATE

This certifies

Jean Blouin

meets the requirements of the *Mine Health and Safety Act* and Regulations, and has authority to prepare and conduct blasting in any Nunavut mine, within

Surface

Dated at Yellowknife,
this 10 day of July, 2020

Chief Inspector of Mines

WSCC Workers' Safety & Compensation Commission | ᐃᖃᓗᐊᕐᓂᖅ ᐊᑕᐊᓇᖅᑐᑦ ᐊᒥᓱ ᓇᓕᓕᐅᔨᓪᓗ ᖃᐅᔨᒪᔭᕐᓂᖅ

Promoting workplace safety and care for injured workers.

Certificate Number: 2020-0307

Expires at midnight on: July 10, 2025

EXPLOSIVES USE ACT

EXPLOSIVES HANDLING PERMIT

This permit authorizes

Jean Blouin

to handle and use explosives in Nunavut
(Subject to the limitations below)

Surface

Dated at Yellowknife
this 10 day of July, 2020

Permit Holder

Cary Ingram

Digitally signed by Cary Ingram
DN: dc=ca, dc=nt, dc=wcb, dc=corp, ou=Accounts, ou=User Accounts, ou=Employees, cn=Cary Ingram
Date: 2020.09.10 12:54:26 -06'00'

Inspector or Deputy Inspector

WSCC Workers' Safety & Compensation Commission | ᐃᖃᓗᐊᔪᖅᑎᓂᓪᓗᒍ ᐊᑕᐅᓯᒪᔨᖏᑦ ᑲᑎᒪᔨᖏᑦᑐᑦ

Promoting workplace safety and care for injured workers.

Certificate Number: 2020-0261

Expires at midnight on: July 10, 2025

MINE HEALTH AND SAFETY ACT

BLASTING CERTIFICATE

This certifies

Jean-Francois Auger

meets the requirements of the *Mine Health and Safety Act* and Regulations, and has authority to prepare and conduct blasting in any Nunavut mine, within

Surface

Dated at Yellowknife,
this 10 day of July, 2020

Chief Inspector of Mines

WSCC Workers' Safety & Compensation Commission | ᐃᖃᓗᐊᔪᖅᑎᓂᓪᓗᒍ ᐊᑕᐊᓇᖅᑐᓂᒃ ᐊᒥᓱ ᓇᓕᓕᒫᔪᓂᒃ ᖃᐅᔨᓴᖅᑎᑦ

Promoting workplace safety and care for injured workers.

Certificate Number: 2020-0308

Expires at midnight on: July 10, 2025

EXPLOSIVES USE ACT

EXPLOSIVES HANDLING PERMIT

This permit authorizes

Jean-Francois Auger

to handle and use explosives in Nunavut
(Subject to the limitations below)

Surface

Dated at Yellowknife
this 10 day of July, 2020

Permit Holder

Cary Ingram

Digitally signed by Cary Ingram
DN: dc=ca, dc=nt, dc=wcb, dc=corp, ou=Accounts, ou=User Accounts, ou=Employees, cn=Cary Ingram
Date: 2020.09.10 12:55:03 -06'00'

Inspector or Deputy Inspector

WSCC Workers' Safety & Compensation Commission | ᐃᖃᓗᐃᔨᖏᑎᓂᒃ ᐊᑕᐊᖅᑐᓄᑦ ᐊᒪᓗ ᓇᓕᓕᐅᔪᓂᒃ ᖃᐅᔨᓴᖅᑎᑦ

Promoting workplace safety and care for injured workers.