ALMIQ CONTRACTING LTD.	**SHOP DRAWING / SAMPLE / PRODUCT DATA** **IDENTIFICATION FORM**	T : 418-668-3321 F : 418-668-0652 1340, Ulu Lane, P.O. Box 2140, Iqaluit, NU X0A 0H0

PROJECT : **CONSTRUCTION OF NANISIVIK NAVAL FACILITY, NU**			**Submittal NO.**	**SUB-ALM-DCC-370**		
OWNER : **DEFENCE CONSTRUCTION CANADA**			**Revision NO.**	0	**Date:**	2017-03-24
			Revision NO.	Amen 1	**Date:**	2017-03-27
PROJECT NO. : **NPO1301**	CONTRACT NO. : **55668 CN**	OUR FILE NO. : **148926**	**Revision NO.**	1	**Date:**	2017-04-21
			Revision NO.		**Date:**	

DISCIPLINE :

CONTRACTOR /SUB-CONTRACTOR :	
Almiq Contracting LTD	
1340, Ulu Lane, PO Box 2140	
Iqaluit (NU) X0A 0H0	
Person in Charge : Marc Deschênes	
Phone : 418-668-3321.214 *Fax :*	

MANUFACTURER :	**SUPPLIER :**
Rolls-Royce	
Person in Charge :	Person in Charge :
Phone : *Fax :*	*Phone :* *Fax :*

SHOP DRAWINGS, PRODUCT DESCRIPTION OR SAMPLE SUBMITTED FOR APPROVAL:	**SPECS REFERENCE :**
Quantity of Water Used 2016 Annual Report	

NOTES :

We declare that we have verified the attached documents and/or sample, that they are in compliance with the contract documents and are approved for the construction of the project.

Marc Deschênes Ing., Project Manager
Contractor's Representative

Signature

2017-04-21
Date

Volume of Water Used

Season 2016

CONTRACT: **NPO1301 – 55468 Const. of Nanisivik Naval Facility**

Location: **Nanisivik, Nunavut**

Client: **Defence Construction Canada**

Company: **Almiq Contracting Ltd.**

Prepared by: **Marc Deschênes, Ing.**

Title/Function: **Project Manager**

Signature : _____

Revision : 1

Date : 2017-04-21

TABLE OF CONTENT

1 FRESH WATER SUPPLY

The table below indicates the volumes of water Almiq plans to use. Even though the license allows us to use East Twin Lake, we have planned to use Twin Lakes Creek, for compaction water and for the Sand washing Plant. Also, Almiq has planned to use water from the Hamlet of Arctic Bay, for domestic and industrial (concrete production, dust control and pipe rinsing) purposes during the construction phase of the project:

	Industrial Use (cubic metres)/year	Domestic Use (cubic metres)/year	Combined Volume (cubic metres)/year	Actual Volume of water used (cubic metres)/year
2015	500	1017	1517	1182.5
2016	500	1356	1856	2195
2017	100	1243	1343	-
2018	200	848	1048	-

	Volume of water took in "Hamlet of Arctic Bay" (cubic metres)	Volume of water took in "Twin Lakes Creek" (cubic metres)	Volume of water took in "Underground water (sea water)" (cubic metres)
2015	607.5	500	75
2016	793	1400	2
2017	-	-	-
2018	-	-	-

2 WASTEWATER MANAGEMENT

2.1 Concrete curing water

License / Background / Description info	**Water used for curing concrete poured on the cells**	
Schedule of activity	2016-2017	**QTY used in 2016**
Qty of water to be used (approx.)	20 m^3 (20 000 L)	**5 M^3**
Source	**Hamlet of Arctic Bay**	
Wastewater management / Mitigative Measures	Jute will be installed on concrete surfaces and a quantity of water will be poured on it. This system will keep surfaces moist for curing, maximum 7 days. Waste jute will be reused as much as possible and eventually thrown to waste and treated as regular waste. A quantity of water will be absorbed by concrete, the other by the jute fiber, and the rest will percolate as per contours of the structure. This water is not contaminated and will not cause any erosion.	

2.2 Clean-up water

License / Background / Description info	**Water used for cleaning equipment, tools, etc.**	
Schedule of activity	2015 to 2018	**QTY used in 2016**
Qty of water to be used (approx.)	10 m^3 (10 000 L)	**3 M^3**
Source	**Hamlet of Arctic Bay**	
Wastewater management / Mitigative Measures	Cleaning of equipment will take place in the laydown area. Cleaning station will be approximately 31 metres away from any water body. Water will be use to clear away mud and dust. This installation is not a car wash. No cleaning products will be used. No oily pieces of equipment will be washed.	

2.3 Dewatering of ground water

License / Background / Description info	**Dewatering will occur with excavation works for sheet piles salvage and wharf repair. This is sea water.**	
Schedule of activity	2015-2016-2017	**QTY used in 2016**
Qty of water to be used (approx.)	150 m^3 (150 000 L)	**2 M^3**
Source	**Underground water (sea water)**	
Wastewater management / Mitigative Measures	Water from dewatering operations will be pumped into a sediment pond. Water will be returned to sea in a manner that prevents erosion and sedimentation..	

2.4 Disinfection water and flushing of lines

License / Background / Description info	**Disinfection water will come from seasonal camp opening activities.**	
Schedule of activity	Each season (5 times)	**QTY used in 2016**
Qty of water to be used (approx.)	30 m^3 (30 000 L)	**5 M^3**
Source	**Hamlet of Arctic Bay**	
Wastewater management / Mitigative Measures	Quantities used will be kept at the minimum extent possible. Waste water from this activity will be managed as domestic sewage water i.e. collected by the Hamlet of Arctic Bay's sewage truck.	

2.5 Hydrostatic test water

License / Background / Description info	We will conduct hydrostatic testing of pipelines and storage tanks in advance of commissioning the relevant facilities associated with the Project. For the tanks, we will use sea water
Schedule of activity	2017

Qty of water to be used (approx.)	4140 m^3 of sea water (tanks) 40 m^3 of Hamlet Water (Piping)
Source	Sea water (Tanks) and Hamlet water (Piping)
Wastewater management / Mitigative Measures	Waste water from this activity will be transferred into sediment pond before being tested as per CCME guidelines. Once the guidelines are met, waste water will be released into the sea. No wastewater generated from hydrostatic testing will be released onto land or in freshwater.
Monitoring and Testing	Water discharged from hydrostatic testing will meet CCME water quality guidelines prior to being released into the receiving environment. Release of test water, once water quality guidelines are met, shall be done in a fashion that ensures no erosion or sedimentation occurs.

2.6 Domestic water / sewage water

License / Background / Description info	To support the Project, we established a 60 person camp infrastructure for duration of project, 2015 through 2018.			
Schedule of activity	From the end of May to the end of September – 2015 to 2018.			
Qty of water to be used (approx.)	**2015**	**2016**	**2017**	**2018**
	1017m^3	1356 m^3	1243 m^3	848 m^3
Qty of water to be used (REAL)	**2015**	**2016**	**2017**	**2018**
	600m^3	**780 m^3**	-	-
Source	**Hamlet of Arctic Bay** delivered via truck. Hamlet has confirmed its ability to provide potable water to the project.			
Wastewater management / Mitigative Measures	Domestic wastewater generated during the construction phase will be backhauled to facilities within the Hamlet of Arctic Bay for treatment. Hamlet has confirmed by letter its intent to accept domestic waste water generated by the project.			

2.7 Water used for Compaction and Dust Suppression

License / Background / Description info	Aggregate material is to be placed and compacted for the project. Water will be pumped from Twin Lakes Creek with a hose equipped with a mesh. Water is contained in a 1000 L tank and then sprayed for compaction works as and where needed.	
Schedule of activity	2015-2016-2017	**QTY used in 2016**
Qty of water to be used (approx.)	500 m^3 per year	**500 m^3**
Source	**Twin Lakes Creek**	
Wastewater management	Water is used to increase ground humidity up to 8% and will not exceed this percentage. Ground will not be saturated and no erosion will be created.	

2.8 Water used for Sand washing Plant

License / Background / Description	5500 tons of sand is to be washed for the project. Water will be

info	pumped from Twin Lakes Creek with a hose equipped with a mesh.	
Schedule of activity	2016-2017	**QTY used in 2016**
Qty of water to be used (approx.)	900 m^3 - 2016 100 m^3 - 2017	**900 m^3**
Source	Twin Lakes Creek	
Wastewater management	The water in the sand wash circuit is occasionally added to compensate for the losses.	