

20181128-NS-SR

Document number

2018-11-28 6PM-6AM 658 309 J. Leblanc
Visit date Time (Start/End) Project No. Prepared by
WTD CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG (SP by HD)
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -24 °C

Comments :

Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No Inspection report or other :
Approval Form.

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Production stopped temporarily at the batch plant at ~ 00h00 and resumed at ~ 01h00. Secant piles needed to be approved before producing G.B. slurry.
→ QA rep. went through HD reports of the last days and noticed that on November 24th and 25th (last available report), HD were using more cement than the approved mix (systematically). Cement varied from 1821 to 1838 kg (1770 kg in the approved mix).

→ Casings and drilling equipment were installed at the west abutment in order to start drilling operation for the grout injection.
Casing length = 4.37m Casing diameter = 10cm (4")

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to
→	Produced cement at the batch plant: • mud balance density: 1.235 to 1.255 g/cm ³ Only one batch at 1.235 and one at 1.240. All the others are above 1.24 g/cm ³ . QC representative checked the batch log during the shifts and the cement proportion of the mixes are generally above greater than the approved mix (> 1800 Kg.). • Viscosity: 47 to 66 sec. • Temperature: 11.5 to 14.5 °C	

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
<u>Approval of rock socket depth (>1.0m)</u>	<u>933, 915, 911, 885, 879, 774, 778, 786, 790, 700, 672, 678, 668</u>	<u>See approval form</u>
<u>CB slurry placement</u>	<u>766, 770, 933, 915, 911, 885, 879, 790</u>	<u>Placement according to specs.</u>

SAFE AND SAFETY REMARKS

A lot of co-activity in the east abutment with all located road accesses and heavy equipments. Take a step back to be aware of all the activities that are currently happening around you.

Issued by :

Jonathan Leblanc
Signature

2018-11-28

Date

Verified by :

Signature

Date

SKETCH

<u>Pile #</u>	<u>drop (m)*</u>	<u>Time topping</u>	<u>Pour at / Last top up at</u>
893	0.5 + 0.3	21:30 - 3:00	12:45
889	0.6 + 0.4	21:30 - 3:00	13:00
736	1.0 + 0.5	19:45 - 3:00	15:00
732	1.0 + 0.2	19:45 - 21:30	15:10
696	0.3 + 0.5	21:30 - 11:50	15:45
664	2.2	11:50	17:00
770	0.3 + 0.6	21:30 - 3:00	18:30
766	0.5 + 0.7	21:30 - 3:00	19:30
933	0.5	11:50	22:30
915	1.15	3:00	23:00
911	0.8	2:58	23:43
929	0.9 + 0.2	21:30 - 3:08	12:45
744	0.5 + 0.2	19:45 - 3:00	12:45
885	0.75	2:56	1:10

* drops measured each time a top-up occurred.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181128-05-SP

Document number

28/11/2018 6AM 16PM 658 309 A. Arbaiz
Visit date Time (Start/End) Project No. Prepared by
WTD construction Agnico Eagle
Project Client
SNC-Lavalin KCB (SP by HIO)
Consultant Contractor

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -28 °C

Comments : windchill: -35°C

Appendix : ☐ Yes ☒ No Pictures ☒ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- During the daily meeting it was mentioned the problem with piles 967-975 being used as access road for all the trucks. AEM agreed that these piles should be avoided and the contractor placed some cones to avoid passing on top of the piles.
- One of the QC's fell in the batch plant and hurt his hand. He was sent to medical bank for some x-rays. Therefore, no UCS will be done today. QA took a look at the tests that can be done tomorrow instead and still respect the frequency program.
- Offset and deviations were received and 4 piles do not respect specs (<0.75%; <50 mm): #766 (1.6%); 770 (1.1%); 778 (74 mm); 790 (100 mm).
- During the daily meeting it was mentioned that HIO was using more cement for the

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No Subject Given to
CB mix, resulting in C/W ~ 0.39. HIO replied that they did increase a bit the cement and AEM and KCB did not mind this change. Nevertheless, QC from KCB changed the parameters by adjusting the cement and the bentonite to be more aligned with the mix proposed by the Designer.
the following are the values found for the CB mix of today:
• mud balance: 1.235 - 1.250 g/cm³
viscosity: 50 - 73 sec
Temperature: 11.9 - 13.7 °C.
- Installation of casings started today for casings 1 to 6.

SPECIFIC ELEMENTS VERIFIED

Elements

Location / Piles

Scope and comments

Approval of rock socket
depth937, 941, 871, 867, 863,
859, 814, 782, 752

>1.0 m

CB slurry placement

786, 778, 774, 668, 672,
678, 700, 941, 937, 871, 867,
863, 859, 814

According to specs.

SAFE AND SAFETY REMARKS

Getting darker sooner: low visibility.

Issued by :

Signature

28/11/2018

Date

Verified by :

Signature

Date

SKETCH

File #	Drop (m)	Topped at	Partial/topped at
933	0,4	16cm	6cm
929	0,1	11cm	4.50cm
925	0,2	11cm	4.50cm
915	0,4	11cm	3.45cm
911	0,5	11cm	3.45cm
885	0,5	7.30cm	3.30cm
879	1,8	6cm	3.45cm
790	0,9	6cm	4.50cm
786	2,0	6cm	5.15cm
774	2,4	11.45cm	7.50cm
778	2,7	11.45cm	6.00cm
* 700	4,3	3.40cm	7.00cm
668	2,1	3.40cm	8.45cm
678	2,2	3.40cm	10.45cm
672	1,9	3.40cm	9.50cm

+ Significant slurry loss round after removal of casing.



SNC-LAVALIN

SITE REPORT
(Detailed)

20181129-NS-SR

Document number

2018-11-29	6PM-6AM	658 309	J. Leblanc
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
SNC-Lavalin		KCG (SP by HD)	
Consultant		Contractor	
Weather :	☒ Sunny	☒ Cloudy	☐ Rain
	☐ Storm	☐ Snow	☐ Glaze
Wind :	☐ None gusts	☒ Light	☐ Moderate
	☐ Strong,	Temperature : -18 °C	
Comments :			
Appendix :	☒ Yes	☐ No	Pictures
	☒ Yes	☐ No	Inspection report or other :
Approval Form.			

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Significant slurry loss observed in Pile 716 prior to removing the casing. A drop of 6.1m was measured while the casing was in place. QA/QC and HD supervisor decided to let it set before pouring CB again prior to removing the casing. Was poured again with tremie pipe at ~ 2:30 am.
- Operations had to stop completely at ~ 2h15 due to a decision taken by KCG supervisor. The nurse of Amarug camp at to go to Meadowbank with ~~average~~ for an urgent case, leaving the camp without any medical personnel. KCG supervisor, for health and safety reasons, stopped the operations. Activities will start back at the beginning of the DS. (Code 1). Operation resumed at 5h00.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|---------------------|
| → | Due to complete stop of operations, casings of piles 716, 712 and 708 were removed after 5h00. | Some of the planned |
| | top-ups also need to be completed (700, 752, 814). | |
| → | CB mix properties were consistent and cement content was reduced to reach properties of the approved mix (1770Kg). | |
| | mud balance density : 1.235 to 1.25 g/cm ³ | |
| | Viscosity : 48 to 58 sec. | |
| | Temperature : 11.0 to 16°C | |
| → | Casings 7 to 9 well drilled for grouting injection. The 10 th casing was on going prior to the stop of the operations. | |

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

Approval of rock socket
($>1.0m$)

716-907-931-708-712-720

See approval form

CB slurry placement

752-782-716-907-931
708-712Placement
according to specs.

SAFE AND SAFETY REMARKS

Lot Co-activity in the dike main access at the east abutment.
Drive carefully and accordingly in regards of the conditions.

Issued by :

Jonathan Leblanc
Signature

2018-11-29

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop (m)	Top at	Pour / lost top up.
941	0.6	1h00	19h00
937	1.0	1h00	19h00
915	0.4	20h45	11:00
879 885	0.9	19:30	6:00
871	1.0+0.6	20:45, 23:30	14:20
867	0.5+0.5	20:45, 23:30	17h00
863	0.5+0.5	20:45, 23:30	16h45
859	0.6+0.5	20:45, 23:30	17:15
814	1.45m	23:30	18:00
790	0.5	20:45	6:00
786	0.5	20:45	6:00
778	0.5	20:45	11:45
774	0.4	20:45	11:45
700	2.4	22:15	15:40
678	0.5	22:15	15:40
672	0.6	22:15	15:40
668	0.5	22:15	15:40
664	0.5	22:15	16:05
752	0.9	-	22:00
782	0.5	23:30	19:30
716	6.1 in the casing.	-	23:00
907	casing removed between 5 and 6:00 -	-	00:25
931	casing removed between 5:00 and 6:00 -	-	00:55
708	casing removed between 5:00 and 6:00 -	-	01:50



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SITE REPORT
(Detailed)

20181129-DS-SR

Document number

29/11/2018

6AM/6PM

658309

A. Arbez

Visit date

Time (Start/End)

Project No.

Prepared by

WTD construction

Agnico Eagle

Project

Client

SNC-Lavalin

KCGC SP by HD

Consultant

Contractor

Weather :

☒ Sunny

☐ Cloudy

☐ Rain

☐ Storm

☒ Snow

☒ Glaze

Wind :

☐ None gusts

☒ Light

☐ Moderate

☐ Strong,

Temperature : -18 °C

Comments :

windchill : -25°C

Appendix :

☐ Yes

☒ No

Pictures

☒ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- follow-up of previous daily meeting report (sent by AEM on Nov. 28th) : According to QC, sample CB-WTD-107 was taken from the top of the pile on Nov. 20 (NS) because the QC at the batch plant forgot to take a sample for that shift. When one of the molds of this sample was open by QC to do a 7 day UCS, it was noticed that half of the mold had water (bleeding). According to QC, they probably did not wait enough time when pumping CB slurry to the pile (446 or 454) and took a sample that was more liquid than normal. Nevertheless, QA report 20181121-NS-SR has another story (refer to report). In any case, the CB mold when opened looked abnormal and it was clear that it was CB with too much water.
- Offset and deviations received : 6 piles did not respect offset tolerance: 67 to 81mm.
- As built of secant piles received : Piles 632-633, 765-766, and 770-771 had a gap at

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

- the bottom of rock socket but no gap at the bedrock surface. the wall thickness at bedrock surface is : 0.446 (632-633); 0.440 (770-771); 0.247 (765-766)
- UCS done for 2, 7 and 28 days. Early strength (2 days) = 147 KPa. Tertiary piles 910-916 can be installed.
- HD's drillers in NS found big boulders and ice lenses in the soil when drilling piles 937 and more (towards the east).
- Drilling activities for grout injection continued today and stopped around 1pm due to some problems with the equipment. It was noticed that casing of hole #1 was hit by a truck or an equipment. Also, according to specs, secondary holes were drilled already mid-point of

SPECIFIC ELEMENTS VERIFIED

Elements	Location / PWS	Scope and comments
Approval of rock socket depth	949, 945, 927, 903, 899, 826, 830, 891, 822, 818, 776, 788, 768, 764	> 1.0 m
CB slurry placement	720, 756, 760, 772, 949, 945, 927, 903, 899, 891, 830, 826, 822	According to specs.

SAFE AND SAFETY REMARKS

low visibility due to snow and glare.

Issued by :



Signature

29/11/2018

Date

Verified by :

Signature

Date

SKETCH

Pile #	DOP (m)	Popped at	Pared / ^{1st} Piled at
871	0.4	6am	10.45pm
867	0.7	6.50am	"
863	0.6	6.50am	"
859	1.0	"	"
814	1.2	"	"
931	1.8	7.05am	1am
907	2.8	"	12.15 am
752	1.4	11.10am	6.50am
700	0.7	10.20am	6am
708	1.5	"	"
712	2.0	"	"
716	3.4	11.10am	"
927	1.5	3.20pm	4.25am
945	1.1	"	11.10am
949	1.2	"	10.20am
872	1.2	11.10am	10am
760	1.8	"	9am
756	1.9	"	8.30am
720	1.8	"	7.05am
672	0.3	10.20am	9.50pm
668	0.3	"	9.50pm
903	1.5	3.20pm	1.20pm
899	1.3	"	1.35pm

Document number _____

Visit date _____ Time (Start/End) _____ Project No. _____ Prepared by _____

Project _____ Client **Agnico Eagle**

Consultant **SNC-Lavalin** Contractor _____

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☐ Light ☐ Moderate ☐ Strong, Temperature : _____ °C

Comments : _____

Appendix : ☐ Yes ☐ No Pictures ☐ Yes ☐ No Inspection report or other : _____

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

primary holes. AEM and KCG don't seem to have a problem with this. KCG informed that the bedrock encountered was very fractured and that casing has been placed deeper to sit on sand bedrock. they noticed that no water was present inside the holes but when 2A/2C inspected the holes, there was water at about ~4.0 m from the surface in all the holes. Drilling reports were requested by 2A daily and also a plan with survey points, excel with offset and deviations (when measured).

- Batch plant values for CB mix :-

Mud balance : 1.230 - 1.245

Viscosity : 45 - 65 sec.

temp : 11.1 - 14°C.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to



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SITE REPORT (Detailed)

20181130-NS-SR

Document number

30-11-2018 6PM-6AM 658309 J. Leblanc
Visit date Time (Start/End) Project No. Prepared by
WTD CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG (SP by HD)
Consultant Contractor

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None ☐ Light ☐ Moderate ☐ Strong, gusts Temperature : -15 °C

Comments :

Appendix : ☒ Yes ☐ No Approval Form Pictures ☒ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

Observations of the casing drilling ~~for~~ grout injection. The rod with the drilling bit is going inside the casing (drilling rod of 3.5" diameter). The casing has an external diameter of 4.5" and an internal diameter of 4". Each casing are 4.35m long and are welded together during the drilling process. Both primary and secondary injection points are drilled (low spacing). The verticality is checked manually each 2' by the operator. When bedrock surface is reached, the operator push anchors the casing for 1 or 2' depending of rock quality. As of tonight, both primary and secondary casings are drilled and anchored into bedrock from st. 0+180 to 0+300.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No Subject Given to
CB mix production at the batch plant: mud balance density from 1.235 to 1.245 g/cm³, viscosity from 49 to 59 sec. and temperature from 10.9 to 14.2 °C. HD's report from November 28th shows that less bentonite and water are generally used in the mix proportion, hence not meeting the requirement of the approved mix. The real quantity of water and bentonite are not reflected in HD's report, as ~1.1 Bentonite slurry batch is required for one CB mix PAT. The weights given in the batch log are for 1 batch of Bentonite slurry.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
Approval rock socket depth (>1.0m)	923, 919, 953, 957, 961, 965 806, 810, 802, 794, 784, 780 883, 887	See approval Form
CB slurry placement	818*, 788, 776, 768, 764 923, 919, 953, 957, 961, 965 806, 810, 802, 794	Placement according to specs

* Poured during DS

SAFE AND SAFETY REMARKS

Watch for the heavy equipment's blind spot and avoid standing there to always be visible to operators.

Issued by :

Jonathan Leslanc
Signature

2018-11-30

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop (m)	Topped at	Poured at / Last top-up.
927	0.65 + 0.4	19:30 - 00:45	15:20
903	0.95 + 0.3	19:30 - 00:45	15:20
899	0.8 + 0.5	19:30	15:20
891	0.85 + 0.7	19:30	14:30
830	0.8 + 0.6	19:30 - 1:30	16:30
826	1.45 + 0.7	19:30 - 1:30	16:30
822	1.10 + 0.6	19:30 - 1:30	16:30
772	2.0 + 0.3	20:30 - 1:30	11:10
760	0.6 + 0.3	19:30 - 1:30	"
756	0.9 + 0.3	20:30 - 1:30	"
720	1.0 + 0.3	20:30 - 1:30	"
818	0.65 + 0.75	19:30 - 1:30	17:00
788	0.45	1:30	20:30 - 17:30
776	0.70	"	21:30 - 20:30
768	0.65	"	22:30 - 21:30
764	0.70	"	22:30
919	0.20	"	23:50



SNC • LAVALIN

SITE REPORT
(Detailed)

20181130-DS-SR

Document number

Visit date 30/11/2018	Time (Start/End) 6AM/6PM	Project No. 658309	Prepared by A. Arduiza
Project WTO construction		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG (SR by HO)	
Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☒ Snow ☐ Glaze Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -13 °C Comments : windchill : -19 °C			
Appendix : ☐ Yes ☐ No Pictures ☐ Yes ☐ No Inspection report or other :			

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- GU cement will be finished by the end of DS / beginning of NS. Contractor is not planning on cleaning all the sides, therefore there will be a batch that will be a mix of GU / HE cement slurry. QA/QC will take an additional test for this specific batch and also for the HE cement slurry. Finally the HE mix will be done on NS.
- UCS 2, 7 and 28 days done by QC. All results > 50 kPa. Early strength (2 days) = 153, 164 kPa. Verbal approval to drill tertiary piles for: 665b, 858-872, 878-880, 906-916.
- Off set and deviations were received and 4 piles were out of specs: 768 (76 mm), 776 (83 mm), 826 (86 mm), 919 (1.1%).
- the cores that were placed for piles 967 to 975 (10 days old) were taken out again and trucks are passing on top of the piles. QC from KCG said that they don't need to

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- be protected any more and that there are no depressions showing that a damage has been done.
- Fine filter gradation for the other dikes did not respect specs (not enough fines). Since this sample was taken when the crusher broke, AEM asked to have another sample taken tomorrow.
- Drilling of casings from hole #306 to #354. Surveyor sent excel file with coordinates of theoretical holes with as built. Holes are named by station, i.e. #306 = 0+306.
- Drilling from pile 935 towards the east is being done with core barrel due to permafrost and very hard rock. Some boulders were seen with rock from the rock bucket.
- About 5m drop of cbslurry in pile 680 (inside the casing). The pile was left for about an hour and was filled again. This time, the cbslurry did not chop. the casing will be removed →

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

Approval of rock socket
depth935, 943, 842, 850, 939,
947, 836, 846, 799, 824, 680,
875, 854, 676

>1.0 m.

CB slurry placement

780, 883, 887, 947, 943,
939, 935, 680, 676, 798, 824

According to specs.

SAFE AND SAFETY REMARKS

wildlife on the site. Be careful when driving.

Issued by :

Signature

30/11/2018

Date

Verified by :

Signature

Date

SKETCH

Pile #	Drop (m)	Topped at	Last poured/topped at	Batch plant
965	0,6	6.40 am	12.05 am	
961	0,7	"	"	
957	0,55	"	12.20 am	
953	0,90	"	12.52 am	
923	1,1	"	11.45 pm	
919	0,6	"	11.30 pm	
788	0,3	9.30 am	1.15 am	
776	0,4	11.45 am	1.50 am	
768	1,2	11.45 am	"	
764	1,4	11.45 am	"	
794	1,1	10.15 am	5.10 am	
764	0,8	9.30 am	5.30 am	
780	1,2	10.15 am	7.30 am	
772	0,7	11.45 am	1.50 am	
810	0,3	12.45 pm	2.15 am	
806	0,2	12.45 pm	3.00 am	
887	1,9	10.15 am	8.45 am	
883	2,1	"	8.45 am	
818	0,2	"	7.45 pm	
802	0,3	12.45 pm	4.25 am	

... at the end of DS / beginning of NS.



SNC-LAVALIN

SITE REPORT
(Detailed)

20181201-NS-SR

Document number

Visit date 01/12/2018	Time (Start/End) 6PM-6AM	Project No. 658309	Prepared by J. Leblanc
Project WTD CONSTRUCTION		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG (SP by HD)	
Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze			
Wind : ☐ None gusts ☒ Light ☒ Moderate ☐ Strong, Temperature : -12 °C			
Comments :			
Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No Inspection report or other :			
APPROVAL FORM			

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- The casing of pile 680 is stuck and cannot be removed by the drill. This pile was poured during DS (important slurry loss). HD needs to find a way to remove the casing. Pile 680 will have to be re-drilled and poured again.
- At ~2h00am, batch plant ran out of GU cement and started to use HE cement with mix E approved mix. QA rep. talked with KCG supervisor who confirmed that the following mix was being used in the batch plant system:
 - cement mix #1: 960 kg of cement for 685 kg of water
 - cement mix #2: 960 kg of cement for 685 kg of water
 - Bentonite slurry: 220 kg of dry bentonite for 3425 kg of water
 - Admixture (ARBO): 4.8 kg (0.25% of cement)

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| | KCG supervisor explained that for 1 PAT of CB slurry, it requires 1980 L of cement mix and 3504 L of Bentonite slurry. Batch 3400 was a transition between GU and HE cement (with both type of cement in the mix) and was sampled by QC representative. Batch 3402 was the first batch using HE cement only: mud balance density was of 1.26 g/cm ³ , Viscosity was of 48 sec. and temperature of 11.1 °C. A second sample was taken by QC rep. on HE cement mix, as requested by AEM. | |
| | → Grout injection drilling of casings: Casings anchored into bedrock from st. 0+180 to st. 0+372. KCG still working on a method to measure final verticality of the casings. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
Approval ROCK SOCKET DEPTH ($> 1.0m$)	951, 668B, 963, 959, 955 816, 820, 828, 832, 870, 866 858	See Approval Form
CB Slurry placement	836, 842, 846, 850, 854, 875, 951, 955, 959, 963 668B, 820, 816, 784* * Poured during DS.	According to specs.

SAFE AND SAFETY REMARKS

The working area is getting narrower. Take a step back in order to know where are all heavy equipments and what are they doing before circulating on dike.

Issued by :

Jonathan Lelanc
Signature

2018-12-01

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop(m)	Top up	Poured/Last top up
947	0.655+0.2	20:40-1:15	14:30
943	0.6+0.3	" - "	"
939	0.75+0.35	" - "	"
935	1.10+0.4	" - "	14:15
887	1.7+0.4	20:40-1:20	10:15
883	1.9+0.4	21:35-1:20	"
824	1.10+0.7	21:35-5:25	18:00
798	0.5+0.75	21:35-5:25	17:30
784	0.55+0.2	21:35-5:25	9:30
780	0.60+0.2	21:35-5:25	10:15
676	0.7+0.45	21:35-	16:20
951	0.40	1:15	20:30
854	0.5	5:25	23:30
850	0.55	5:25	22:30
846	0.80	5:25	19:45
842	0.95	5:25	19:30
836	0.60	5:25	18:45
875	1.25	5:25	00:00



SNC-LAVALIN

SITE REPORT (Detailed)

20181201-DS-SR

Document number

01/12/2018

6AM/6PM

658309

A. Arbaiza

Visit date

Time (Start/End)

Project No.

Prepared by

WTO construction

Agnico Eagle

Project

Client

SNC-Lavalin

KCG (SP by HO)

Consultant

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☒ Snow

☐ Glaze

Wind :

☐ None gusts

☐ Light

☐ Moderate

☒ Strong,

Temperature : -20 °C

Comments :

windchill: -32 °C

Appendix :

☐ Yes

☒ No

Pictures

☒ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Deviations and offset received. Piles out of spec: 820 (65mm), 836 (0.81%), 951 (58mm), 955 (60mm).
- UCS 2, 7 and 28 days done by QC. Early strength (2 days) resulted in 123 KPa (> specs req.). Verbal approval to drill tertiary piles up to 872; 878-880; 890-892; 898-932.
- It was mentioned in the daily meeting that pile 680 had to be re-drilled since casing was still stuck and that has been more than 15 hours. Once they re-drilled the pile, the casing was still stuck so HO decided to do another pile to release some pressure (same as pile 374b). This new pile called 678b was drilled and the casing 380 bits finally loose. These two piles will have to be approved (rock socket), prior to CB placement.
- Casing drilling activities for grout injection continued up to hole 382. Casing of hole

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

- 378 broke and an additional hole was done "378b" about 10cm next to 378. It seems that some grout or mud came out from holes 360 and 366. Also, daily reports (28, 29 and 30 Nov.) were received and the measures are not in the good place (rock depth vs casing depth) or do not respect min. anchor to bedrock of 200mm (according to specs). The values are being reviewed and will be sent tomorrow.
- The mix continued today and the tests gave:
 - muck balance: 1.255 - 1.265 g/cm³ but most of the time 1.260 g/cm³
 - viscosity: 52 - 79 sec.
 - Temperature: 10.8 °C - 13.2 °C.

SPECIFIC ELEMENTS VERIFIED

Elements

Location / Piles:

Scope and comments

Approval of rock socket
depth895, 914, 878, 910, 808, 812,
906, 922, 926, 840, 944, 848,
852

> 1.0 m

CB slurry placement

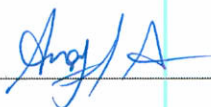
828, 832, 858, 870, 866, 878,
895, 812, 808, 914, 910, 922,
926

According to specs

SAFE AND SAFETY REMARKS

Equipment & crew close to each other; make sure the operator sees you.

Issued by :



Signature

01/12/2018

Date

Verified by :

Signature

Date

SKETCH

Pile #	Drop (m)	Toppled at	Parred / Popped at
668b	1,5	5.55 am	2.30 am
858	1,6	10.50 am	8.10 am
816	1,1	6.50 am	3.80 am
820	1,0	"	4.45 am
824	0,7	"	5.36 am
925	0,4	9.30 am	9.30 am
929	0,4	"	"
943	0,3	"	1.05 am
951	0,4	"	1.05 am
955	0,3	"	12.30 am
959	0,25	10.40 am	12.15 am
963	0,3	"	12.30 am



SNC-LAVALIN

SITE REPORT (Detailed)

20181202-SR-NS

Document number

02-12-2018 6PM-6AM 658 309 J. Leblanc
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG (SP by HD)
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None ☒ Light ☐ Moderate ☐ Strong, Temperature : -23 °C

Comments :

Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No Inspection report or other :
Approval Form.

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Viscosity - Time development performed on a sample of CB mix taken prior to pouring. Results and details in the sketch section.
- A half a truck was wasted (waste dump) due to a major problems with the pumps on the dike (pumps needed to be changed). The CB slurry was about to wait for more than 3 hours and the problem wasn't fixed yet. CB pouring on dike stopped from 1h15 to ~ 3h15 am. Batches numbers were 3472-3474.
- A flag from pile B74 was implemented by mistake by the surveyor (not in the approved zone). QA rep. asked the surveyor to remove it to avoid any confusion with HD.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No Subject Given to

- Casings have been drilled to station 0+414 for grout injection. At 0+402, some mud or grout was present in the casing during drilling. The air pressure was hard to maintain because of it. From the observation of the frozen cuttings, it is hard to confirm if the material is grout or crushed fine filter material.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
Approval rock socket >1.0 m	678b, 680, 804, 792, 918 902, 898, 890	See approval form
Placement of CB slurry	840, 844, 852, 906*, 848, 804, 792	According to specs.

* Poured during DS.

SAFE AND SAFETY REMARKS

Equipments are close to the dike access. Adjust your driving by taking this fact into account.

Issued by :

Jonathan Leblanc
Signature

2018-12-02

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop (m)	Tap	Pave / last top	Viscosity - time development		
926	0,5 + 0,15	18:10 - 1:00	17:30	Batch 3458 cement mix 1 @ 6:58 pm cement = 970 kg water = 675 kg cement mix 2 @ 7:06 pm cement = 973 kg water = 676 kg Bentonite : 217 kg Water : 3431 kg. ARBO : 4.8 kg.		
922	0,8 + 0,3	18:10 - 1:00	17:00			
914	0,7 + 0,3	18:10 - 1:00	14:45			
910	0,4	18:10	15:30			
895	0,8	18:10	12:30			
878	0,3 + 0,2	22:00 - 1:00	12:40			
870	0,3	22:00	12:40			
866	0,3 + 0,2	22:00 - 1:00	16:30			
832	0,3	18:10	10:40			
828	0,3	18:10	10:40			
816	0,4	22:00	6:50			
812	1.1 + 0,2	22:00 - 1:00	13:30	Time	Temp. (°C)	Visco. (s)
808	0,75	22:00	14:00	0 (19:10)	11,5	53
668b	was not measured + 0,4	18:10 - 1:00	5:55	0,5 (19:40)	11,5	54
844	0,6 + 0,4	22:00 - 1:00	20:45	1.0 (20:10)	11,7	54
840	1.1	1:00	22:30	1.5 (20:40)	12,2	62
852	0,2 + 0,2	22:00 - 1:00	19:20	2.0 (21:10)	12,5	65
848	0,4 + 0,1	" - "	19:50	2.5 (21:40)	13,0	90
906	0,4 + 0,2	" - 1:00	~16:00	3.0 (22:10)	13,2	98
804	0,8	1:00	23:15	3.5 (22:40)	13,7	134
				4.0 (23:10)	14,3	> 180 *

* CB mix was dripping from Marsh Cone



SNC • LAVALIN

SITE REPORT (Detailed)

20181202-DS-SR

Document number

02/12/2018

6AM/6PM

658309

A. Arboiza

Visit date

Time (Start/End)

Project No.

Prepared by

WTD construction

Agnico Eagle

Project

Client

SNC-Lavalin

KCG (SP by HOD)

Consultant

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☒ Snow

☐ Glaze

Wind :

☐ None
gusts

☐ Light

☒ Moderate

☐ Strong,

Temperature : -20 °C

Comments :

Whedchill -27°C

Appendix :

☐ Yes

☒ No

Pictures

☒ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- UCS tests done for 1, 2, 7 and 28 days. 2 days gave 175 KPa. 1 day UCS were done since there was layout missing to drill more piles (since there are not many piles remaining). 3 tests UCS at 1 day were done (samples taken at different times):
- CB-WTD-126 - sample taken at 1.50 am (transition batch - GU/HE cement) - 142 KPa
- CB-WTD-127 - sample taken at 3.15 am (only HE cement) - 150 KPa
- CB-WTD-128 - sample taken at 3.00 pm (only HE cement) - 129 KPa
- verbal approval was given to drill all the piles. Proper approval form will be sent tomorrow.
- 3 piles out of spec for offset and deviation: 678b (86mm); 792 (56mm); 918 (0.81%).
- As built sent for secant piles: no gaps on the secant wall.
- Attend 3-weekly: secant pile installation is forecasted to end on Dec 4th.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

- It was noticed that one of the secans containing HE only had half of HE cement and the other half was GU. HE and GU were mixed at the batch plant 50-50 and this batch was sampled by QC. Only 1 truck contained this GU/HE cement.
- Casing installation for grout injection continued up to secondary hole 450. Yesterday's daily report was sent today and QA asked for some corrections, including correction for hole 378b instead of 378 and also comments of rock quality and mud or slurry level in holes.
- Batch plant tests:
 - mud balance: 1.255 - 1.265 g/cm³
 - viscosity: 4-69 sec.
 - temperature: 12.1 - 15.6 °C.

SPECIFIC ELEMENTS VERIFIED

Elements	Location / Piles	Scope and comments
Approval of rock socket depth	796, 800, 924, 874, 856, 950, 946, 934	> 1.0 m
CB slurry placement	918, 902, 898, 890, 680, 678b, 800, 796, 856, 874, 924, 950, 946	According to specs

SAFE AND SAFETY REMARKS

Stay focus on the task, especially now that it is close to the end of an activity.

Issued by :



Signature

02/12/2018

Date

Verified by :

Signature

Date

SKETCH

Pile #	Drop (m)	topped at	pared at / topped at
895	0,4	10.35	9.30 pm
902	1,4	"	7.30 am
852	0,7	9.20 am	12.30 am
848	0,8	"	12.50 am
844	1,1	"	12.50 am
840	0,9	"	9.30 pm
804	1,6	"	1.15 am
792	1,4	"	3.30 am
680	2,4	12.15 pm	4.45 am
678b	2,4	"	6.00 am

- when verifying some data in the sample register, QA noticed that tertiary piles between 967 to 975 were not drilled all the way to bedrock (according to Hb's encountered bedrock). It seems that the approval was done using theoretical bedrock which it is about 1m above Hb's encountered bedrock. According to designer, these piles could have just been anchored in the ice poor till instead of bedrock (see e-mail of Nov. 16). therefore, from a design perspective, there should not be a problem for those tertiary piles.



SNC-LAVALIN

SITE REPORT
(Detailed)

2018-12-03

Document number

03-12-2018 6PM-6AM 658309 J. Leblanc
Visit date Time (Start/End) Project No. Prepared by
WTD CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG (SP by HD)
Consultant Contractor

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☒ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -16 °C

Comments :

Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No Inspection report or other :
See Approval Form

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- CB production temporarily stopped at the batch plant (no more pile approved on the dike). Production started back at 21h30. In order not to wait any longer for the topups, the first CB truck was used for all accessible topups.
- QA rep. noticed that QC rep. have no more cylinders to make bleeding tests (they are all broken). QC asked to KCG for new one and they are on the way but QC don't know when they will receive them.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to
→	Grout injection drilling of casings reached st.	O+498.
→	CB mix properties :	
	density : 1.255 to 1.270 g/cm ³	
	Viscosity : 51 to 61 seconds	
	Temperature : 11.1 to 14.3 °C	

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

Approval of rock socket
depth ($>1.0\text{m}$)942, 938, 930, 908, 912, 860
864, 868, 966, 962, 954
958, 904, 916, 920

See approval form

CB slurry placement

934, 930, 938, 942, 908,
912, 868, 864, 860, 904

According to specs.

SAFE AND SAFETY REMARKS

All heavy equipments are now working in a zone of
 $\sim 100\text{m}$. Be extremely careful.

Issued by :

Jonathan Leblanc

Signature

2018-12-03

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop (m)	Top	Time / last top.
950	1.2	22:00	17:15
946	1.1	22:00	17:30
924	1.2	22:00	15:15
918	0.3	22:00	15:45
898	0.5 + 0.3	22:00 - 1:15	15:45
890	0.4	22:00	15:45
874	0.9 + 0.4	22:00 - 1:15	"
856	1.1 + 0.3	22:00 - 1:15	"
868	1.1	4:05	2:10
864	1.2	4:05	3:00
860	1.2	4:05	4:00
800	0.4	22:00	15:45
796	0.4	23:00	15:45
680	0.4	23:00	12:30
678B	0.4	23:00	12:30
938	1.1	2:45	23:48
942	1.1	2:45	00:05
912	1.2	4:15	01:00
908	1.3	4:15	01:15



SNC • LAVALIN

SITE REPORT (Detailed)

20181203-DS-SR

Document number

03/12/2018

Visit date

6AM/6PM

Time (Start/End)

658309

Project No.

A. Arbuiza

Prepared by

WTD construction

Project

Agnico Eagle

Client

SNC-Lavalin

Consultant

KCG (SP by HO)

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☒ Snow

☐ Glaze

Wind :

☐ None

gusts

☐ Light

☐ Moderate

☒ Strong,

Temperature : -12 °C

Comments :

windchill : -20 °C

Appendix :

☒ Yes

☐ No

Pictures

☒ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- offset and elevations received. 6 piles do not respect specs: 796 (0.817.); 920 (64 mm); 924 (68 mm); 950 (54 mm); 958 (70 mm); 966 (1.17.)
- According to the viscosity - time development performed on a H&E CB mix (refer to 20181202-US-SR) there is now a shorter time to place the slurry, extract the casings and do top-ups. It was discussed with AEM that in order to lengthen the gel time, the cement quantity can be decreased, or increase the bentonite, or both. AEM prefers to keep the mix as is since there are only 26 piles left to finish the secant wall, and that placement of slurry, removal of casings and top-ups are being done within 4 hours.
- casing installation for grout injection finished today (last hole being S-510). washing activities shall start next Monday 10th of December. Revised reports (28 Nov - 1st Dec)

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

Were sent yesterday and they were revised by ZA. there are still mistakes in report of the 28 of November (casing length < rock depth). It was also noticed that the values measured of rock depth were modified. It seems that driller changed the values to obtain a min. socket of 200 mm. Because of this inconsistency QC will measure all the depths in holes 180 to 210. In addition QA/QC will measure the depth of random holes to verify the driller's data. the Dec. 2nd report was received today and according to the measures, the rock socket is always > 200 mm, which is a spec requirement.

- It was noticed that the CB mix was getting stuck at the bottom of the vacuum truck, therefore the mix changed from 0.25% to 0.5% of Arbo at 9.40am (batch 3552-3554) and will continue like that until the end of the project.

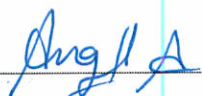
SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
Approval of rock socket depth	894, 900, 884, 876, 872	>1.0 m
CB slurry placement	916, 920, 966, 962, 954, 958, 900, 894, 884	According to specs

SAFE AND SAFETY REMARKS

A lot of co-activity in a short distance. Make sure operators see you.

Issued by :



Signature

03/12/2018

Date

Verified by :

Signature

Date

SKETCH

Pile #	Drop (m)	Poured at	Last poured	Batch plant tests
942	0,4	9.40	2.50 am	• mud balance: 1.255 - 1.270 g/cm ³ • Viscosity: 43 - 73 sec. • temperature: 10.8 - 15.8 °C
938	0,5	"	11.15 pm	
934	0,3	"	9.30 pm	
924	0,2	"	9.30 pm	
912	0,3	"	3.50 am	
864	0,5	"	3.50 am	
930	0,2	"	11.15 pm	
860	0,7	"	3.50 am	
904	0,8	"	4.45 am	
908	0,5	"	4.45 am	
916	0,8	"	5.30 am	
942	0,5	"	2.50 am	
868	1,0	"	3.50 am	
966	1,2	12.35 pm	2.15 am	
962	1,0	"	10.40 am	
958	1,0	"	11.35 am	
920	1,6	2.30 pm	9.40 am	
954	1,2	"	10.50 am	
884	1,5	3.30 pm	2.30 pm	

Document number _____

Visit date _____ Time (Start/End) _____ Project No. _____ Prepared by _____

Project _____ Client **Agnico Eagle**

Consultant **SNC-Lavalin** Contractor _____

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
 Wind : ☐ None gusts ☐ Light ☐ Moderate ☐ Strong, Temperature : _____ °C

Comments : _____

Appendix : ☐ Yes ☐ No Pictures ☐ Yes ☐ No Inspection report or other : _____

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- When taking a look at QC registry at the batch plant, it was noticed that the batches from previous day that contained GU were not properly marked. Batches 3504-3506-3508-3510 contained full GU. Batches 3512-3514 contained half GU half HE. In addition batch 3476-3478 was marked as "Full Arbo" next to sample # CB-WTD-129, nobody on site is aware that Full Arbo (0.5%) was used before for the HE mix. Since this happened during NS, a follow-up should be done with NS crew.
- Due to weather (strong winds and snow), the operations were stopped for about 2 hours. Visibility was reduced and it was not safe with all the equipment which is very close. Surveyor could not implement points either. Works re-started at the end of DS.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to



SNC • LAVALIN

SITE REPORT
(Detailed)

20181204-NS-SR

Document number

2018-12-04

Visit date

6PM-6AM

Time (Start/End)

658309

Project No.

J. LEBLANC

Prepared by

WTD CONSTRUCTION

Project

Agnico Eagle

Client

SNC-Lavalin

Consultant

KCG (SP by HD)

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None
gusts

☐ Light

☐ Moderate

☒ Strong,

Temperature : -24 °C

Comments :

Appendix :

☒ Yes

☐ No

Pictures

☒ Yes

☐ No

Inspection report or other :

Approval form

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ QA/QC rep. measured casings depth for grout injection. Casings from st. 0+180 to 0+210 were measured with 6 more between st. 0+210 to 0+510 (last casing). Results are presented in sketch section for depth from top of casing and for measured of casing above ground (stick up).

→ Pile 944 bottom of rock socket was found not to be deep enough by QC rep. When checked by QA rep., the pile was not deep enough from 1.3 m. QA rep. went with QC rep. to make sure ~~the pile was~~ it was not a mistake while measuring with tape. QC rep. did in fact made a mistake while measuring and the pile was drilled at the right target depth.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

CB mix properties:

max balance density : 1,255 to 1,27 g/cm³

viscosity : 44 to 69 sec.

Temperature: 10,5 to 17,9 °C

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
Approval of rock socket depth ($>1.0\text{m}$)	862-888-880-928-932-936 940-944-948-952-892 940-956	See approval form
CB slurry placement	876-872-880-862-888 940-936-928-944-948 952-932	According to specs

SAFE AND SAFETY REMARKS

Very low visibility due to strong wind and snow that is being blown. Have a good communication with operations.

Issued by :

Jonathan Leblanc

Signature

2018-12-04

Date

Verified by :

Signature

Date

SKETCH

Pile #	depth (m)	Top	Done/last top.	Great injection casing		
958	0,3	22:00	12:35	station	depth (m) Top of casing	stick up (m)
954	0,3	"	14:30			
920	0,4	"	14:30	0+180	6,32	0,30
900	0,5	"	12:35			
894	1,1	"	13:00	0+186	6,60	0,34
884	0,5	19:53	15:30	0+192	7,53	0,33
880	0,65	00:00	20:05	0+198	7,55	0,35
872	~0,50	00:00	21:30	0+204	8,78	0,35
876	0,30	00:00	19:50	0+210	9,12	0,30
862	0,20	5:30	23:50	0+246	7,73	0,35
888	0,35	5:30	1:20	0+300	7,15	0,37
940	0,8	5:30	1:50	0+354	13,25	0,28
936	0,8	5:30	2:55	0+414	10,38	0,34
				0+474	8,50	0,34
				0+510	9,04	0,36

20181204-DS-SR

Document number

04/12/2018 06AM/06PM 058309 A. Arbizu
 Visit date Time (Start/End) Project No. Prepared by
 WTD construction Agnico Eagle
 Project Client
 SNC-Lavalin KCG (SP by HD)
 Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
 Wind : ☐ None gusts ☐ Light ☒ Moderate ☐ Strong,
 Temperature : -34 °C
 Comments : windchill: -53°C
 Appendix : ☐ Yes ☐ No Pictures ☐ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Offset and deviations were sent and 5 piles were out of specs for deviation or offset location: 880 (51mm); 888 (0.82%); 894 (188 mm); 962 (0.9%); 882 (0.90%)
- CB batch plant tests : • Mud balance : 1.255 - 1.265 g/cm³
 • Viscosity : 43 - 55 sec.
 • Temperature : 12.4 - 14°C
- End of secant wall at the end of DS.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

Approval of rock socket +
depth

882, 886, 896, 964

71.0 m.

CB slurry placement

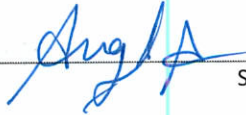
892, 956, 960, 964

According to specs

SAFE AND SAFETY REMARKS

Very cold weather, wear appropriate clothing.

Issued by :



Signature

04/12/2018

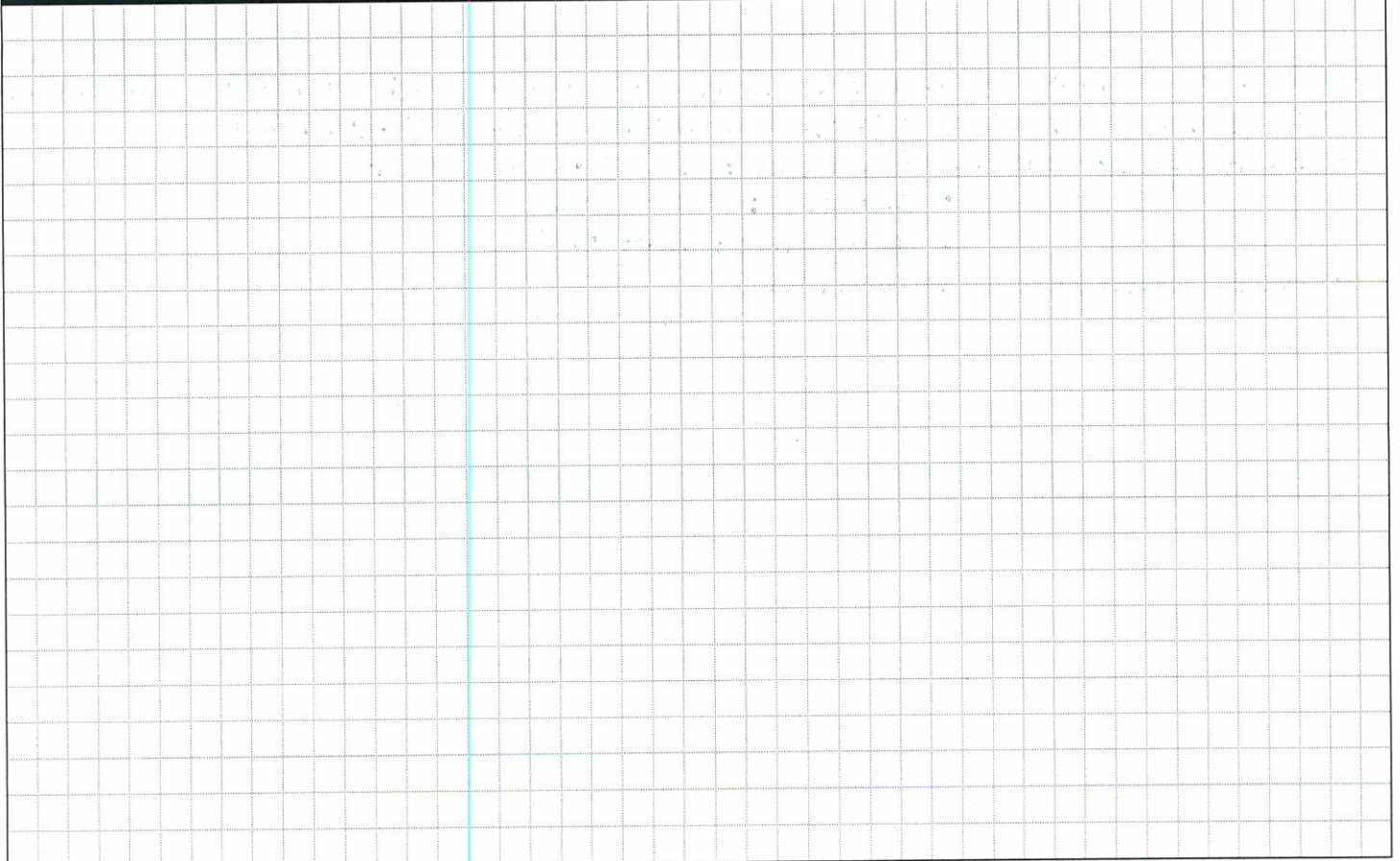
Date

Verified by :

Signature

Date

SKETCH



20181205-NS-SR
Document number

05-12-2018 6PM/6AM 658309 J. Leblanc
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG (SP by HD)
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☐ Light ☒ Moderate ☐ Strong, Temperature : -34 °C
(-53 with wind factor)

Comments :

Appendix : ☒ Yes ☐ No Pictures ☐ Yes ☒ No Inspection report or other :
Approval Form.

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Secant piles cutoff wall was completed during last DS. The last top ups were completed at the beginning of the NS (see sketch section).
- HD started demobilization by removing drill rigs from the dike.
- As-built (final update) was checked by QA rep. with surveyor and there was no gap in the cutoff wall. The final As-built pdf file will be send tomorrow by surveyor.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

SAFE AND SAFETY REMARKS

Wear proper clothing, even for a small period of time outside as it is really cold.

Issued by :

Jonathan Leblanc
Signature

2018-12-05

Date

Verified by :

Signature

Date

SKETCH

Pile #	drop (m)	Top	Done / last top
964	1.8	22:45	17:45
960	0.4	21:00	13:30
956	0.3	21:00	"
952	0.4	"	"
928	0.35	"	"
896	0.4	"	17:15
886	0.4	"	"
882	0.45	22:45	"

20181206-DS-SR

Document number

Visit date: 2018-12-06 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL
Project: W TO CONSTRUCTION Client: Agnico Eagle
Consultant: SNC-Lavalin Contractor: KCG

Weather: ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind: ☒ None gusts ☐ Light ☐ Moderate ☐ Strong,

Temperature: -31 °C

Comments:

Appendix: ☒ Yes ☐ No Pictures ☒ Yes ☐ No

Inspection report or other:

PHOTO

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- No QA SITE REPORT FROM DAY SHIFT OF DECEMBER 5, 2018 DUE TO CREW CHANGE. FROM NOW ON, NO QA INSPECTOR WILL BE ON SITE DURING NIGHT SHIFT.
- DURING THE DAILY MEETING, THE CONTRACTOR ASKED QA/QC IF THEY COULD REMOVE THE WOODEN PALLETS AND CLEAN THE SURFACE OF THE DIKE. QA AND QC WENT ON THE DIKE AND GAVE VERBAL APPROVAL TO CLEAN A CERTAIN PORTION OF THE DIKE, BUT SOME PILES NEAR THE EAST END STILL HAD A SOFT SURFACE, QA AND QC WILL GO BACK ON THE DIKE IN THE FOLLOWING DAYS TO ASSESS IF THE REMAINING PALLETS CAN BE REMOVED.
- QA SENT THE LAST APPROVAL FOR THE DEPTH OF ROCK SOCKET FOR THE SECANT PILE WALL TODAY.
- QA RECEIVED TODAY THE CASING DRILLING REPORT OF DECEMBER 5, 2018 FOR THE BROU INSECTION. THESE DATA SUPERSEDE THOSE FROM THE CASING DRILLING REPORT OF NOVEMBER 28, 2018. QA AND QC WENT ON THE DIKE TO MEASURE THE TOTAL LENGTH OF THE CASINGS TO COMPARE THEM WITH THE DATA FROM KCG'S REPORT. THE

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No subject Generated
RESULTS ARE PRESENTED IN THE SKETCH SECTION. AGNICO EAGLE REPRESENTATIVES HAD A LOOK AT THOSE DATA AND FOUND THAT THE TWO SETS OF DATA WERE CLOSE ENOUGH.

- THE LAST SECANT PILES WERE POURED DURING DAY SHIFT OF DECEMBER 4, 2018 AND TAPPED UP IN THE FOLLOWING NIGHT SHIFT. TODAY, THE SURVEYOR TOOK THE ELEVATION OF THE TOP SURFACE OF SOME OF THOSE PILES WHICH SEEMED TO BE UNDER EL. 157.0 m:

• PILE #882: EL. 156.85 m

• PILE #964: EL. 156.78 m

IT WAS AGREED BETWEEN AEM, QA AND QC TO LEAVE THOSE PILES 'AS IS' EVEN IF THEY WERE A BIT SHORT (0.22 m TO 0.15 m).

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

A WOLF HAS BEEN SPOTTED NEAR THE GARAGE ON THE CONSTRUCTION PAD TODAY. MAKE SURE TO STAY IN A SAFE PLACE AS SOON AS THIS SITUATION IS COMMUNICATED ON THE RADIO AS IT WAS THE CASE TODAY.

Issued by :



Signature

2018-12-06

Date

Verified by :

Signature

Date

SKETCH

TABLE 1: COMPARISON BETWEEN DATA FROM KCG AND QC FOR THE LENGTH OF CASING FOR INSECTION

HOLE #	TYPE	CASING TOTAL LENGTH ^a (m)	CASING TOTAL LENGTH ^b (m)	DIFFERENCE (m)
180*	PRIMARY	6.5	6.6	0.1
186*	SECONDARY	6.6	6.8	0.2
192*	PRIMARY	7.7	7.8	0.1
198*	SECONDARY	7.7	7.8	0.1
204*	PRIMARY	9.0	9.0	0.0
210*	SECONDARY	8.9	9.2	0.3

^a DATA FROM KCG CASING DRILLING REPORT, NIGHT SHIFT OF DECEMBER 5, 2018.

^b DATA FROM QC REPRESENTATIVE USING A MEASURING CHAIN ON DECEMBER 6, 2018.
IT IS THE LENGTH FROM TOP OF CASING TO THE BOTTOM OF THE HOLE.

* THOSE CASINGS WERE DRILLED ON NOVEMBER 28 BUT SOME MISTAKES WERE FOUND IN KCG REPORT. AEM ASKED KCG TO DRILL AN ADDITIONAL 900mm AS SHOWN IN THE PHOTO IN APPENDIX.



Figure 1: A photograph of the casing of primary hole #180 showing the ~200 mm welded tube on top of the casing

20181207-DS-SR
Document number

Visit date: 2018-12-07 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL
Project: WTD CONSTRUCTION Client: Agnico Eagle
Consultant: SNC-Lavalin Contractor: KCG

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong,

Temperature : -24 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ QC REPRESENTATIVE WENT ON THE DIKE TO EVALUATE THE HARDNESS OF THE TOP OF THE REMAINING SECANT PILES COVERED BY A WOODEN PALLET AND GAVE VERBAL APPROVAL TO CLEAN THE REMAINING SECTION OF THE DIKE SINCE QC FOUND THAT THE CB SLURRY WAS HARD ENOUGH. THE PALLETS WERE REMOVED SHORTLY AFTER AND THE SURFACE OF THE DIKE WAS CLEANED. THIS WAS NECESSARY IN ORDER TO MOVE THE "PERMODOME" ON THE DIKE IN PREPARATION OF THE GROUT INJECTION THAT SHOULD BEGIN NEXT WEEK.

→ INCLINOMETERS ARRIVED ON SITE AT THE END OF THE SHIFT. VERTICALITY OF CASINGS FOR GROUT INJECTION WILL BE ASSESSED TOMORROW.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

BLAST AT QUARRY 2: STAY OUT OF THE RADIUS

Issued by :

[Signature]

Signature

2018-12-07

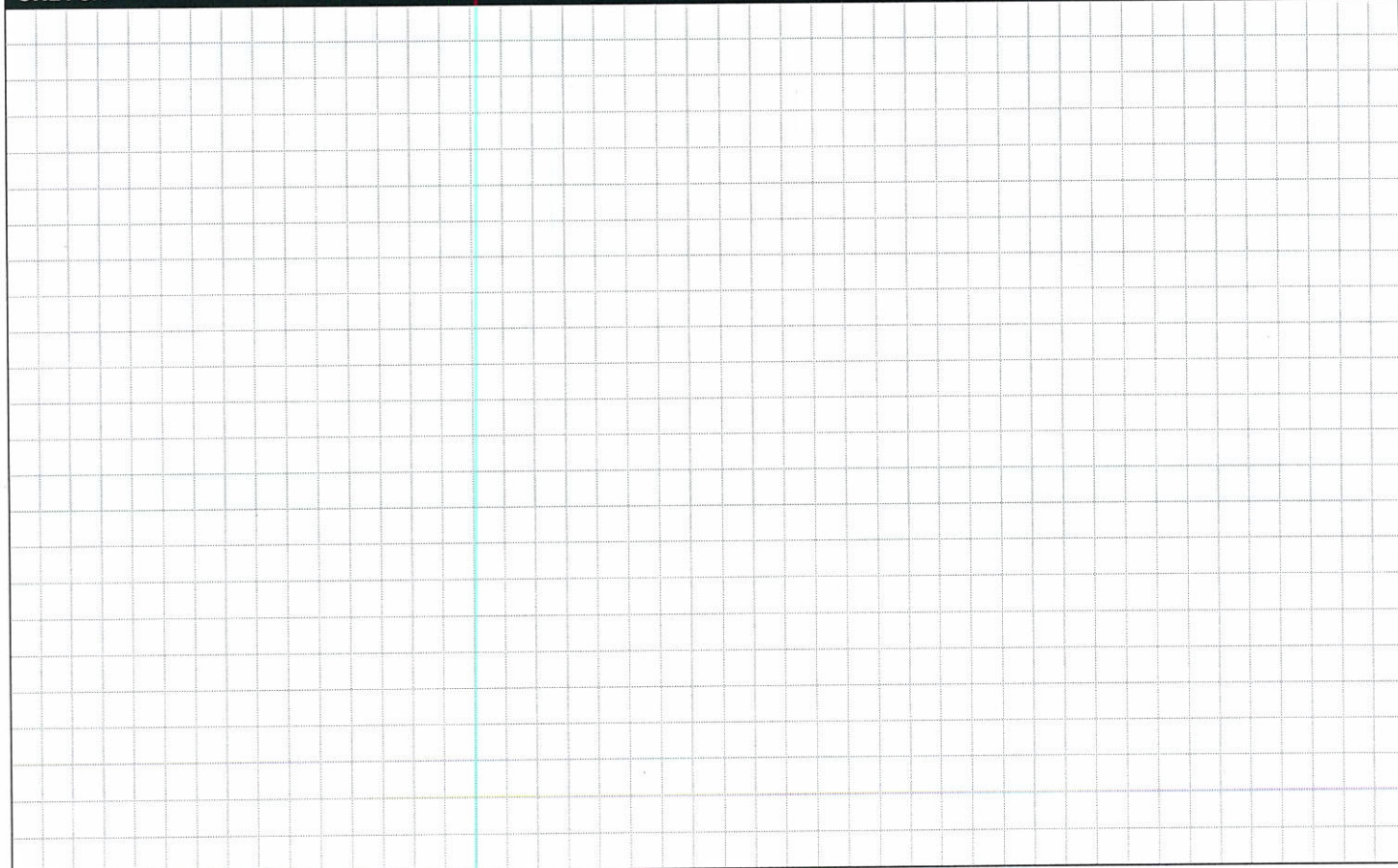
Date

Verified by :

Signature

Date

SKETCH



20181208-05-SR

Document number

2018-12-08 6:00/18:00 658309 M. JÉZÉQUEL
 Visit date Time (Start/End) Project No. Prepared by
 WTD CONSTRUCTION Agnico Eagle
 Project Client
 SNC-Lavalin KCG
 Consultant Contractor

Weather : ☒ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong,

Temperature : -29 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- QA AND QC WERE ON THE DIKE TO OBSERVE THE CONTRACTOR TAKING VERTICALITY READINGS OF THE CASINGS FOR GROUT INJECTION USING AN INCLINOMETER. TWO READINGS PER HOLE WERE TAKEN: ONE CLOSER TO THE TOP AND ANOTHER CLOSER TO THE BOTTOM OF THE HOLE. DEPTHS AND DETAILS TO BE SENT BY KCG. QA NOTED THAT SNOW ACCUMULATED ON THE INNER WALL OF THE CASING. THE TOP READING USING THE INCLINOMETER COULD BE AFFECTED BY THE PRESENCE OF THICKER SNOW/ICE ON THE WALL AS IT WAS NOTED FOR HOLE # S-426 (THE INCLINOMETER WAS PLACED AGAINST THE NORTH SIDE OF THE INNER WALL OF THE CASING WHILE TAKING READINGS).
- QA VISITED THE WRSF DIKE AND NOTED THE PRESENCE OF ~10 CM OF SNOW AT THE WEST ABUTMENT (ON THE FLOOR) BUT MORE SIGNIFICANT ACCUMULATION WERE NOTED ON THE UPSTREAM/DOWNSTREAM LATERAL SLOPES. AN EXCAVATOR COULD BE USED TO REMOVE THE SNOW AT THAT LOCATION, IF AVAILABLE.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

COLD TEMPERATURE: USE LINERS AND WARM EQUIPMENT.

Issued by :

Signature

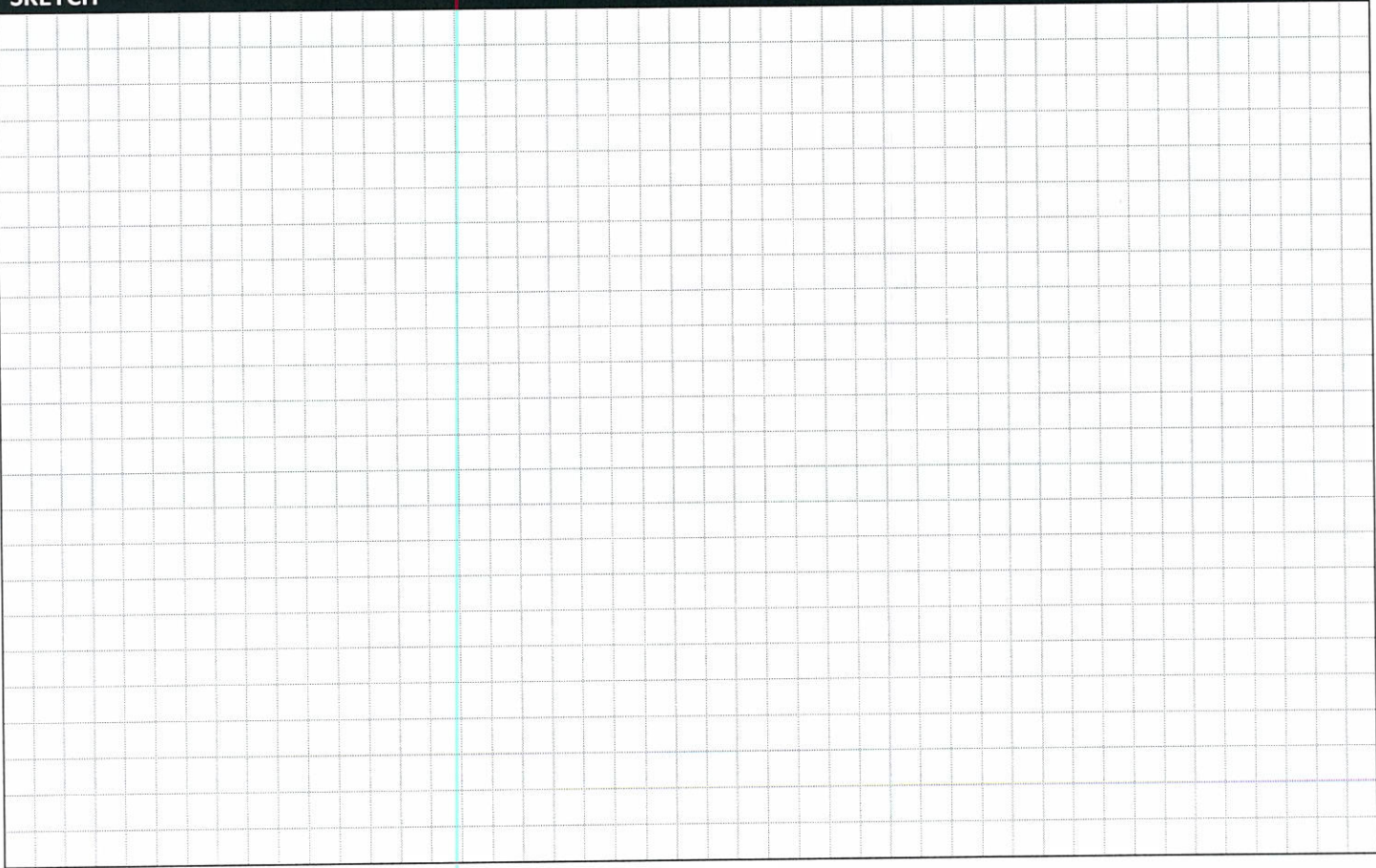
2018-12-08
Date

Verified by :

Signature

Date

SKETCH



20181209-DS-SR

Document number

Visit date 2018-12-09	Time (Start/End) 6:00/18:00	Project No. 658309	Prepared by M. JÉZÉQUEL
Project WTO CONSTRUCTION		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG	

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☐ Light ☐ Moderate ☒ Strong,

Temperature : -24 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ QA AND QC DREW UP A LIST OF 4 SAMPLES TO BE TESTED FOR PERMEABILITY

• CB-WTO-108

• CB-WTO-115

• CB-WTO-122

• CB-WTO-127

QA PAID SPECIAL ATTENTION THAT THE PILES ASSOCIATED TO THOSE SAMPLES ARE WELL DISTRIBUTED SPATIALLY ALONG THE EASTERN PART OF THE DIKE. THIS IS THE LAST SHIPMENT OF SAMPLES AND THEY WILL BE SENT DOWN SOUTH TOMORROW.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

→ Mold WAS OBSERVED ON THE WALLS OF THE HUMID ROOM WHERE CB SAMPLES ARE CURING. UCS TESTS ARE SUSPENDED UNTIL FURTHER NOTICE. CORRECTIVE MEASURES NEED TO BE TAKEN BEFORE BEING ABLE TO WORK IN THE LABORATORY AGAIN.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

DO NOT GO IN THE LABORATORY WHERE THE CB SAMPLES ARE STORED

Issued by :

Mark Spyl
Signature

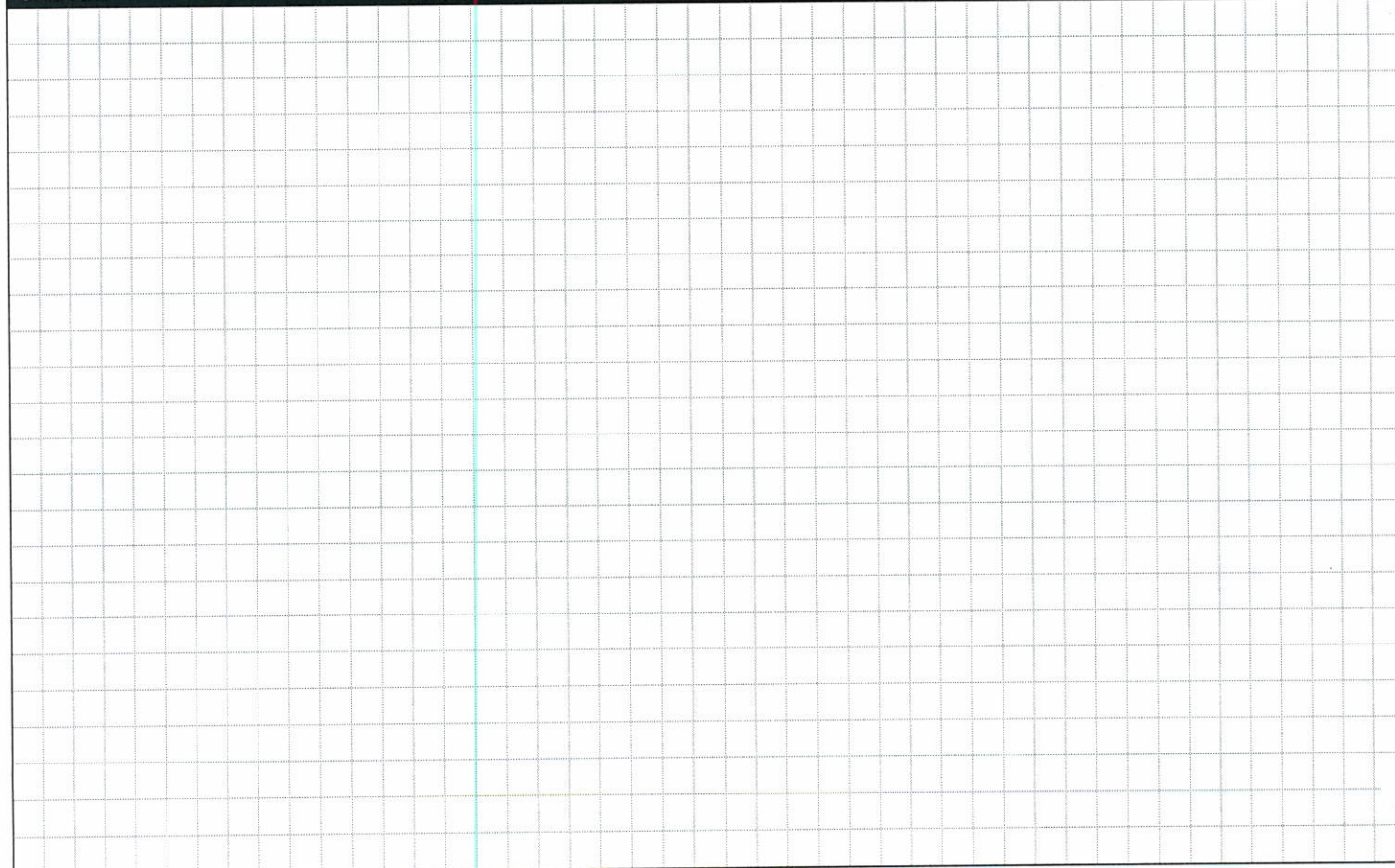
2018-12-09
Date

Verified by :

Signature

Date

SKETCH



20181210-DS-SR

Document number

Visit date: 2018-12-10 Time (Start/End): 6:00/ Project No.: 658309 Prepared by: M. JÉZÉQUEL
Project: WTD CONSTRUCTION Client: Agnico Eagle
Consultant: SNC-Lavalin Contractor: KCG

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☒ Storm ☒ Snow ☐ Glaze

Wind : ☐ None gusts ☐ Light ☐ Moderate ☒ Strong,

Temperature : -15 °C

Comments : BLIZZARD

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- QA LOOKED AT THE VERTICALITY DATA FROM KCG AND NOTICED THAT THE DEVIATION COMPUTED IN THE EXCEL SPREADSHEET IS THE DIFFERENCE OF VERTICALITY ALONG THE SAME AXIS AT TWO DIFFERENT DEPTHS RATHER THAN THE ABSOLUTE DEVIATION FROM THE VERTICAL. QA ASKED THE CONTRACTOR TO MODIFY THE EXCEL SPREADSHEET IN ORDER TO HAVE THE DEVIATION FROM THE VERTICAL (%) AS REQUIRED IN THE SPECIFICATIONS. MOREOVER, QA NOTED THAT THE READINGS WITH THE INCHMETER WERE DONE IN THE NORTH-SOUTH AXIS ONLY, THEREFORE THE DEVIATION IN THE EAST-WEST AXIS IS UNKNOWN. THE CONTRACTOR MENTIONED THAT THEY ARE GOING TO TAKE READINGS IN THE EAST-WEST AXIS TOMORROW.
- THERE WAS A BLIZZARD DURING THE AFTERNOON. NO ACTIVITY ON THE DIKE DURING THE SECOND HALF OF THE DAY.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

FOLLOW THE KCG BLIZZARD PROCEDURE.

Issued by :

Mark J. J. J.

Signature

2018-12-10

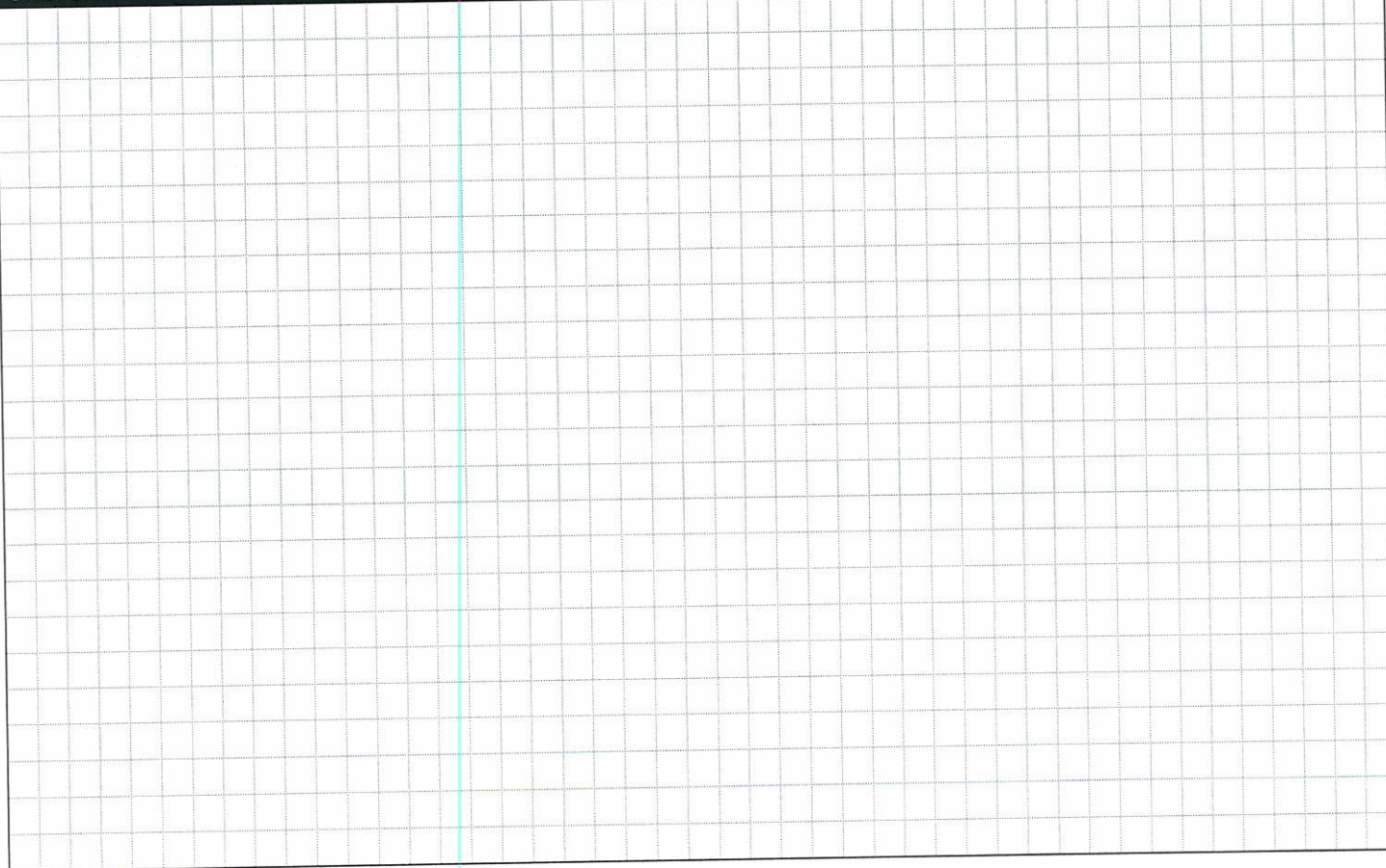
Date

Verified by :

Signature

Date

SKETCH



20181211-DS-SR

Document number

Visit date: 2018-12-11 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL
Project: WTD CONSTRUCTION Client: Agnico Eagle
Consultant: SNC-Lavalin Contractor: KCG

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong,

Temperature : -10 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ DURING THE DAILY MEETING, THE CONTRACTOR MENTIONED THAT IT WAS NOT POSSIBLE TO ASSESS IN WHICH DIRECTION THE CASINGS WERE TILTING USING THEIR INCLINOMETER. THE READINGS GIVE AN ANGLE FROM THE VERTICAL BUT IT IS AN ABSOLUTE VALUE; THEREFORE IT IS NOT POSSIBLE TO KNOW THE AZIMUTH.

→ TRIAL TESTS FOR GROUT SHOULD START TOMORROW.

→ SNC GROUT SPECIALIST WILL BE ON SITE TOMORROW.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

LOT OF SNOW ONE TO BUZZARD YESTERDAY: WATCH FOR TRIPS AND FALLS.

Issued by :

Handwritten Signature

Signature

2018-12-11

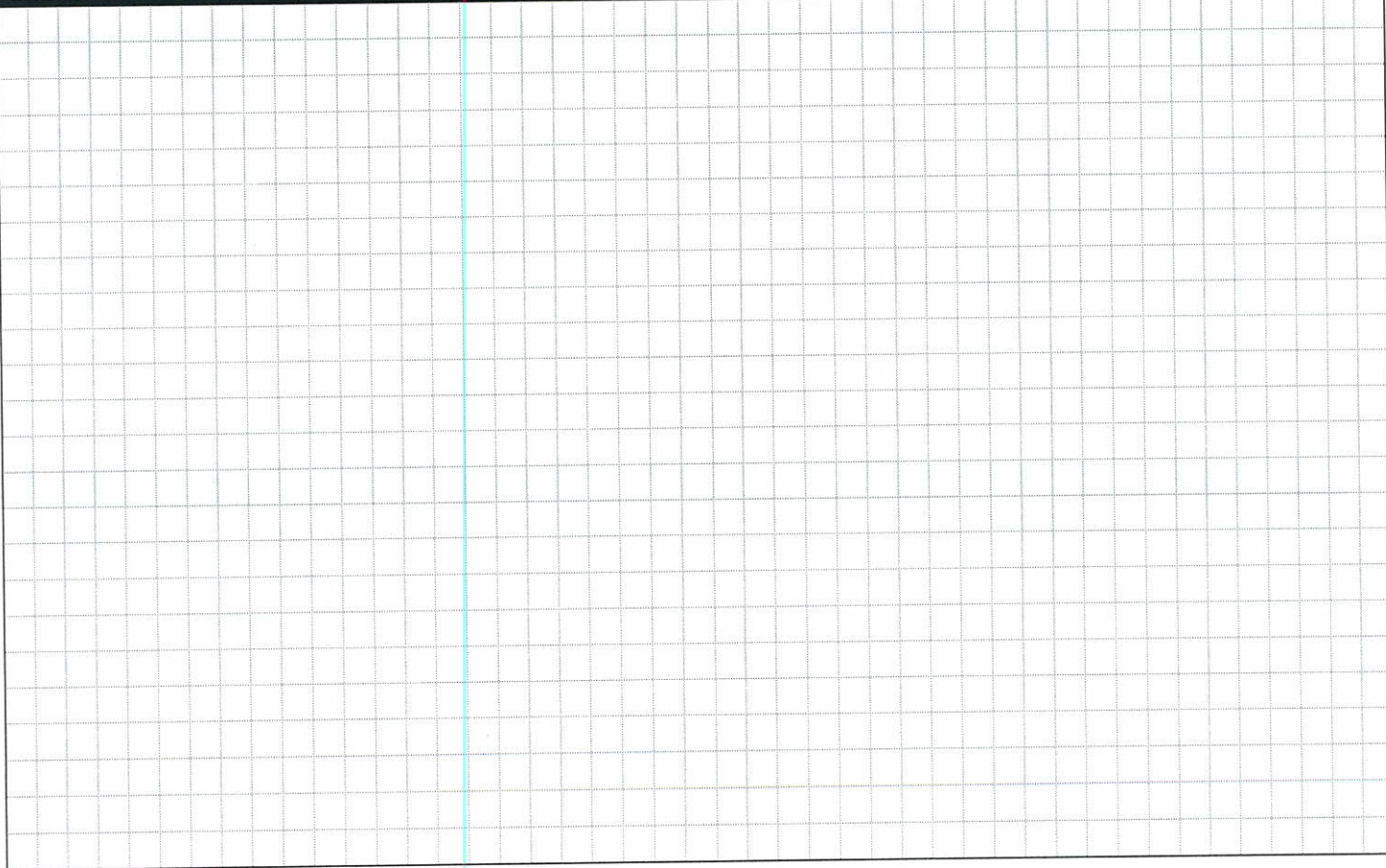
Date

Verified by :

Signature

Date

SKETCH



20181212-DS-SR

Document number

Visit date: 2018-12-12 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL
Project: WTD CONSTRUCTION Client: Agnico Eagle
Consultant: SNC-Lavalin Contractor: KCG

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☒ Snow ☐ Glaze

Wind : ☐ None gusts ☐ Light ☒ Moderate ☐ Strong,

Temperature : -12 °C

Comments :

Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No

Inspection report or other :

PHOTOS

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ TRIAL MIXES FOR GROUT INJECTION WERE MADE THIS MORNING BY KCG. QA INSPECTOR AND SNC-LAVALIN GROUT SPECIALIST OBSERVED QC REPRESENTATIVE CONDUCTING TESTS ON THE FRESH GROUT - REFER TO THE TABLE OF RESULTS IN THE SKETCH SECTION.

• 3 MIXES WERE TESTED:

	MIX A	MIX A + COLD WEATHER ADMIXTURE	MIX B
WATER:	56L	56L	56L
CEMENT TYPE III:	80 kg	80 kg	80 kg
GLENIUM 3030NS:	320 mL	320 mL	-
MASTERSSET FR20:	-	600 mL	-

• SUPERPLASTICIZER

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

Subject: QC NOTED THAT MIXES "A" AND "A + COLD WEATHER ADMIXTURE" WERE NOT HOMOGENEOUS: THIS IS PROBABLY DUE TO THE FACT THAT GLENIUM 3030NS ADMIXTURE WAS PREVIOUSLY STORED IN A COLD ENVIRONMENT. IT LOOKS LIKE THE SUPERPLASTICIZER SPLIT INTO TWO PHASES. THE PRODUCT WILL BE PUT IN A WARM ENVIRONMENT (~20°C) AND MIXED UNTIL IT BECOMES HOMOGENEOUS, AND TRIAL TESTS WILL RESUME TOMORROW. SEE ATTACHED PICTURES FOR GROUT MIXES.

→ DRILL STARTED TO DRILL INTO BEDROCK IN HOLE P-504 BUT ENCOUNTERED ELECTRICAL PROBLEM. DRILL OPERATIONS ARE DELAYED.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

WEAR A MASK IF STAYING CLOSE TO CEMENT BATCH AREA.

Issued by :

[Signature]

Signature

2018-12-12

Date

Verified by :

Signature

Signature

Date

SKETCH

MIX	BLEEDING (2 HRS)	WATER TEMP.	GROUT TEMP.	SG	VISCOSITY
A	3.8%	13.9°C	18.6°C	1.67	34
A + COLD WEATHER ADMIXTURE	1.1%	-	20.1°C	1.63	38
B	4.5%	12.6°C	16.7°C	1.64	36

SG: SPECIFIC GRAVITY (g/cm^3)

VISCOSITY: USING MARSH FUNNEL (SECONDS)



Figure 1: Mix A after ~ 2 hours



Figure 2: Mix A + cold weather admixture after ~ 2 hours

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

VERY WINDY TODAY: WEAR PROPER PPE AND DRIVE CAREFULLY.

Issued by :


Signature

2018-12-13

Date

Verified by :

Signature

Date

SKETCH

TEST RESULTS FROM TRIAL MIXES :

MIX	SG	VISCOSITY	GROUT TEMP.	COHESION	BLEEDING	WATER TEMP.
C	1.68	77	19.9°C	12/0.71	0.6	7.6°C
D	1.70	75-72*	22.3°C	13/0.76	0.6	-

AFTER 3 HOURS

SG: SPECIFIC GRAVITY (g/cm^3)

VISCOSITY: USING MARSH FUNNEL (SECONDS)

COHESION: USING LOMBARDI PLATE METHOD (PA) / RELATIVE COHESION (mm)

* VISCOSITY TEST WAS DONE TWICE ON MIX "D" BECAUSE IT WAS EXPECTED TO BE MORE VISCOUS THAN MIX "C".

20181214-DS-SR

Document number

Visit date: 2018-12-14 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL

Project: WTO CONSTRUCTION Client: Agnico Eagle

Consultant: SNC-Lavalin Contractor: KCG

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☒ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -8 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- DURING THE DAILY MEETING, THE CONTRACTOR MENTIONED THAT THEY ENCOUNTERED SOFT ROCK WHILE DRILLING THE HOLES FOR GROUT INJECTION, AND THAT THE WALL OF SOME HOLES KEPT COLLAPSING. QA AND QC WENT ON THE DIKE TO MEASURE THE DEPTH OF HOLES FOR GROUT INJECTION DRILLED BY THE TAMROCK DRILL AND NOTICED THAT HOLES #P-456 AND P-468 DID NOT REACH THE REQUIRED 10-m DEPTH. THE CONTRACTOR SUPERVISOR FROM THE GROUTING CREW MENTIONED THAT THEY TRIED TO DRILL THOSE HOLES FOR MORE THAN AN HOUR AND COULD NOT MANAGE TO CLEAN THEM. NO MORE DRILLING WILL OCCUR IN THESE HOLES BEFORE GROUT INJECTION.
- THE CRUSHER STARTED PRODUCTION AT THE END OF THE DAY YESTERDAY AND CONTINUED DURING NIGHT SHIFT. QA WENT WITH QC FOR SAMPLING OF THE FINE FILTER MATERIAL. QA NOTICED NOTICEABLE AMOUNT OF SNOW ON A PART OF THE STOCKPILE. QC WARNED CRUSHER OPERATOR TO REMOVE THE SNOW PRIOR TO STOCKPILE

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

THE FINE FILTER MATERIAL.

- THE CONTRACTOR WILL PROVIDE THE VICAT APPARATUS FOR NEXT MONDAY, BUT THEY ONLY HAVE AN OLDER MODEL WHICH IS CONFORM TO THE OUT-OF-DATE ASTM C191 STANDARDS. THE GROUT ENGINEER AGREED TO USE THE OLD MODEL BECAUSE THE GROUT INJECTION SHOULD START IMMINENTLY.
- NO PRODUCTION OF GROUT TODAY, NO INJECTION. START OF WORK IS POSTPONED UNTIL TOMORROW. DRILLING ACTIVITIES CONTINUED ON THE DIKE.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

SNOW ACCUMULATION: WATCH OUR STEP AS WE DO NOT KNOW WHAT CAN BE UNDERNEATH.

Issued by :

[Signature]

Signature

2018-12-14

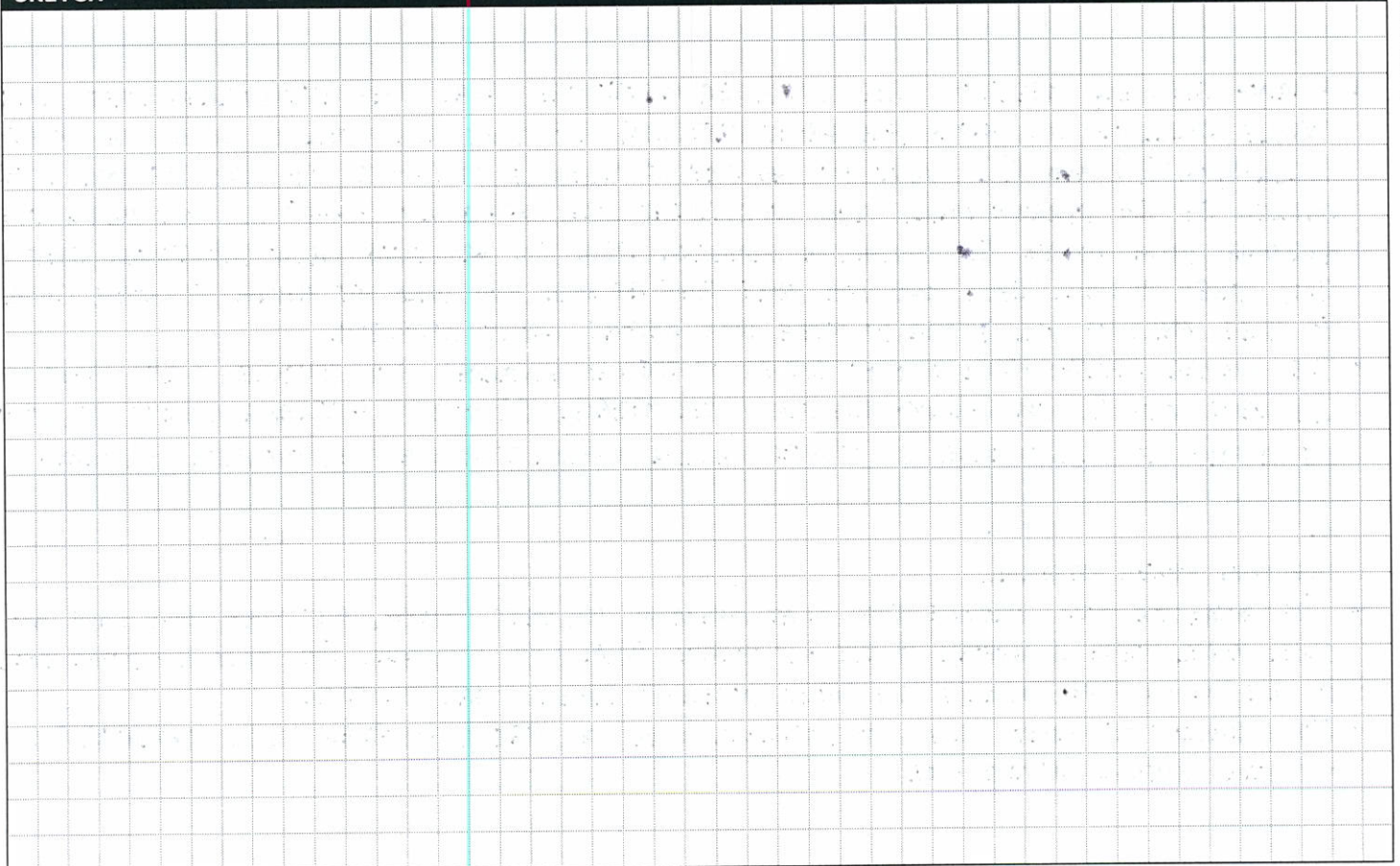
Date

Verified by :

Signature

Date

SKETCH





SNC • LAVALIN

SITE REPORT
(Detailed)

201815-05-SR

Document number

Visit date 2018-12-15	Time (Start/End) 6:00/18:00	Project No. 658309	Prepared by M. JÉZÉQUEL
Project WTO CONSTRUCTION		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG	
Weather :	☐ Sunny	☐ Cloudy	☐ Rain
	☐ Storm	☒ Snow	☐ Glaze
Wind :	☐ None gusts	☐ Light	☐ Moderate
	☒ Strong,	Temperature : -17 °C	
Comments :			
Appendix :	☐ Yes	☒ No	Pictures
	☐ Yes	☒ No	Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- THE SAMPLE OF FINE FILTER TAKEN YESTERDAY FROM THE STOCKPILE IS TOO COARSE ON mm SIEVE. QA RAISED THAT POINT IN THE DAILY MEETING AND THE CONTRACTOR SAID THAT THEY WILL MAKE CORRECTIONS ON THE CRUSHER TO STAY WITHIN THE GRADATION SPECIFICATIONS.
- GROUT INJECTION STARTED THIS MORNING. THE FIRST GROUTED HOLE (P-504) WAS COMPLETED IN ~1 HOUR. REFUSAL CRITERIA WERE MET FOR THE 3 STAGES. *MIX A WAS USED FOR THE WHOLE DAY*
 - FOR THE SECOND HOLE (P-492), A REFUSAL WAS ENCOUNTERED AT 0.85 m ABOVE THE TARGET VALUE WHILE LOWERING THE PACKER IN THE HOLE, SO THE FIRST STAGE WAS ~4.85 m BY THEN. AFTER THE INJECTION STARTED, THE CONTRACTOR NOTICED THAT GROUT WAS COMING UPWARD AROUND THE PACKER. THEY MENTIONED THAT THIS WAS DUE TO FRACTURED BEDROCK AROUND THE PACKER AND NOT DUE TO THE PACKER NOT INFLATED PROPERLY. THE CONTRACTOR DECIDED TO RAISE THE PACKER BY 1.0 m AND RESUMED

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Guidelines |
|----|--|------------|
| | INJECTION. REFUSAL CRITERIA WERE FINALLY MET FOR THIS ~5.85 m STAGE. | |
| | • DURING THE 2 ND STAGE OF HOLE P-480, THE SAME PHENOMENON OCCURED (NO PRESSURE BUILD UP, HIGH FLOW OF GROUT COMING UPWARD). THEY RAISED THE PACKER BY 1.0 m (5.0 m STAGE) AND REFUSAL WAS ACHIEVED. THE GROUT TAKE WAS MORE SIGNIFICANT THOUGH (>200 LITERS). | |
| | • IN REPORT 201814-05-SR, IT WAS MENTIONED THAT HOLE P-468 DID NOT REACH THE REQUIRED 10-m DEPTH AFTER MEASURING THE HOLE, MOST LIKELY BECAUSE THE BEDROCK WAS CAVING IN THE GROUT HOLE (5 m INTO BEDROCK AS MEASURED BY QC). THE CONTRACTOR INSTALLED THE PACKER FOR THE FIRST STAGE AT ~4 m INTO BEDROCK (~6 m STAGE) AND BEGAN THE INJECTION. ONCE AGAIN, NO PRESSURE BUILD UP AND GROUT WAS COMING UPWARD, SO THE CONTRACTOR RAISED THE PACKER BY ANOTHER 1.5 m. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

VERY SLIPPERY AROUND THE INJECTION UNIT ON THE DIKE, WEAR CLEATS.

Issued by :

Mark J. J.
Signature

2018-12-15
Date

Verified by :

Signature

Date

SKETCH

... SO THE FIRST STAGE WAS ~ 7.5 m LONG. THEY COMPLETED THE HOLE USING ONLY 1 ANOTHER STAGE, SO THE HOLE WAS COMPLETED IN 2 STAGES.

→ QA TOLD THE CONTRACTOR THAT ACCORDING TO THE TECHNICAL SPECIFICATIONS (5.5.1.7), THE HOLES SHOULD BE WASHED WITH CLEAN WATER IMMEDIATELY BEFORE GROUTING. HE SAID THAT THE HOLES ARE WASHED RIGHT AFTER DRILLING AND THAT HE IS NOT EQUIPPED TO WASH THE HOLES IN THE INJECTION UNIT, SO HE WILL NOT WASH THEM JUST BEFORE THE INJECTION.

- QA WENT WITH SNC GROUT SPECIALIST ON THE DIKE TO OBSERVE THE DRILLING PROCESS OF A GROUT HOLE WITH TAMROCK. IT WAS NOTICED THAT THE HOLE WAS WASHED WITH AIR/WATER AT THE END OF THE PROCESS. THE WATER COMING OUT WAS A BIT MURKY BUT IT IS MOST LIKELY BECAUSE OF LOW QUALITY BEDROCK AND MATERIAL BEING WASHED OUT.

→ QA LOOKED AT THE CUTTINGS OF HOLE P-396 AND ~ 60-70 mm PIECES OF BEDROCK WERE FOUND AND THEY WERE FRACTURED. THIS INDICATES THAT THE BEDROCK IS VERY FRACTURED/LOW QUALITY. THE DRILLER SAID THAT THIS HAPPENS OFTEN, AND HE LATER SAID THAT MATERIAL LOOKING LIKE FINE FILTER WAS FOUND IN THE CUTTINGS IN OTHER HOLES FURTHER WEST. MOREOVER, HE SAID THAT CAVING WAS HAPPENING FROM A DEPTH OF ~ 13 m FROM THE GROUND FOR THESE HOLES. THIS LEAD TO FURTHER DRILLING AND TIME-CONSUMING DRILLING PROCESS.

- DURING THE DAILY MEETING, QA REQUESTED THE CONTRACTOR TO SEND DRILL LOGS FOR GROUT HOLES ON A DAILY BASIS. BY THE END OF THE SHIFT, NO DRILL LOGS HAD BEEN TRANSFERRED TO QA.
- AROUND 15:30, A PIECE OF EQUIPMENT BROKE ON THE DRILL, AND THE DRILLING WORK WAS SUSPENDED.

 SNC • LAVALIN	Notes de calcul/Design Brief		No de projet Project No.	Subdivision Phase	Élément Element
	ÉLÉMENT/ELEMENT		6 5 8 3 0 9		
Vérifié par Checked by	20181215 - DS-SR		Date 2018-12-15	Page 3	de/of 3
Date			Préparé par Prepared by M. Jézéquel		
MODIFICATION Date		Vérifié par Checked by	Préparé par Prepared by		

→ QA NOTICED THAT THE TEMPERATURE INSIDE THE COOLER WHERE CUBIC GROUT SAMPLES WERE CURING WAS AROUND 5°C AT 16:40. MOREOVER, THERE WERE VIBRATIONS ON THE INJECTION UNIT FLOOR WHERE THE SAMPLES WERE CURING, AND THE COOLER HAD TO BE MOVED SEVERAL TIME BECAUSE IT WAS IN THE WORKERS' WAY. THE SAMPLE ID WAS GR-WTD-006.

→ QC CONDUCTED TWO MUD BALANCE TESTS FOR DENSITY DURING THE SHIFT:

- FIRST TEST: 1.660 g/cm³ IN THE MORNING
- SECOND TEST: 1.635 g/cm³ IN THE AFTERNOON

A DIFFERENCE OF 0.025 WAS OBSERVED, EVEN THOUGH THIS WAS FOR THE SAME MIX RATIO (MIX A). HOWEVER, VISCOSITY USING MARSH FUNNEL WAS 35 SECONDS FOR BOTH MIXES. THE BLEEDING VALUE WAS WITHIN THE SPECIFICATIONS.

20181216-DS-SR

Document number

Visit date: 2018-12-16 Time (Start/End): 6:00/18:00 Project No.: 658309 Prepared by: M. JÉZÉQUEL

Project: WTD CONSTRUCTION Client: Agnico Eagle

Consultant: SNC-Lavalin Contractor: KCG

Weather: ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind: ☐ None gusts ☐ Light ☐ Moderate ☒ Strong, Temperature: -24 °C

Comments:

Appendix: ☐ Yes ☒ No Pictures: ☐ Yes ☒ No Inspection report or other:

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ GROUT INJECTION STARTED WITH HOLE # P-456, WHERE THE DEPTH IN BEDROCK MEASURED BY QC WAS 8.3m INSTEAD OF ~10m PROBABLY DUE TO BEDROCK CAVING IN THE HOLE. THE FIRST 4-m STAGE STARTED WITH MIX A, BUT THERE WAS NO PRESSURE BUILDING UP. THEN THE CONTRACTOR DECIDED TO INCREASE THE VISCOSITY OF THE MIX AND WENT FROM MIX A TO MIX B, C AND THEN MIX D (~200 L OF EACH MIX WAS INJECTED BEFORE INJECTING THE NEXT ONE). AFTER ~2000 LITRES INJECTED IN THE FIRST STAGE, THE PRESSURE NEVER WENT ABOVE ~0.6 BAR (NO BUILD UP) AND THE MAXIMUM AMOUNT PER STAGE WAS REACHED (5.5.9 OF TECHNICAL SPECIFICATIONS). THE INJECTION STOPPED FOR THIS STAGE AND THE REFUSAL CRITERIA WERE NOT MET.

• THE SAME THING HAPPENED FOR STAGE 2 AND 3 FROM HOLE #P-456: NO PRESSURE BUILD UP, MAXIMUM VOLUME OF GROUT WAS INJECTED - FROM MIX A TO MIX D - AND REFUSAL CRITERIA WERE NOT MET.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

• THE LAST STAGE OF THE DAY WAS STAGE 1 OF HOLE #P-444. ONCE AGAIN, >2000 LITRES WERE INJECTED AND NO PRESSURE BUILD UP. REFUSAL CRITERIA WERE NOT MET. ALL FOUR STAGES OF TODAY HAD HIGH GROUT TAKE.

→ QA NOTICED THAT "CELBEX 653" ADDITIVE FROM "MULTIURETHANES" WAS ADDED AT THE END OF THE FIRST AND THIRD STAGES OF HOLE #P-456 AND AT THE END OF STAGE 1 OF HOLE #P-444. IN THE LATER, THE CONTRACTOR SAID THAT HE ADDED "SET ACCELERATOR" ADDITIVE IN ADDITION OF THE CELBEX IN MIX D, BUT JUST IN THE LAST BATCH OF STAGE 1.

↳ CONTINUED IN THE SKETCH SECTION

* WHEN THE CONTRACTOR ADDS CELBEX IN MIX D, THEY NAME IT "MIX D+" *

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

VERY COLD AND WINDY ON THE DIKE: WEAR PROPER CLOTHES AND DO NOT STAY OUTSIDE FOR TOO LONG.

Issued by :

Maha Ajmal
Signature

2018-12-16

Date

Verified by :

Signature

Date

SKETCH

→ QC REPRESENTATIVE TESTED DIFFERENT MIXES TODAY :

MIX	SPECIFIC GRAVITY (g/cm ³)	VISCOSITY FROM MARSH FUNNEL (s)	GROUT TEMP.	BLEEDING AFTER 2 HOURS (%)
B	1.61 - 1.68	39-50	10.2 - 12.3 °C	2.2
C	1.66	133	9.5 °C	0.6
D	1.65	81 - >180	10.2 - 11.3 °C	0.6

* SOME DISCREPANCY WAS NOTED FOR S.G. OF MIX B AND VISCOSITY OF MIX D.

→ QA WENT ON THE DIKE TO MEASURE DEPTH OF GROUT HOLES. HOLES #P-396, P-384, P-372, P-360 AND P-348 DID NOT REACH THE 10-m DEPTH REQUIRED IN BEDROCK. MORE SPECIFICALLY, A REFUSAL IN 0.7 m IN BEDROCK WAS ENCOUNTERED IN HOLE #P-384, WHICH INDICATES THAT BEDROCK MOST LIKELY CAVED IN THE HOLE JUST BELOW THE CASING.

→ QC TOOK A SAMPLE OF FINE FILTER FROM THE STOCKPILE. THE RESULTS WILL ALLOW ASSESSING IF THE ADJUSTMENTS BROUGHT ON THE CRUSHER ARE GOOD.



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SITE REPORT
(Detailed)

2018/2/17 - DS-SR

Document number

2018/2/17
 Visit date

6:00/18:00
 Time (Start/End)

658309
 Project No.

M. JÉZÉQUEL
 Prepared by

WTD CONSTRUCTION
 Project

Agnico Eagle
 Client

SNC-Lavalin
 Consultant

KCG
 Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong,

Temperature : -28 °C

Comments :

Appendix : ☒ Yes ☐ No Pictures ☒ Yes ☐ No

Inspection report or other :

PHOTO

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- THE GROUT INJECTION STARTED WITH STAGE 2 OF HOLE #P-444. (STAGE ONE WAS DONE AT THE END OF THE SHIFT YESTERDAY AND THERE WAS HIGH GROUT TAKE WITH NO REFUSAL). HOWEVER, KCG WAS SUCCESSFUL COMPLETING STAGES 2 AND 3 OF P-444 THIS MORNING AND REACHED REFUSAL USING MIX A.
- THEN THE CONTRACTOR MOVED THE INJECTION UNIT AND STARTED THE INJECTION IN HOLE P-432. SINCE THERE WAS NO PRESSURE BUILD UP, THE CONTRACTOR INJECTED ~420 LITRES OF MIX A AND WENT DIRECTLY TO MIX D. THE CONTRACTOR USED A FLOW OF ~12 L/min COMPARED TO ~20 L/min YESTERDAY. THEY NEVER ACHIEVED BUILDING UP PRESSURE, EVEN USING MIX "D+" (MIX D + 125 ml OF CELBEX PER 40 kg OF CEMENT). THEY HAVE BEEN USING MIX D+ FOR MORE THAN 1000 LITRES, AND THEY ADDED MASTERSSET FP20 ADMIXTURE IN THE LAST BATCH TO HELP REDUCE SET TIME.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

NO

COMMENT

MEMO

- AFTER LUNCH, THE CONTRACTOR STARTED THE INJECTION IN HOLE #P-430 (1st STAGE). THEY STARTED WITH MIX A, COULD NOT BUILD UP PRESSURE, AND THEN USED A NEW MIX WHICH THEY CALLED MIX E. THE RECIPE IS 100 LITRES OF WATER, 240 kg OF CEMENT AND RHEOMAC ADMIXTURE USING THE SAME RATIO THAN MIX D ACCORDING TO THE CONTRACTOR. MOREOVER, THEY ADDED CELBEX ADDITIVE IN THE RETENTION TANK. THE PRESSURE STARTED TO RISE BUT THEY COULD NOT BUILD IT UP IN ORDER TO GET REFUSAL. THEY ADDED MASTERSSET FP20 IN THE LAST ~500 LITRES.
- THE CONTRACTOR THEN STARTED THE INJECTION OF STAGE 2 IN HOLE #P-432 ~ 4 HOURS AFTER THE INJECTION OF STAGE 1 USING MIX A. THEY WERE ABLE TO BUILD UP THE REQUIRED PRESSURE BUT ~3 MINUTES BEFORE REACHING REFUSAL CRITERIA, THE PRESSURE DROPPED AND THE FLOW INCREASED SUDDENLY... (CONTINUED ON SKETCH SECTION)

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Issued by :

Mark J. J. J.
Signature

2018-12-17

Date

Verified by :

Signature

Date

SKETCH

... ACCORDING TO THE CONTRACTOR, THE PRESSURE FROM THE SECOND STAGE CREATED AN OPENING IN THE JELLIFIED GROUT MIX FROM STAGE 1, WHICH COULD NOT WITHSTAND THE GROUT PRESSURE FROM STAGE 2. THEY SAID THAT THEY DID NOT WAIT LONG ENOUGH BETWEEN THE TWO STAGES, AND WILL WAIT LONGER NEXT TIME IF THERE IS A HIGH GROUT TAKE IN THE FIRST STAGE BEFORE STARTING INJECTION IN THE SECOND STAGE. THE CONTRACTOR SUSPENDED THE GROUT INJECTION UNTIL TOMORROW.

→ THERE WAS NO QC ON SITE TODAY. QA CARRIED OUT THE FOLLOWING TESTS ON GROUT MIX:

MIX	SPECIFIC GRAVITY (g/cm^3)	VISCOSITY, MARSH FUNNEL (SECONDS)	GROUT TEMPERATURE ($^{\circ}C$)
A	1.63	81*	12.2
D	1.67 - 1.69	74 - >180	7.8 - 17.6

* VISCOSITY OF MIX A WAS HIGH; THAT MAY BE DUE TO IMPROPER MIXING OF THE SUPERPLASTICIZER (CHUNKS OF GLENIUM WERE FOUND ON THE SIEVE OF MARSH FUNNEL AS SHOWN IN THE ATTACHED PHOTO).

→ QA REQUESTED FROM KCG TO HAVE DETAILED REPORTS WITH COMMENTS FROM DRILLING AND GROUTING ACTIVITIES.



Figure 1: Chunks of Glenium 3030 NS observed on Marsh Funnel sieve (Mix A)



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SITE REPORT
(Detailed)

20181218-DS-SR

Document number

Visit date 2018-12-18	Time (Start/End) 6:00/18:00	Project No. 658309	Prepared by M. JÉZÉQUEL
Project WTD CONSTRUCTION		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG	
Weather :	☒ Sunny	☐ Cloudy	☐ Rain
	☐ Storm	☐ Snow	☐ Glaze
Wind :	☐ None gusts	☒ Light	☐ Moderate
	☐ Strong,	Temperature : -17 °C	
Comments :			
Appendix :	☐ Yes	☒ No	Pictures
	☐ Yes	☒ No	Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- DURING THE DAILY MEETING, QA MENTIONED THAT THERE WAS DISCREPANCY BETWEEN THE DATA PROVIDED BY KCG ON THE DRILLING REPORTS (BEDROCK DRILLING (m) COLUMN) AND THE DATA RECORDED BY QC. KCG FOUND OUT LATER THAT THERE WERE MISTAKES IN THEIR DATA AND ACKNOWLEDGED THAT THEY SENT QA WRONG INFORMATION. MOREOVER, THERE WAS NO INFORMATION ON HOLE #P-396, WHICH WAS ABOUT TO BE INJECTED THIS MORNING. ONCE AGAIN, QA REQUESTED FOR QUALITY INFORMATION FROM THE CONTRACTOR IN A TIMELY MANNER (ON A DAILY BASIS).
- 3 STAGES WERE INJECTED TODAY: 1ST STAGE OF HOLE #P-408, 1ST STAGE OF P-396, AND 1ST STAGE OF P-384. MAXIMUM VOLUME (~2000 LITRES) WERE INJECTED IN EACH STAGE, WITHOUT MEETING THE REFUSAL CRITERIA. FOR HOLE #P-384, THE CONTRACTOR DID NOT MANAGE TO INSTALL THE PACKER DOWN IN THE GROUT HOLE BECAUSE OF BEDROCK CAVING JUST BELOW THE CASING. THEY PROCEEDED WITH SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

800000

800000

GROUT INJECTION WITH THE PACKER INSTALLED AT THE BOTTOM OF THE CASING.

- QC CARRIED OUT TESTS ON MIX D: DENSITY VARIED FROM 1.63 TO 1.69 g/cm³ AND MARSH FUNNEL READINGS VARIED FROM 64 TO >180 SECONDS, WHICH SHOWS INCONSISTENCIES ON THE GROUT MIX RATIOS.
- QA NOTICED THAT THE CONTRACTOR DID NOT INSTALL ANY PRESSURE GAUGE AT THE COLLAR AS PER S.4.3.9 OF TECHNICAL SPECIFICATIONS. THE CONTRACTOR REPLIED THAT SINCE THEY ARE USING A SMALL PIPE AND THE COLLAR IS AT THE SAME ELEVATION THAN THE DATA ACQUISITION SYSTEM, THE PRESSURE WOULD BE THE SAME AT BOTH LOCATIONS. QA ADVISED THAT PRESSURE METER SHOULD BE USED AT THE COLLAR AS PER SPECIFICATIONS.

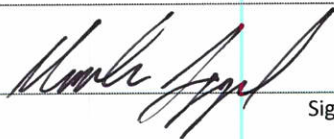
SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

SLIPPERY CONDITIONS AROUND THE INJECTION UNIT: NEAR CEMENT.

Issued by :



Signature

2018-12-18

Date

Verified by :

Signature

Date

SKETCH

- VICAT APPARATUS WAS RECEIVED THIS MORNING. QA REQUESTED FROM QC TO CONDUCT VICAT TESTS FOR SET TIME AS SOON AS POSSIBLE.
- THE MOLD WAS CLEANED IN THE HUMID ROOM AND UCS TESTS ON CB SAMPLES CAN NOW BE CARRIED OUT AGAIN.
- DRILLING OF PRIMARY GROUT HOLES WAS COMPLETED TODAY. QA WENT WITH QC ON THE DIKE FOR DEPTH MEASUREMENTS. QA WILL SIT TOMORROW MORNING WITH THE CONTRACTOR TO IDENTIFY WHICH HOLES MAY HAVE CAVED AND IF THE REQUIRED 10 m INTO BEDROCK WAS ACHIEVED.
- QC TOLD THE CONTRACTOR THIS MORNING THAT THE GRADATION OF THE FINE FILTER MATERIAL AT THE CRUSHER WAS STILL A BIT COARSE ON THE 19 mm SIEVE. QC SHOULD TAKE ANOTHER SAMPLE OF FINE FILTER AFTER ADJUSTMENTS ARE MADE ON THE CRUSHER.

20181219-DS-SR

Document number

2018-12-19

0600-18:00

658309

M. Umar

Visit date

Time (Start/End)

Project No.

Prepared by

WTB Construction

Agnico Eagle

Project

Client

SNC-Lavalin

KCG

Consultant

Contractor

Weather :

☒ Sunny

☐ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None gusts

☒ Light

☐ Moderate

☐ Strong,

Temperature : -30 °C

Comments :

Appendix :

☐ Yes

☒ No

Pictures

☐ Yes

☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- In the daily meeting, QA asked the contractor & AEM to arrange for the pressure gauge on the grout hole collar. The pressure gauge the contractor currently has does not function properly and they do not have a spare gauge on site.
- QA also discussed the grouting procedures with the contractor in the daily meeting that the packer is to be deflated when the pressure in the hole reduces to zero naturally at the end of the stage. Also corrected the contractor's calculation for effective pressure calculation. The contractor was not subtracting the water head pressure.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| → | Hole 468 was previously injected on 2018-12-15 and was redrilled to be grouted again because the hole caving before the 1st grouting. Refusal was achieved on all three stages. | |
| → | Stage I (6m - 10m in bedrock) was done for holes 432, 420, 408 and 396 more than 24 hours ago. The next stages were continued today. The last stage for hole # 396 could not achieve refusal. The pressure was building up but flow rate was more than 8 litres/min/m of stage. It is possible that the casing was not in the bedrock and the grout was | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Wet and slippery conditions on the dikes. Walk very carefully.

Issued by :



Signature

2018-12-19

Date

Verified by :

Signature

Date

SKETCH

seeping into fine filter material. The injection was stopped after 1000 litres of grout.

* QA discussed with the contractor's engineer that the grouting record form provided by SNC-Lavalin is to be used and filled on site. The test results done by QC will be updated on the same form on the site. He agrees and the form shall be used from tomorrow.

* QA also advised the contractor's engineer that the actual depth from the ground should be recorded on the form for each stage instead of target values for each stage. The depth will be measured for each hole before the start of grouting process.

* The test results from today are as follows.

	Density	Marsh funnel	Temperature
Mix A	1.66 g/cm ³	35-36 sec	17.1 °C
Mix B	1.66 g/cm ³	30 sec	11.6 °C
Mix D	1.70 - 1.71 g/cm ³	141 - 180 sec	11.2 - 15.5 °C.

20181220 -DS-SR

Document number

2018-12-20 6AM - 6PM 658309 MUHAMMAD UMAR
Visit date Time (Start/End) Project No. Prepared by
WTD CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG
Consultant Contractor

Weather : ☒ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -32 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- The pressure gauge was not installed at the grout hole collar today.
- The refusal was achieved for all the stages done today.
- During the grouting operation for Stage 1 of hole 372, pressure suddenly dropped with increase of flow rate at 10:15 AM. It is possible that the rock fractured under pressure.
- QA instructed the operator & contractor's engineer to increase the grout flow rate gradually. It was done for the last two stages of the day. QA asked the same thing in the daily meeting but the procedure was not followed for the first

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| | many stages done. | |
| → | QA instructed the operator to wait for the pressure in the hole to reduce to zero naturally before deflating the packer. The procedure was followed in all stages except Stage II hole 360. | |
| → | QA asked the contractor to do water pressure test in secondary hole # 510 before starting to grout the Secondary holes. The contractor plans to start grouting secondary holes tomorrow. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

slippery conditions on the dike. wear cleats.

Issued by :

M. Umar

Signature

2018-12-20

Date

Verified by :

Signature

Date

SKETCH

- During stage II of hole # 360, grout was coming on top of the packer from the rock fractures. Packer was lifted 1m and stage restarted. Then packer pressure pipe started leaking at 4:03 PM. The situation was fixed and the stage restarted again.
- GA recorded grouting information for some stages. Details attached.
- No vicat test was done today.



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SITE REPORT
(Detailed)

20181221-DS-SR

Document number

2018-12-21

6 AM → 6 PM

658309

MUHAMMAD UMAR

Visit date

Time (Start/End)

Project No.

Prepared by

WTD CONSTRUCTION

Agnico Eagle

Project

Client

SNC-Lavalin

KCG

Consultant

Contractor

Weather :

☒ Sunny

☐ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None
gusts

☒ Light

☐ Moderate

☐ Strong,

Temperature : _____ °C

Comments :

Appendix :

☐ Yes

☐ No

Pictures

☐ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Hole 510, 498 & 486 were not fully open upto 10 m. Possible rock cavings. All these holes started with stage II (2-6 m in bedrock). There was grout bypass on top of packer in hole 510 and 486, the packer was raised to the depth of stage I and grouted in single stage. All these hole will have to be redrilled and grouted again.

→ QA measured the depth of the hole 486 and informed contractor about 4m cavings. QA asked contractor to clean this hole before moving the grouting unit. Hole was not cleaned and the contractor started injection from stage II.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

→ QA instructed contractor to monitor the bedrock drilling carefully and in case of highly fractured rock or loss of water is reported, down-stage grouting technique should be adopted as per site conditions and specifications.

→ A marsh funnel viscosity for Mix C tested today was 170 seconds which is very high for Mix C, also, mud-balance density for Mix D was recorded today as 1.62. Batch unit operator re-performed the test himself and obtained same results for Mix D density.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
S-510	0-6 m in bedrock grouted	Hole will be redrilled
S-498	0-6 m in bedrock grouted	will be redrilled
S-486	0-6 m grouted	will be redrilled.
S-474	WPT (Stage 1)	

SAFE AND SAFETY REMARKS

Issued by :

M. Umar
Signature

2018-12-21

Date

Verified by :

Signature

Date

SKETCH

- QA instructed the operator to carefully batch the mixes to obtain the required properties.
- Also advised GC to calibrate his equipment regularly.
- Water pressure test could not be performed in hole 510 as the hole was not open to its full depth. WPT Stage 1 (6-10 m) in rock was conducted in hole 474. Stage 2 & 3 could not be completed because of shift end. Test will restart tomorrow.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181222-DS-SR

Document number

2018-12-22 | 6AM-6PM | 658309 | MUHAMMAD UMAR
Visit date | Time (Start/End) | Project No. | Prepared by

WTD Construction | Agnico Eagle
Project | Client

SNC-Lavalin | KCG
Consultant | Contractor

Weather : ☒ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -33 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- No pressure gauge is available on-site to be installed at borehole collar to estimate the pressure loss in the grout pipes.
- WPT was completed in Hole # S-474.
- Stage I for the hole # S-462 was done today. The remaining two stages will be done tomorrow. At the end of the stage, contractor did not wait enough for the pressure in the hole to reduce to zero naturally.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to
	They waited approximately 7 minutes and then the packer was deflated when the pressure in the hole was still around 2 bar.	
	Contractor continued with the drilling of more secondary holes. Contractor told QA that there was no water loss during drilling and holes seems to be stable.	

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Watch for the grout hoses in the injection unit while walking to avoid any tripping.

Issued by :

M. Umar

Signature

2018-12-22

Date

Verified by :

Signature

Date

SKETCH

- 3/4" crush material was sampled for fine filter.
- UCS tests were done of 28 days cement-bentonite samples from the secant pile wall.



SNC • LAVALIN

SITE REPORT
(Detailed)

2018/223-DS-SR

Document number

2018-12-23 6AM-6PM 658309 MUHAMMAD UMAR
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -32 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- No pressure gauge was available on site today to be installed at the grout hole collar to estimate the pressure losses in the pipes.
- QA informed the contractor of the correct procedure for gauge pressure calculation. The contractor will make correction for future work.
- Water pressure Test performed in hole # S-474

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No Subject Given to
is inaccurate and will be corrected in future.

- Stage-II length in hole # S-462 was 1.7m short due to grout backflow with pressure in the hole. Contractor was informed of the correct procedure to wait for the pressure to go to zero which was not followed.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Slippery condition of the dike due to water & grout frozen. Wear cleats.

Issued by :

M. unruh

Signature

2018-12-23

Date

Verified by :

Signature

Date

SKETCH

- Contractor told QA that the hole # S-402 started to cave at 4m depth in bedrock. Drilling was stopped and downstage grouting technique will be used. The same will be done for any other holes like this.
- A new strategy has been proposed by the contractor to move the drilling rig and grouting unit next to each other so that cleaning of the caved holes can be done before grouting.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181224-DS-SR

Document number

2018-12-24

6AM - 6PM

658309

MUHAMMAD UMAR

Visit date

Time (Start/End)

Project No.

Prepared by

WTD CONSTRUCTION

Agnico Eagle

Project

Client

SNC-Lavalin

KCG

Consultant

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None

gusts

☒ Light

☐ Moderate

☐ Strong,

Temperature : -31 °C

Comments :

Appendix :

☐ Yes

☒ No

Pictures

☐ Yes

☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- No pressure gauge is available on-site since the start of grouting work to estimate the pressure loss in the pipes.
- Recent mix-E for hole # S-438 used Celbex 653 as well as Rheomac-450. Both of these materials enhance thixotropic properties of grout and are introduced by manufacturers that are anti-wash. The two admixtures from two different manufacturers could have unwanted reactions, which is not allowed for permeation grouting per section 5.2.4 - unless the performance of such mixes was verified in advance during trial in the laboratory and

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

- approved by QA. Nevertheless mix E is very thick and may not give chance to the admixture to spread in a homogenous manner through the mix.
- The length of stage-II in hole # S-438 was measured to be 2m more because the grout penetrated further after stopping the stage-I at $Q_{max} \approx 2000$ litres; two stages of 4m length each were then done instead of a 6m and 2m stage 3. The penetration of grout indicate presence of big cavities in the rock.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

watch for wildlife while driving on site.

Issued by :

m. umar

Signature

2018-12-24

Date

Verified by :

Signature

Date

SKETCH

- Grout in the hole # S-426 backflowed 2.5m in the hole after finishing the stage-1. The stage-2 was only 1.5 m due to the grout clogging the hole.
- A 4m top stage (stage-3) was done in hole # S-402. The grouting will continue in this hole in a downstage manner.
- At the end of stage-3 in hole # S-402, contractor was reminded again by the QA to wait some time for the pressure in the hole to dissipate to zero before deflating the packer to avoid any backflow of grout. The Contractor refused to follow instructions and deflated the packer early.
- Contractor was also reminded again to increase the grout flow gradually - approximately 2.5 litres/min every 5 mins. The contractor was also unable to follow these instructions to control the flow rate.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181225-DS-SR

Document number

2018-12-25

6AM - 6 PM

6583 09

MUHAMMAD UMAR

Visit date

Time (Start/End)

Project No.

Prepared by

WTD CONSTRUCTION

Agnico Eagle

Project

Client

SNC-Lavalin

KCGI

Consultant

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None

gusts

☐ Light

☐ Moderate

☒ Strong,

Temperature : -39 °C

Comments :

Appendix :

☐ Yes

☒ No

Pictures

☐ Yes

☒ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Following up on the discussion yesterday about pressure dissipation at the end of a stage, QA was told by the contractor that they cannot wait for more than 5 minutes at the end of the stage because grout in the pipes close to ground starts to freeze very quickly and the true pressure dissipation cannot be observed on the monitor with frozen grout in the pipe. Frozen grout in the pipe was observed by the QA.

→ QA proposed to the contractor to attach a valve at the collar and hold the pressure in the hole by closing this valve, the rest of

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

the attachments can be dismantled and grouting be continued in the next hole. This will give time for the pressure dissipation without interrupting the operation as required in Section 5.4.3.9 and 5.5.5.16 of specifications. This would prevent grout to bounce back into the hole after termination of grouting stage as it was observed in S-426. Nevertheless, any grouts bounced back in the grout hole should be pressure washed prior to the start of next stage.

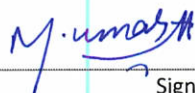
SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments
2050 litres of Mix A, C, D, D+		

SAFE AND SAFETY REMARKS

very strong winds are blowing on site, reducing visibility. Drive according to weather conditions.

Issued by :



Signature

2018-12-25

Date

Verified by :

Signature

Date

SKETCH

→ A high grout intake was observed in the hole # R336 without significant pressure build-up; possibly due to presence of sig cavities in the bedrock. 2050 litres of Mix A, C, D, D+ was injected under high flow rate with some pressure build-up.

The stage was closed with injection of a batch of mix-E and as the mix-E was injected, the flow rate suddenly dropped. GA has previously observed Mix-E to be very thick which may not give chance to the grout to travel in the rock fissures. GA proposed to the contractor to try another mix with cement content of 100 kg instead of 120 kg per 50 kg of water. Alternatively cement-bentonite grouts can be tried in these apparently open joints / fractures, which could reduce cement consumption too.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181226-DS-SR

Document number

2018-12-26

6AM - 6PM

658309

MUHAMMAD UMAR

Visit date

Time (Start/End)

Project No.

Prepared by

WTD CONSTRUCTION

Agnico Eagle

Project

Client

SNC-Lavalin

KCGI

Consultant

Contractor

Weather :

☐ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None
gusts

☐ Light

☐ Moderate

☒ Strong,

Temperature : -50 °C

Comments :

Appendix :

☐ Yes

☐ No

Pictures

☐ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Following on the discussion with contractor about introducing a new mix having intermediate properties of mix D+ & mix E, contractor proposed to try a mix having w/c ratio of 0.5 and keeping the same amount of admixtures as in D+ in future holes that may have big open fissures.

→ At the end of stage-1 in hole # P-324, grout-water mix was observed to come out of the casing

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

when packer was deflated. This is due to the grout pressure in the hole. It is possible that the hole will be clogged for further stages and cleaning of the hole will be required.

→ The contractor continued working with deflating the packer after 3-5 minutes at the end of the stage due to freezing grout problem in the pipe.

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

very cold temperature on-site today. wear appropriately to avoid any frost bite.

Issued by :

M. Umair

Signature

2018-12-26

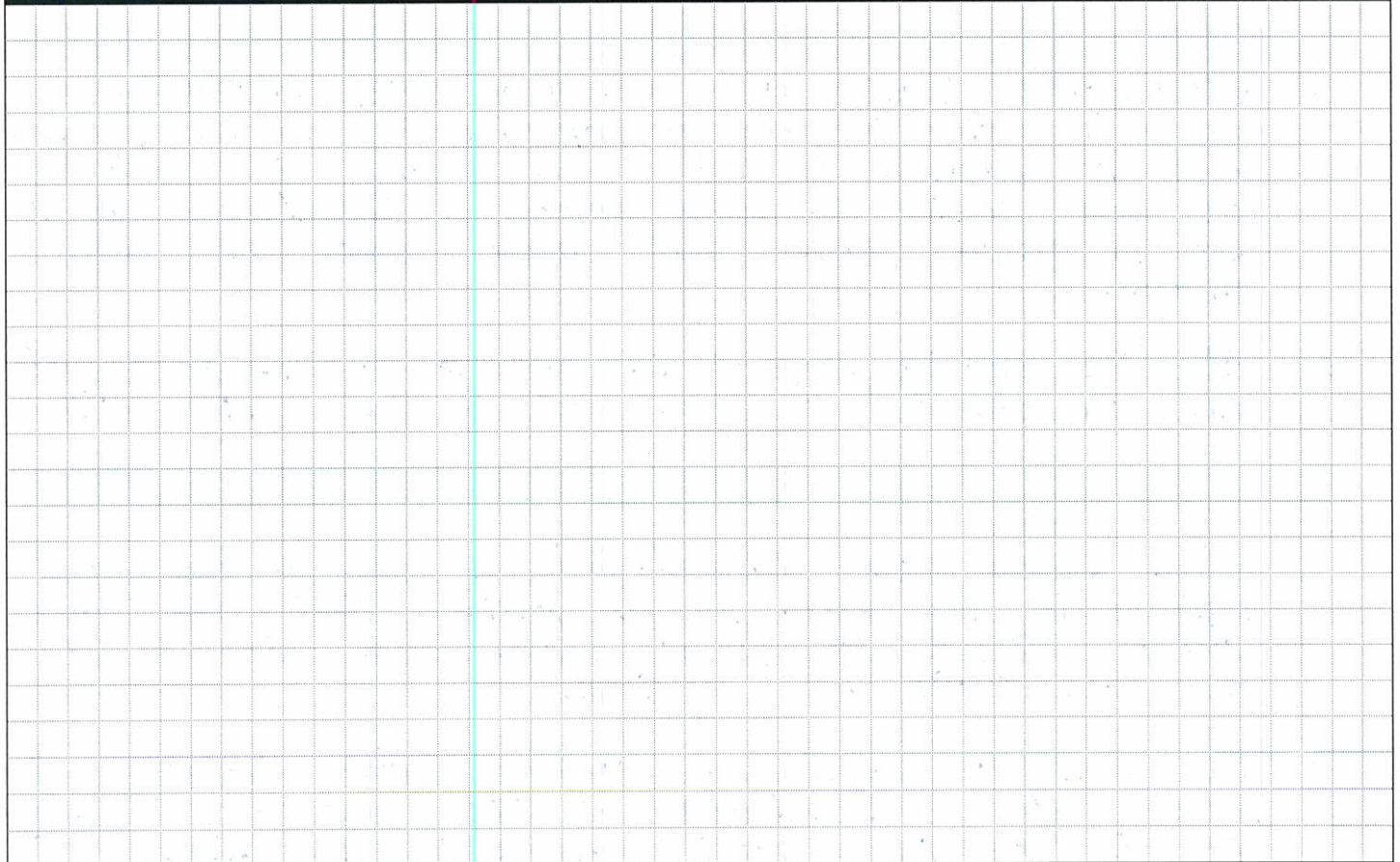
Date

Verified by :

Signature

Date

SKETCH





SNC • LAVALIN

SITE REPORT
(Detailed)

20181227-DS-SR

Document number

2018-12-27	6AM- 6PM	658309	Muhammad Umar
Visit date	Time (Start/End)	Project No.	Prepared by
WTD Construction		Agnico Eagle	
Project		Client	
SNC-Lavalin		KCG	
Consultant		Contractor	
Weather :	☐ Sunny	☒ Cloudy	☐ Rain
		☐ Storm	☐ Snow
			☐ Glaze
Wind :	☐ None gusts	☐ Light	☒ Moderate
		☐ Strong,	
Comments :		Temperature :	-35 °C
Appendix :	☐ Yes	☒ No	Pictures
		☐ Yes	☒ No
		Inspection report or other :	

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- The length of stage-2 for hole # P-324 was clogged 2m with the grout backflow from stage-1 done yesterday. The hole was not pressure cleaned for stage-2 before the set time of grout in stage-1.
- Hole # P-348 was blocked at 3m depth into bedrock. Contractor recleaned this hole many times upto 10m depth but the hole was blocked again at 3m depth for the packer to go down. Contractor decided to do a

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|--|----------|
| | 7m long stage 1 & 3m long stage-2. | |
| → | QA verified the contractor's pressure calculation at the gauge for grouting and WPT previously done. The calculations were found to be correct for grouting but some mis-calculation were found in the WPT. Contractor was informed and corrections will be applied in future. The previously sent WPT results will also be updated. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

very slippery on the dike around the drilling rig
& grouting unit. Wear shoe cleats.

Issued by :

[Signature]
Signature

2018-12-27

Date

Verified by :

Signature

Date

SKETCH

- GA observed that mix A + cold weather admixture was not being used on site for the past week despite the very cold weather.
- GA enquired with AEM about the thermistor readings on the dike and was told no thermistors are currently installed on the dike.
- The Rev. 2 of the WPT for hole S-474 was reviewed. As shown in the attachment the actual pressures at mid-stage are 10% to 50% higher than the required/target pressures in the first column. The actual pressures should be equal or as close as possible to the required/target pressures. Note, the gauge reading is not necessarily equal to the actual pressures.

20181228-DS-SR

Document number

2018-12-28	6AM - 6PM	658309	MUHAMMAD UMAR
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
Project		Client	
SNC-Lavalin		KCG	
Consultant		Contractor	
Weather :	☐ Sunny	☒ Cloudy	☐ Rain
		☐ Storm	☐ Snow
			☐ Glaze
Wind :	☐ None gusts	☐ Light	☒ Moderate
		☐ Strong,	
			Temperature : -35 °C
Comments :			
Appendix :	☐ Yes	☒ No	Pictures
		☐ Yes	☒ No
			Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- The grout injection started at 13:50 hr due to some mechanical issues with the grout mixer.
- Stage #2 of the hole #S-402 was planned to be 3m but it was drilled upto 4m. This hole is being done in a down-stage manner. During the injection, the grout by-passed over the packer and it was raised 1m. The last stage will be 2m in length.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| → | QA discussed with AEM and contractor that the contractor should try to complete all the stages of each grout hole in the same day, if refusal criteria is met in previous stage of hole. This will help with the grout backflow problem and clogging of the holes as observed previously. | |
| → | QA also discussed with AEM to drill a trial hole at station 516 and perform a WPT in that hole. This is to assess the | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

watch for your co-workers for any sign of frost-bite.

Issued by :

M. Wmatt

Signature

2018-12-28

Date

Verified by :

Signature

Date

SKETCH

groutability of the hole and check if there is any ground freezing in this section to decide about the extent of grout curtain towards east side.

→ Pressure loss in the grout pipes was estimated by the QA for the mix-A. This was done by comparing the pressure readings at the collar gauge and gauge attached with the flowmeter. Very minimal pressure loss was noted for mix-A but the results will be verified with more readings and with different mixes in future. Meanwhile, the pressure reading at the collar gauge should be checked continuously to verify the refusal pressure until pressure losses for each mix have been defined.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181229-DS-SR

Document number

2018-12-29	6AM - 6PM	658309	MUHAMMAD UMAR
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
SNC-Lavalin		KCG	
Consultant		Contractor	
Weather :	☐ Sunny	☒ Cloudy	☐ Rain
		☐ Storm	☐ Snow
			☐ Glaze
Wind :	☐ None gusts	☐ Light	☒ Moderate
		☐ Strong,	
			Temperature : -30 °C
Comments :			
Appendix :	☐ Yes	☒ No	Pictures
		☐ Yes	☒ No
			Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- During Hole # P-288, stage 1, the flow rate was not steady and was observed upto 27 LPM in the first 15 minutes, However it should have been increased gradually by 2.5 Litre/min every 3-5 mins. The flow suddenly dropped to 0 at 10:41 AM. Contractor stopped the operation and deflated the packer. The lines were then checked for any abnormalities or blockage. No blockage was observed and grouting was resumed. The checking of the lines was recorded on the graph.
- During hole # P-276, stage-1, QA checked the pressure readings on the both gauges installed at collar and at flowmeter. and

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| | noted that the collar gauge is not going above 3.2 bar pressure. Pressure was increased on the monitor more than 4 bar but the collar gauge was stuck at 3.2 bar. | |
| → | After finishing the above stage, gauge test was performed by building the pressure in the lines and the collar gauge was not going above 3.2 bar. It was confirmed that the installed gauge is malfunctioning and needs to be replaced. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Slippery conditions on the Dike. Wear cleats.

Issued by :

M. umayyath

Signature

2018-12-29

Date

Verified by :

Signature

Date

SKETCH

- Since the start of the grout injection work, no working gauge has been installed on the collar by the contractor.
- QA asked the contractor about the calibration of the pressure gauge attached with the flow meter. He was told that the gauge was calibrated before the start of the job and has not been calibrated since then. According to the QA-QC schedule attached, weekly calibration is required for flowmeter and for gauges.
- QA asked the contractor for the reason of flow fluctuations in hole # 510 stage-I. Contractor told QA that they have encountered some small pieces of plastic and small stones in the cement they receive. and the fluctuations are due to this when they get stuck with the valve. QA suggests to install a screen at the entrance to the mixer similar to the screen that is attached in the agitation tank.

APPENDIX 2

SUMMARY OF MAIN QUALITY MONITORING PROCEDURES DURING WORK

ITEMS	ELEMENT	RESPONSABILITIES OF THE GROUT ENGINEER REPRESENTATIVES			RESPONSABILITIES OF THE QC REPRESENTATIVES		
		TASK	FREQUENCY	FORM TO FILL	TASK	FREQUENCY	FORM TO FILL
Drilling <i>Sections 5.1, 5.4 and 5.5</i>	Grout Hole Location	• ☐ Overview the surveying processes	As required	Drilling Form	• ☐ Overall checks with surveyor prior to start of drilling and carry out spot checks, when applicable.	For each series of holes	Drilling Form
	Grout Hole Depth					Every grout hole	
	Inclination of Grout Hole					Every grout hole	
<i>Sections 5.4 and 5.5</i>	Water Pressure Test	• ☐ Overview compliance with specifications on equipment, stages, packer locations and tests	Each borehole	Water Pressure Form		Every stage	WPT Form
Grout Mix <i>Sections 5.2, 5.3 and 5.5</i>	Cement	• ☐ Check compliance with specifications and overview QC monitoring	Once on start followed by as required basis	Grouting Forms	• ☐ Check proper cement storage and handling in dry conditions	Weekly or as required by the Engineer	Grout Form
	Chemical Admixtures for Grout	• ☐ Check compliance with specifications and overview QC tasks • ☐ Check if proper MSDS sheets are placed in working area	Weekly or as required		• ☐ Check storage requirements and expiry dates according to manufacturer information sheet. • ☐ Check if product information meet ASTM requirements (ASTM C494 M)	Per shipment or as required by the Engineer	
	Mud Balance	• ☐ Assure the density of mix is tested for assessment of w/c ratio	Per Shift		• ☐ Check density of the mix to indicate the w/c ratio of the mix	One per batch or as required by Engineer	
	Marsh Funnel	• ☐ Overview Marsh readings to assess fluidity of grout prior to injection	Per Shift		• ☐ Conduct Marsh Funnel Tests		
	Bleeding	• ☐ Check tests are carried out according to ASTM	Per Shift		• ☐ Conduct Bleeding Test	One per Shift per Mix Type or as required by Engineer	
	Initial Set Time (Gel Time)	• ☐ Check the correct procedures and tests are used and overview the tests and influencing factors	Once per week or when a mix changes		• ☐ Conduct tests to obtain viscosity-time development of mix	One per mix per week, when the mix proportion or when temperature changes	Grout Form &/or Lab Form
	Final Set Time (Hardening Time)				• ☐ Conduct Vicat test (ASTM C 807)		
		Grout Cubic Strength	• ☐ Overview sampling, curing and testing	For each mix and weekly afterwards	Lab Reports	• ☐ Prepare molds • ☐ Sampling • ☐ Curing • ☐ Strength testing - 7 days and 28 days (ASTM C 109)	For each new mix, thereafter once a week or as required by the Engineer
Injection Process <i>Sections 5.4, and 5.5</i>	Grout Equipment	• ☐ Overview if proper equipment are used per specification requirements	As required	Grouting Form	• ☐ Check if proper equipment are used per specification requirements	Start of work and as required by the Engineer	Grouting Form
	Packers	• ☐ Overview product sheets, project specification and proper usage	As Required		• ☐ Check product sheets, project specification and proper usage	Start of work or as required by the Engineer	
	Grout Pressure Gauge Calibration	• ☐ Check proper working conditions and overview calibration tasks.	Weekly	Calibration Report	• ☐ Conduct calibration test and check of the instrument work properly	Every week or as deemed necessary by the Engineer	Calibration Report
	Flowmeters			Calibration Report			



SNC-LAVALIN

SITE REPORT (Detailed)

20181230-DS-SR

Document number

2018-12-30	6AM - 6PM	658309	MUHAMMAD UMAR
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
Project		Client	
SNC-Lavalin		KCG	
Consultant		Contractor	
Weather :	☐ Sunny	☒ Cloudy	☐ Rain
	☐ Storm	☐ Snow	☐ Glaze
Wind :	☐ None gusts	☐ Light	☒ Moderate
	☐ Strong,	Temperature : -31 °C	
Comments :			
Appendix :	☐ Yes	☒ No	Pictures
	☐ Yes	☒ No	Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Hole # P-402 was redrilled again to do the last stage. Contractor told QA that the driller was unable to drill more than 20.3 m (9m in rock). He was losing the water pressure in the hole and was unable to clean the hole and drill further. They decided to grout 1m stage 1. Before injection when the hole depth was measured, it was open upto 19.3 m (8m in rock) which means the drilled depth is filled with broken rock as driller was unable to clean it. Contractor decided to grout the stage assuming grout will pass through the rock fragments. but only 10 Litres could be injected. Stage-1 could not be done effectively.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to
→	During Stage-1 injection for hole # S-390, QA advised the contractor to inject more than 2000 Litres because the pressure was building up in the hole with reducing flow rate. Contractor used the newly proposed mix-F with 0.5 w/c ratio. No trial-mix tests have been performed on mix-F, it was prepared during injection for the first time. Following are the results of on-site testing:	
*	Marsh funnel = > 22 secs. (stopped to flow after 22 secs)	
*	Density = 1.76 g/cm ³	

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Always keep your radio with you to be aware of any warnings and for communication.

Issued by :

M. Umar

Signature

2018-12-30

Date

Verified by :

Signature

Date

SKETCH

- The stage-1 of hole # S-390 was stopped after 8 minutes of reaching the refusal pressure instead of 10 mins. The pressure started to increase and the contractor was unable to control it, so they stopped the flow.
- Following up on the flowrate & pressure spikes observed during the injection, QA suggests that with careful monitoring of the valves and steady flowrate of 2 L/min to 8 L/min after 10-15 minutes, could minimize fluctuations and avoid pressure spikes. Contractor has been previously informed about increasing the flowrate gradually.
- No working pressure gauge was available on-site to be installed on collar. Contractor informed that the new gauge will come on Thursday.
- Snow removal was being done on the WRSF Dike for the preparation of foundation.



SNC • LAVALIN

SITE REPORT
(Detailed)

20181231-DS-SR

Document number

2018-12-31 6AM - 6PM 658309 Muhammad Umar

Visit date Time (Start/End) Project No. Prepared by

WTD Construction Agnico Eagle

Project Client

SNC-Lavalin KCGI

Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -30 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- No QC was present on-site today because of shift change. QA performed tests on the grout mixes.
- Grout hole # S-378 was only drilled 7.6m in bedrock. Contractor told QA that the driller encountered very fractured rock at this depth and experienced pressure loss in the hole. Stage 2 & stage 3 were grouted in this hole. The hole will be redrilled again to 10 m to do the stage-1.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|--|----------|
| → | QA discussed in the daily meeting with the client & contractor the holes which encounter fractured rock during drilling should be grouted in downstage manner. | |
| → | QA verified the drilled depth of the hole # S-402 with the contractor and QC recorded depth. Previously it was mentioned that the hole was grouted up to 8m in rock in two stages coming downstage. But upon verification, | |

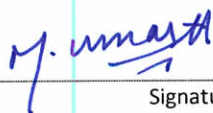
SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

very slippery on the dike. wear cleats.

Issued by :



Signature

2018-12-31

Date

Verified by :

Signature

Date

SKETCH

GA concluded that 4 m stage-3 & 5 m stage-2 was done. The 1 m stage-1 could not be done due to drilling issues mentioned in previous site report.

→ After a 4 m stage-3 was done in hole # S-402, two 3 m stages were proposed by GA, but the contractor drilled a 5 m stage 2 instead of 3. It is important that we follow the target stage depths during drilling unless a fractured rock zone is encountered. In that case, the stage length can be changed.

20190101-DS-SR

Document number

Visit date 2019-01-01	Time (Start/End) 6AM - 6PM	Project No. 658309	Prepared by M. Umar M. Saleem
Project WTD CONSTRUCTION		Client Agnico Eagle	
Consultant SNC-Lavalin		Contractor KCG	
Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -30 °C			
Comments :			
Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :			

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

→ Hole # S-354 was drilled upto 10m in bedrock but the hole caved 7m. 3m open length was available for grouting. A 7.5m first stage was grouted assuming the grout will penetrate through the caved rock fragments. 640 litres of grout was injected. GA suggests to add tertiary holes around this hole since the full length could not be grouted effectively.

→ Big bags of cement are being used on site. The cement is

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No	Subject	Given to
	filled in buckets and each bucket is weighted 200kg. GA went with QC to the bucket production area to verify the weights of cement bucket and check the calibration of the scale. No discrepancies were observed.	
	A wire mesh is being used to filter the cement before putting in the buckets.	

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Very slippery on the dike. wear cleats.

Issued by :

M. Umar

Signature

2019-01-01

Date

Verified by :

Signature

Date

SKETCH

- Hole # S-378 was redrilled today to do the stage-1. Stage 2 & 3 have been done previously and stage-1 is being done in a down-stage manner.
- The drilling of secondary holes have been completed untill S-258. Casing installation for tertiary holes will start tomorrow.
- G.C started the vicat test on mix-A but was unable to produce any results. The grout did not set untill the end of the shift in approximately 7.5 hours.



SNC-LAVALIN

SITE REPORT
(Detailed)

20190102-DS-SR.
Document number

2019-01-02 6AM-6PM 658309 MUHAMMAD SALBEM
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KGC
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None ☐ Light ☒ Moderate ☐ Strong, gusts Temperature : -35 °C

Comments : Forecast for Blizzard.

Appendix : ☐ Yes ☐ No Pictures ☐ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Vicat test performed yesterday, but could not complete during the shift. QC came back after dinner & took readings at 7:30 PM & 9:30 PM at 9:30 PM Found Penetration less than 25mm & Calculated initial set time ≈ 9.7 Hours. Could not take get Final Set time due to no night shift.
- Contractor performed water test at S306 but the procedure they followed is not as per standard Lugeon test procedure. Client was provided with Lugeon test procedure and requested to advise contractor to follow Lugeon test procedure.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| - | Drilling crew start installing casing for Tertiary Holes & completed 5 casing | |
| - | 2 grout stages completed, during grouting stage 1 (bottom stage) of S294. Spikes on pressure graph were noted during grout changes from TYPE B - TYPE C. Talk to operator, it was due to pump issue, later on able to stabilize pressure & completed stage. | |
| - | High grout take at 1st stage of S294, (973L), T291 & T297 will be required | |

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

SAFE AND SAFETY REMARKS

Some snow blowing & windy condition in the afternoon
 Vehicle used by QA & QC was down today & have issue to
 make it on site today.

Issued by :

Seen
 Signature

Jan 2, 2019
 Date

Verified by :

Signature

Date

SKETCH



SNC • LAVALIN

SITE REPORT
(Detailed)

20190103-DS-SR

Document number

2014-01-03 6:00/18:00 658309 M. JÉZÉQUEL
Visit date Time (Start/End) Project No. Prepared by

WTO CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☒ Snow ☐ Glaze
Wind : ☐ None gusts ☐ Light ☒ Moderate ☐ Strong, Temperature : -24 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- DURING THE DAILY MEETING, QA SUGGESTED TO USE A STANDARD LUGEON PROCEDURE FOR WATER PRESSURE TESTS. KCG SAID THAT THEIR SUPERVISOR IS COMING ON SITE LATER TODAY, SO A DECISION WILL BE MADE BY THE CONTRACTOR TOMORROW REGARDING THE LUGEON PROCEDURE PROPOSED BY QA.
- AEM DIKE SUPERVISOR CONFIRMED THAT DOWNSTAGE GROUTING AS SUGGESTED BY QA/SNC-LAVALIN WILL NOT BE USED DUE TO THE SHORT SCHEDULE FOR DEWATERING (FOR TERTIARY HOLES). HOWEVER, QA SUGGESTED TO STOP DRILLING IF BEDROCK IS CAVING IN THE HOLE, GROUT BY INSECTION, AND THEN DRILL TO THE REQUIRED DEPTH. AEM AGREED WITH THIS METHOD.
- 9 STAGES COMPLETED TODAY: HOLES # S-282, S-270 AND S-258 WERE GROUTED IN 3 STAGES EACH, AND EVERY STAGE MET REFUSAL CRITERIA.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| → | A BLEEDING VALUE OF 7.6% WAS OBTAINED ON MIX A TODAY, WHICH EXCEEDS THE LIMIT OF 5% AS PER SPECIFICATIONS. | |
| → | QC DID SOME TESTS USING AN OLD MARSH FUNNEL (WHICH HAS BEEN USED UNTIL JANUARY 1ST) AND A NEW MARSH FUNNEL, AND FOUND OUT THAT WATER AND MIX A WAS FLOWING MUCH FASTER IN THE NEW CONE (~9-10 SECONDS DIFFERENCE). THIS MAY HAVE AN IMPACT ON ALL THE RESULTS OF VISIOSITY CONDUCTED USING THE OLD FUNNEL, WHICH WAS OVERESTIMATED. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

THERE WERE NEAR-BLIZZARD CONDITIONS THIS MORNING, STAY AWARE AND MAKE SURE TO FOLLOW PROPER BLIZZARD PROCEDURES.

Issued by :

Mark L. Lipp

Signature

2019-01-03

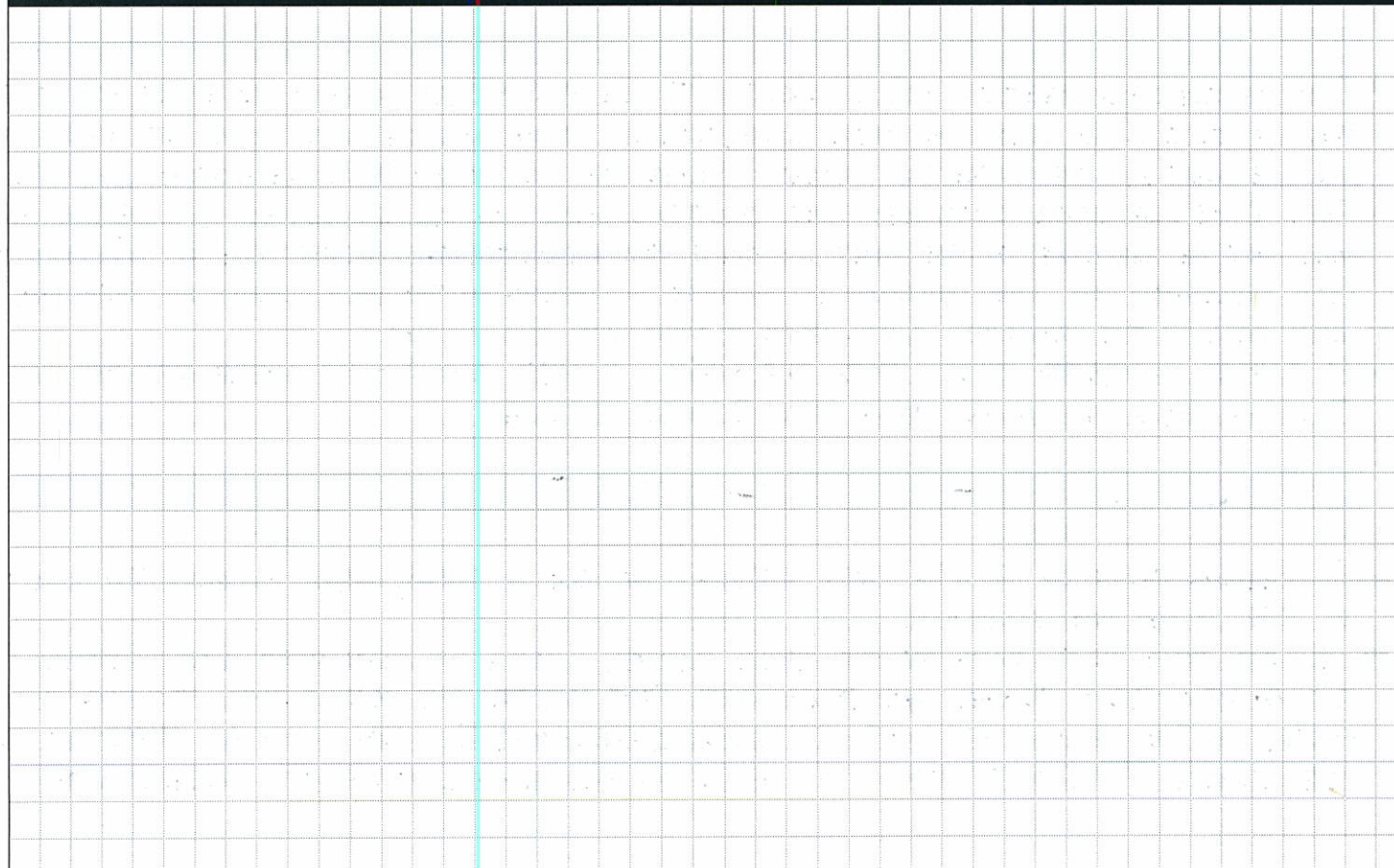
Date

Verified by :

Signature

Date

SKETCH





SNC • LAVALIN

SITE REPORT
(Detailed)

20190104-DS-SR

Document number

2019-01-04	6:00/18:00	658309	M. JÉZÉQUEL
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
Project		Client	
SNC-Lavalin	KCG		
Consultant	Contractor		
Weather : ☒ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze			
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong,			
			Temperature : -30 °C
Comments :			
Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :			

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- QA AND GROUT SPECIALIST FROM SNC-LAVALIN HAD A MEETING TODAY WITH AEM GEOTECHNICAL ENGINEER AND KCG GROUT INJECTION SUPERVISOR. THE MAIN POINTS REGARDING QUALITY ASSURANCE WERE:
- FOR THE NEXT WATER PRESSURE TESTS, KCG IS GOING TO FOLLOW A STANDARD PROCEDURE AS PREVIOUSLY SUGGESTED BY QA, THAT IS MAINTAINING THE TARGET PRESSURE FOR 5 MINUTES WHILE TAKING A FLOW READING EVERY MINUTE.
 - QA NOTICED THAT THE WPT DONE IN HOLE S-306 WAS DONE AT A MAXIMUM PRESSURE HIGHER THAN THE GROUT INJECTION PRESSURE. AS PER SPECIFICATIONS, THE SAME PRESSURE FROM GROUT INJECTION SHOULD BE USED IN WATER PRESSURE TESTS TO AVOID HYDRO JACKING.
 - QA RAISED THE PROBLEM OF EXCESSIVE BLEEDING IN MIX A OBSERVED SINCE JANUARY 1ST, 2019. QA INQUIRED KCG TO FIND A SOLUTION TO HAVE A STABLE MIX A AND PROPOSED TO INCREASE THE MIXING

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- Wd. ~~background~~ ~~given~~
- TIME IN ORDER TO REDUCE BLEEDING.
- IN THE MORNING, 6.2% BLEEDING WAS OBSERVED IN MIX A. ANOTHER TEST WAS CONDUCTED AFTER INCREASING THE MIXING TIME, AND 7.6% BLEEDING WAS NOTED (STILL IN MIX A), SO INCREASED MIXING TIME DID NOT IMPROVE BLEEDING. KCG MUST FIND A SOLUTION TO PRODUCE STABLE MIXES.
 - QA, AEM AND KCG AGREED TO PROCEED WITH A 10-m SINGLE STAGE IN PRIMARY HOLES #192 AND #180. BECAUSE PERMAFROST WAS ENCOUNTERED IN THESE HOLES TODAY WHILE RE DRILLING AND CLEANING PROCESSES.
 - HOLE # P-204 WAS ALSO RE-DRILLED AND WASHED THIS MORNING BUT NO PERMAFROST WAS ENCOUNTERED. THIS HOLE WILL BE GROUTED BY INJECTION IN 3 STAGES.

CONTINUED IN SKETCH SECTION

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

WEAR GLOVES WHEN MANIPULATING CEMENT.

Issued by :



Signature

2019-01-04

Date

Verified by :



Signature

Date

SKETCH

- 9 STAGES WERE COMPLETED TODAY: HOLES #P-240, P-228 AND P-216 WERE GROUTED IN 3 STAGES EACH, AND EVERY STAGE MET REFUSAL CRITERIA.
- GROUT INJECTION WAS DISCONTINUED IN THE AFTERNOON DUE TO PROBLEMS WITH THE PRESSURE SENSOR IN THE ACQUISITION SYSTEM.
- QA INQUIRED THE CONTRACTOR FOR THE CALIBRATION OF FLOWMETER AND PRESSURE GAUGES. KCG AGREED TO PROCEED WITH THE CALIBRATION OF THE FLOWMETER, BUT SAID THAT HE WAS NOT EQUIPPED TO DO THE CALIBRATION OF THE PRESSURE GAUGES. HE SUGGESTED TO COMPARE THE READINGS OF TWO DIFFERENT GAUGES AND INVESTIGATE IF THERE ARE DISCREPANCIES BETWEEN THE TWO VALUES.
 - ↳ MOREOVER, KCG CONFIRMED THAT THEY ARE GOING TO INSTALL A PRESSURE GAUGE AT THE COLLAR AS PER SPECIFICATIONS. IT SHOULD BE DONE TOMORROW.
- QC CONDUCTED A VICAT TEST TODAY ON MIX A. THE INITIAL SETTING TIME WAS 6.25 HOURS WITH AN INITIAL MIX TEMPERATURE OF 33.8 °C, WHICH IS WAY ABOVE THE MAXIMUM TEMPERATURE OF 20 °C AS PER SPECIFICATIONS. THE CEMENT WAS STORED AT A HIGH TEMPERATURE; THE TEMPERATURE OF THE CEMENT INSIDE THE BUCKETS IN THE INJECTION UNIT WAS ~ 34 °C.
 - ↳ FOR COMPARISON, THE VICAT TEST DONE ON JANUARY 1ST, 2019 ON MIX A GAVE AN INITIAL SET TIME OF ~ 9.7 HOURS WITH AN INITIAL MIX TEMPERATURE OF 16.5 °C.



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SITE REPORT
(Detailed)

20190105-DS-SR

Document number

2019-01-05 6:00/18:00 658309 M. JÉZÉQUEL
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -29 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- 2127 LITRES OF GROUT WERE INJECTED IN STAGE 1 OF HOLE #P-204 WITHOUT PRESSURE REFUSAL. THE CONTRACTOR WENT FROM USING MIX A, THEN B-C-O-F-E. FOR THE LAST ~200L, THE BATCH OPERATOR EVEN ADDED MORE CEMENT IN THE MIX, WHICH BECAME VERY THICK. INJECTION IN THIS HOLE WAS DISCONTINUED FOR THE REST OF THE DAY.
- HOLES # P-192 AND P-180 WERE INJECTED WITH GROUT ON A SINGLE STAGE ON THE WHOLE BEDROCK DEPTH USING PRESSURE FOR STAGE 3. BOTH HOLES MET REFUSAL CRITERIA WITH LOW GROUT INTAKE. SINCE THESE HOLES WERE LOCATED IN PERMAFROST, MIX A + COLD WEATHER ADMIXTURE WAS USED.
- LOW DENSITY VALUES WERE FOUND FOR THE GROUT DURING THE MORNING (HOLES P-204, P-192, P-180). IT WAS FOUND OUT THAT THE BATCH OPERATOR FORGOT TO ADD A 20 kg CEMENT BUCKET IN EACH BATCH (HE WAS ADDING 7 BUCKETS INSTEAD OF 8). THIS WAS CORRECTED IN THE AFTERNOON.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Resolution |
|----|--|------------|
| → | BOTTOM STAGE OF HOLE # S-378 WAS INJECTED FOLLOWING REGRILLING IN THAT HOLE DUE TO CAVING. REFUSAL CRITERIA WERE MET FOR THE 4-m STAGE. SINCE THE LAST STAGE WAS AT THE BOTTOM OF THE HOLE, QA ENQUIRED THE CONTRACTOR TO BACKFILL THE HOLE AT LEAST TO THE BOTTOM OF THE CASING. IT WAS BACKFILLED UP TO GROUND SURFACE. | |
| → | THE PRESSURE SENSOR IN THE ACQUISITION SYSTEM IS DAMAGED AND GIVES ERRONEOUS RESULTS. HOWEVER, A NEW PRESSURE GAUGE WAS INSTALLED AT THE COLLAR OF THE HOLE TODAY AS REQUESTED BY QA SINCE DECEMBER 18, 2018. THIS GAUGE WAS USED TO ASSESS THE PRESSURE IN THE PIPE FOR GROUT INJECTION. QA CLOSELY MONITORED THE PRESSION DURING INJECTION AND FOUND THAT THE CONTRACTOR WAS USING PROPER PRESSURE VALUES FOR THE STAGES (USUALLY WITHIN 0.2 BAR OF THE TARGET VALUE). | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

IN CASE OF AN ACCIDENT / EMERGENCY, AN AGMCO REPRESENTATIVE MUST BE CONTACTED AS SOON AS POSSIBLE.

Issued by :



Signature

2018-01-05

Date

Verified by :

Signature

Date

SKETCH

→ QC CONDUCTED A BLEEDING TEST ON MIX A + COLD WEATHER ADMIXTURE: RESULT WAS 8.9%.
 ⇒ NON-STABLE AS PER SPECIFICATIONS.
 • BLEEDING ON MIX D: 0.89% ⇒ STABLE.

→ VICAT TEST ON MIX D: INITIAL SET TIME OF 5.5 HOURS AT AN INITIAL TEMPERATURE OF 32.8 °C.

• INITIAL TEMPERATURE WAS STILL VERY HIGH. IT MAY BE DUE TO THE FACT THAT CEMENT BUCKETS THAT SPEND THE NIGHT IN THE INJECTION UNIT GET WARM BECAUSE OF THE HIGH TEMPERATURE INSIDE THE UNIT. EARLY IN THE MORNING THE MIX WAS AT 32.8 °C BUT DECREASED TO 22 - 25 °C AFTER ~ 2 HOURS. NEVERTHELESS, QA ENQUIRED THE CONTRACTOR TO FIND A WAY TO HAVE A GROUT TEMPERATURE BETWEEN 5 TO 30 °C AS PER SPECIFICATIONS.



SNC • LAVALIN

SITE REPORT
(Detailed)

20190106-DS-SR

Document number

2019-01-06 6:00/18:00 658309 M. JÉZÉQUEL
Visit date Time (Start/End) Project No. Prepared by
WTO CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☒ None gusts ☐ Light ☐ Moderate ☐ Strong, Temperature : -28 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☒ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- NO INJECTION ACTIVITIES IN THE MORNING DUE TO PROBLEMS WITH THE GENERATOR THAT POWERS THE INJECTION UNIT. THE GENERATOR WAS FIXED AT ~14:00 IN THE AFTERNOON.
- WATER PRESSURE TEST WAS CARRIED OUT IN HOLE S-516
 - WHEN PRESSURE IS LOW (< 1 BAR), RESULTS ARE NOT RELIABLE DUE TO THE FACT THAT THE READINGS ARE MADE ON A GAUGE RANGED FROM 0 TO 98 BAR (LOW PRESSURES CANNOT BE READ PROPERLY AS THE LOWEST MARK IS A 2 BAR). THE GAUGE AT THE COLLAR RANGES FROM 0 TO 14 BAR BUT THE FLUCTUATIONS WERE VERY HIGH (> 2 BARS) SO IT COULD NOT BE USED FOR READINGS. THE PRESSURE SENSOR IN THE ACQUISITION SYSTEM WAS STILL DAMAGED, SO IT COULD NOT BE USED EITHER.
 - THE PUMP COULD NOT PROVIDE A CONSTANT FLOW, WHICH MAKES IT HARDER FOR THE INTERPRETATION OF THIS WATER PRESSURE TEST, ESPECIALLY IN STAGES 2 AND 3 WHERE HIGHER FLOWS WERE OBSERVED.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Comments |
|----|--|----------|
| 1 | THE STICKUP OF THE PIPE (HEIGHT OF PRESSURE GAUGE) COULD NOT ALWAYS BE AS THE CONTRACTOR'S PLAN DUE TO THE USAGE OF DOUBLE PACKER (EXAMPLE: 1.5 m INSTEAD OF 0.5 m AS PLANNED). HOWEVER, THE EFFECT ON THE ACTUAL PRESSURE IS SMALL. | |
| 2 | THE SAME GAUGE PRESSURES THAN GROUT INJECTION WERE USED FOR THE WATER PRESSURE TEST; HOWEVER, THE ACTUAL PRESSURE OF EACH STAGE WILL BE LOWER THAN THE DESIGN FOR INJECTION DUE TO THE LOWER DENSITY OF WATER COMPARED TO GROUT. | |
| 3 | QA AND SNC-LAVALIN DESIGN TEAM CONFIRMED TO AEM THAT THE TERTIARY HOLES SHOULD BE GROUTED IN 3 STAGES REGARDLESS OF THE GROUT TAKE OF EACH OF THE ADJACENT HOLE STAGES. | |

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

SAFE AND SAFETY REMARKS

SAND WAS PLACED AROUND THE INJECTION UNIT BUT IT IS STILL SLIPPERY, WATCH FOR TRIPS AND FALLS.

Issued by :



Signature

2019-01-06

Date

Verified by :

Signature

Date

SKETCH

→ QA VISITED THE WRSF DIKE TODAY. SNOW REMOVAL WAS BEING COMPLETED AT THE EAST ABUTMENT. QA, QC, AEM AND KCG AGREED THAT THE LIP BUCKET IS GOING TO BE NECESSARY TO CLEAN THE KEY TRENCH, AT LEAST WHERE THE FFAB, FF AND CF ARE GOING TO BE PLACED. FOUNDATION APPROVALS WILL BE REQUIRED PRIOR TO ROCKFILL PLACEMENT SCHEDULED LATER THIS WEEK.



SNC • LAVALIN

SITE REPORT (Detailed)

20190107-DS-SR

Document number

2019-01-07

6AM - 6PM

658309

MOHAMMAD SALEEM

Visit date

Time (Start/End)

Project No.

Prepared by

WTD CONSTRUCTION

Agnico Eagle

Project

Client

SNC-Lavalin

KGC

Consultant

Contractor

Weather :

☒ Sunny

☒ Cloudy

☐ Rain

☐ Storm

☐ Snow

☐ Glaze

Wind :

☐ None gusts

☒ Light

☐ Moderate

☐ Strong,

Temperature : -36 °C

Comments :

Appendix :

☐ Yes

☐ No

Pictures

☐ Yes

☐ No

Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Client was informed to use MIXB as MIXB meets the HMG criteria and MIXA has issues with bleeding out of spec.
- Client was requested to add T267 for water test and Tertiary holes T297 and T357 to add in the list to do Water test.
- Last Primary hole PS16 grouted and encountered low grout take. Decision still pending if need to add more holes after the Permit/Post limit confirmed.
- Client is reminded in the morning meeting about the high grout temperature.
- Two Tertiary holes T501 & T495 grouted and observed very low grout take.
- T501 - Hole looks tight at target depth and contractor was worried the

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No

Subject

Given to

Packer may stick, so contractor was advised to raise the Packer by 0.5m and grout 1st stage as 4.5m & 2nd stage as 3.5m

T495 Packer was placed in the hole before lunch. When crew started grouting after lunch, grout bypass observed. When try to lift the Packer by 0.5m the Packer stuck in the hole. Crew able to remove the Packer but Packer lost in the hole. New Packer installed for 6m stage and grouted with old Packer still in the hole. Stage 2nd & 3rd grouted as 2m each & very low grout take

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

Slippery ground, conditions & very cold weather.
Wear proper clothing and cleats.

Issued by :


Signature

2019-01-07
Date

Verified by :

Signature

Date

SKETCH

observed in all three stage.
There was Blast during Lunch time and This Packer stuck
might be due to Blast as the Packer was in the hole at
that time.
- VICAT test performed on grout MIX B Today and calculated
initial set time of 305 minutes = 5.08 hours.

20190108-NS-SR

Document number

2019-01-08 18:00/6:00 658309 M. JÉZÉQUEL
Visit date Time (Start/End) Project No. Prepared by

WTD CONSTRUCTION Agnico Eagle
Project Client

SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None ☐ Light ☒ Moderate ☐ Strong, gusts Temperature : -38 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- FIRST NIGHT SHIFT FOR GROUT INJECTION. QA IS ON SITE DURING NIGHT SHIFT AND SNC-LAVALIN GROUT SPECIALIST IS ON SITE DURING DAY SHIFT. HOWEVER, THERE IS ONLY ONE QC REPRESENTATIVE ON SITE, DAY SHIFT ONLY. DUE TO A SHORTAGE OF QC, NO QUALITY CONTROL OF THE GROUT MIX WILL BE DONE DURING NIGHT SHIFT. THIS IS A DEVIANCE FROM THE TECHNICAL SPECIFICATIONS WITH REGARDS TO THE TESTS FREQUENCY ON GROUT MIX.
- PRESSURE SENSOR (TRANSDUCER) IN THE ACQUISITION SYSTEM IS STILL NOT WORKING: THE GRAPH ON THE COMPUTER SHOWS A PRESSURE VALUE OF ~3.15 BAR WHEN THE ACTUAL PRESSURE IS 0, AND DOES NOT REFLECT THE ACTUAL PRESSURE VARIATIONS. THE CONTRACTOR STILL HAS TO RELY ON MANUAL READINGS ON THE PRESSURE GAUGE AT THE COLLAR.
- NEW TEAM FROM THE CONTRACTOR FOR NIGHT SHIFT: LABORS HAVE VERY LITTLE EXPERIENCE IN GROUT

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

No Subject Comments
INJECTION AND THE TEAM HEAVILY RELIES ON QA FOR GROUTING ACTIVITIES SUCH AS MONITORING GAUGE PRESSURE AND MAKING THE DECISION WHEN TO CHANGE THE GROUT MIX (E.G. GOING FROM MIX B TO MIX C) IN THE ABSENCE OF AN EXPERIENCED GROUTING SUPERVISOR.
→ MIX B WAS USED INSTEAD OF MIX A BECAUSE IT MEETS HIGH MOBILITY GROUT REQUIREMENTS AND HAS BLEED VALUES WITHIN SPECIFICATIONS AS MENTIONED IN 20190107-DS-SR. ALL STAKEHOLDERS (AEM, SNC-LAVALIN, GHD AND KCG) AGREED TO REPLACE MIX A WITH MIX B FROM NOW ON.

* continued in sketch section

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

VERY COLD TEMPERATURE, $< -50^{\circ}\text{C}$ WITH WINDCHILL, WEAR PROPER CLOTHES + FACE PROTECTION

Issued by :



Signature

2019-01-08

Date

Verified by :

Signature

Date

SKETCH

→ INJECTION OF HOLE # T-465

- STAGE 1: NO PRESSURE BUILD UP UNTIL THE CONTRACTOR WENT FROM MIX B TO MIX C AFTER ~460 L. REFUSAL AT 828 L USING MIX C.
- STAGE 2: BEFORE THE START OF THE SECOND STAGE, THE CONTRACTOR ADDED G-LENUM SUPERPLASTICIZER INTO THE GROUT REMAINING IN THE RETENTION TANK TO MAKE IT LESS VISCOUS (~ AS MIX B) FOR THE NEW STAGE. THEN STARTED THE INJECTION OF STAGE 2 USING THAT MIX. QA ENQUIRED THE CONTRACTOR TO DISPOSE OF THE REMAINING MIX IN THE FUTURE AND START A NEW STAGE WITH MIX B (UNLESS MIX B WAS ALREADY IN THE TANK AND HAS NOT BEEN IN CIRCULATION FOR OVER TWO HOURS). CONTRACTOR USED MIX B FOR THE REST OF THE STAGE AND REACHED REFUSAL AFTER THE INJECTION OF 948 L.
- STAGE 3: VERY LOW GROUT TAKE

→ NO OTHER STAGE WAS COMPLETED TONIGHT: THE TEAM DID NOT FEEL COMFORTABLE WORKING WITHOUT PROPER TRAINING, ESPECIALLY USING THE COMPUTER CONNECTED TO THE DATA ACQUISITION SYSTEM.



SNC • LAVALIN

SITE REPORT
(Detailed)

20190108-DS-SR
Document number

2019-01-08	6AM-6PM	658309	MUHAMMAD SALEEM
Visit date	Time (Start/End)	Project No.	Prepared by
WTD CONSTRUCTION		Agnico Eagle	
Project		Client	
SNC-Lavalin		KGC	
Consultant		Contractor	
Weather :	☐ Sunny	☒ Cloudy	☐ Rain
	☐ Storm	☐ Snow	☐ Glaze
Wind :	☐ None gusts	☐ Light	☒ Moderate
	☐ Strong,	Temperature : -30 °C	
Comments :			
Appendix :	☐ Yes	☒ No	Pictures ☐ Yes ☐ No
			Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Grouted 5 Tertiary holes and low grout take (less than 100 L/stage) observed in all holes, which is good indication of secondary stage grouting.
- Grout bypass observed in 2nd stage of T453 & T441, in both cases the packer is raised by 1m and 2nd stage grouted in 5m stage and Stage 1 grouted as 1m stage.
- Crew received Transducers near the end of the Shift and Planning to install before the night Shift start grouting.
- Drilling rig was down whole day and only one hole is available for grouting unless they fix rig & move Drilling Dorn.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| - | Updated list of Tertiary holes and water pressure test holes sent to client and contractor as per client request. | |
| - | In the morning meeting contractor was reminded to send casing and drilling report on the daily basis. | |
| - | Contractor was reminded for the calibration of pressure gauge and flow meter but no action taken yet by contractor. | |

SPECIFIC ELEMENTS VERIFIED

Elements	Location	Scope and comments

SAFE AND SAFETY REMARKS

windy & slippery condition.
very cold weather.

Issued by :


Signature

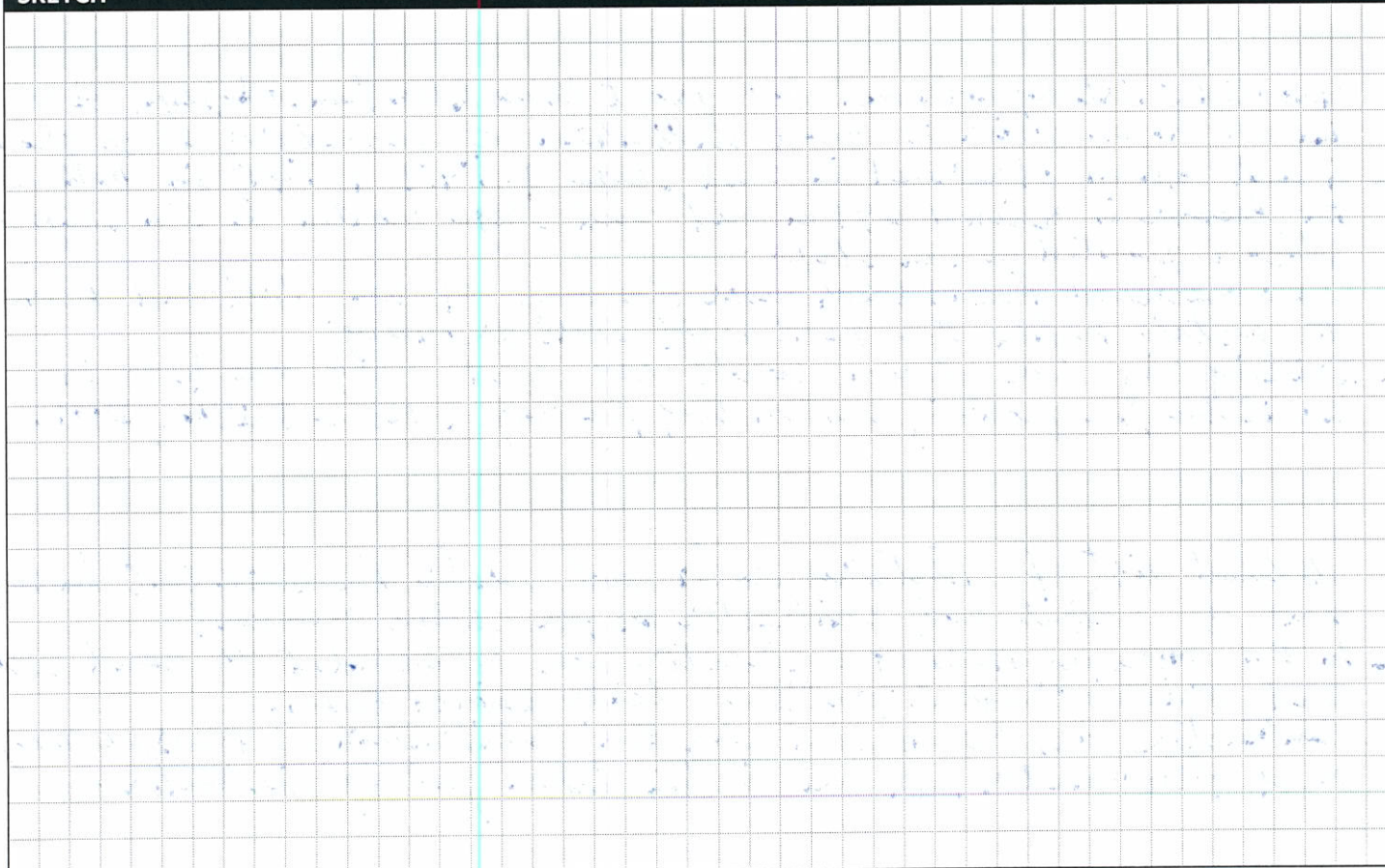
2019-01-08
Date

Verified by :

Signature

Date

SKETCH





SNC-LAVALIN

SITE REPORT
(Detailed)

20190109-NS-SR
Document number

2019-01-09 18:00/6:00 658309 M. JÉZÉQUEL
Visit date Time (Start/End) Project No. Prepared by
WTO CONSTRUCTION Agnico Eagle
Project Client
SNC-Lavalin KCG
Consultant Contractor

Weather : ☐ Sunny ☐ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze
Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -38 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☒ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- NO INJECTION ACTIVITIES, NO DRILLING ACTIVITIES (DRILL RIG IS STILL DOWN).
- QA WAS TOLD BY QC REPRESENTATIVE THAT HE GAVE VERBAL APPROVAL DURING DAY SHIFT OF JANUARY 8, 2019 FOR THE FOUNDATION APPROVAL OF A SECTION OF THE KEY TRENCH WHERE ROCKFILL MATERIAL IS GOING TO BE PLACED. STATIONS ARE NOT KNOWN BUT THE AREA IS AROUND THE EAST ABUTMENT AREA.
 - QA REQUESTS CROSS SECTIONS AT 5-m INTERVALS FOR EACH FOUNDATION APPROVAL TO BE PROVIDED BY THE CONTRACTOR IN ORDER TO EVALUATE THE FINAL KEY TRENCH DEPTH AS WELL AS LATERAL DIMENSIONS WHICH SHOULD MEET THOSE SHOWN ON THE DRAWINGS AS PER SPECIFICATIONS.

SITE GUIDELINES (guidelines, memos, modification proposals, etc)

- No Subject
- QA REVIEWED VERTICALITY DATA FROM KCG FOR TERTIARY HOLES AND FOUND DISCREPANCY BETWEEN SURVEYOR'S EXCEL SHEET AND RAW DATA SENT BY CONTRACTOR'S ENGINEER. KCG TO UPDATE THEIR EXCEL SHEET WITH CORRECT VERTICALITY (%) CALCULATIONS. THE SURVEYOR SHOULD INCLUDE THE OFFSET PERPENDICULAR TO DIKE ALIGNMENT AS WELL.
 - QA REVIEWED CASING DRILLING REPORT FROM JANUARY 7, 2019 AND IT WAS REPORTED THAT AT STATION 0+369 BEDROCK WAS ENCOUNTERED AT A DEPTH OF 13.5 m WHILE THE SURVEY DEPTH WAS 16.9 m. IT IS QA'S UNDERSTANDING THAT THIS DEPTH IS BASED ON THE DEPTH OF BEDROCK ENCOUNTERED BY THE DRILLING OF SETANT PILES; HOWEVER, THE DEPTH TO THE CLEANED LATERED (BATHYMETRY) AT THAT LOCATION IS ~12.6 m. NEVERTHELESS, SPECIAL ATTENTION SHOULD BE BROUGHT FOR THE DRILLING AND GROUTING PROCESSES OF THAT HOLE TO ENSURE THAT THE CASING IS PROPERLY ANCHORED INTO BEDROCK.

SPECIFIC ELEMENTS VERIFIED

Elements

Location

Scope and comments

SAFE AND SAFETY REMARKS

A FOX WAS SEEN ON THE ROAD: WATCH FOR WILDLIFE AND DRIVE CAREFULLY.

Issued by :



Signature

2019-01-09

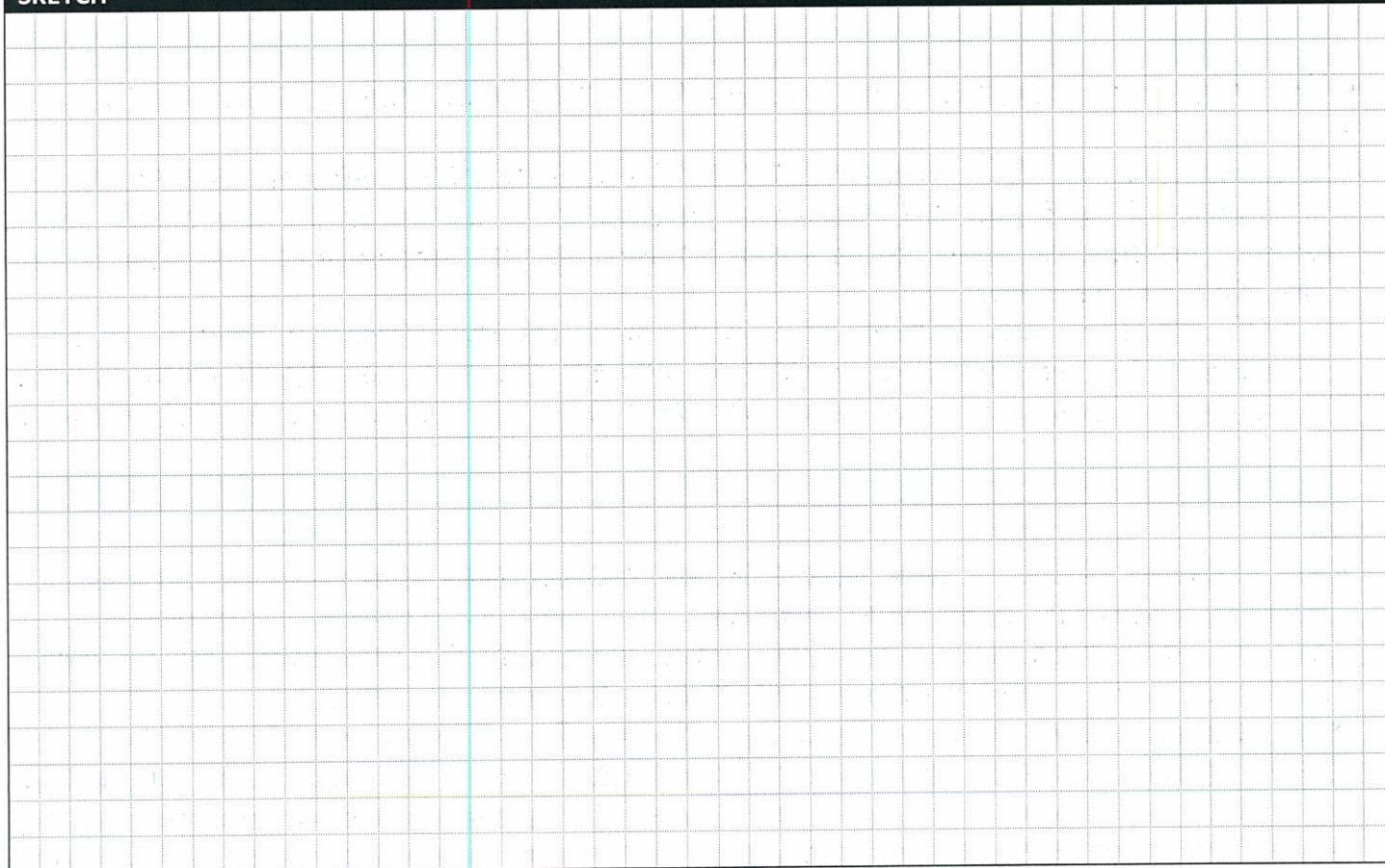
Date

Verified by :

Signature

Date

SKETCH





SNC • LAVALIN

SITE REPORT
(Detailed)

20190109-DS-SR

Document number

2019-01-09 | 6AM-6PM | 658309 | MUHAMMAD SALIEM

Visit date | Time (Start/End) | Project No. | Prepared by

WTD CONSTRUCTION | Agnico Eagle

Project | Client

SNC-Lavalin | KGC

Consultant | Contractor

Weather : ☒ Sunny ☒ Cloudy ☐ Rain ☐ Storm ☐ Snow ☐ Glaze

Wind : ☐ None gusts ☒ Light ☐ Moderate ☐ Strong, Temperature : -27 °C

Comments :

Appendix : ☐ Yes ☒ No Pictures ☐ Yes ☐ No Inspection report or other :

ACTIVITIES PERFORMED BY SNC-LAVALIN (indicate if test forms were used)

- Drilling Rig Back in action After lunch today.
- T429 Completed in the morning with stage 3 took 871L grout.
- T423 2 stages grouted stage 3 took 661L grout.
- Contractor will start Backfilling casing during night shift. They do not have Bentonite on site, they will use MCLB grout for Backfilling. Advised contractor to use Tremie Pipe for casing Backfilling.
- Contractor don't have Colbex on site so they are not using Colbex anymore. Talk to Contractor, they said Client don't want to buy Colbex.

SITE GUIDELINES (guidelines, memos, modification proposals, etc.)

- | No | Subject | Given to |
|----|---|----------|
| - | Contractor was asked to include the offset $\perp$ to dike alignment in the casing inclination report. | |
| - | Performed Flowmeter Calibration by filling graduated bucket to 15L and compared with Volume from computer screen. Flowmeter found good. | |
| - | Also perform calibration of flowmeter attached to mixing Tank and found good. | |
| - | Computer acquisition system not fixed yet. | |