# CONSTRUCTION SUMMARY REPORT
# NORTH CELL DIVERSION DITCHES
# 2012

## AGNICO EAGLE MINES LIMITED
## MEADOWBANK GOLD PROJECT

**REPORT ISSUED**

**JULY 27TH, 2013**

AGNICO EAGLE
MEADOWBANK

# EXECUTIVE SUMMARY

The diversion ditches are composed of two channels having a total length of 2,622 meters. The East Diversion Ditch discharge point is located at the shore of the NP1 Lake and the West Diversion Ditch discharges into the 3rd Portage Lake.

Work carried out during construction of the Diversion Ditches included excavation of soft sediment and bedrock, rock fill placement for slope stability and culverts installation under Vault Road and All Weather Private Road. This construction report issued by AEM presents the general construction procedure for this project.

Design of the channel was preceded by a hydrological study. These two tasks were performed by Golder Associates. Some modifications to the design were made by AEM and are included in the construction package.

# DOCUMENT CONTROL

| Document Version | Date | Revised Section | Revision |
|---|---|---|---|
| Draft | 2013-06-25 | All | Kevin Buck |
| Final | 2013-07-27 | All | Erika Voyer, Ing., Julie Belanger, P.Eng. |
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# CONSTRUCTION SUMMARY REPORT
# NORTH CELL DIVERSION DITCHES

## SECTION 1.0 - INTRODUCTION

The diversion ditches are composed of two channels having a total length of 2,622 meters. The East Diversion Ditch (ED) discharge point is located at the shore of the NP1 Lake and the West Diversion Ditch (WD) discharges into the 3rd Portage Lake.

The diversion ditches are essential to prevent runoff water to from filling up the North Cell tailings storage facility. Watersheds located to the North of these channels cover a total area of 2.15 $km^2$ with an average year total precipitation of around 485 000 $m^3$. These ditches will maximize the capacity of the North Cell tailings storage facility.

The North cell diversion ditches are designed and constructed to minimize erosion of the structure and also the lake bed at the ditch discharge point. The North cell diversion ditches include lake inlet and outlet structures to minimize impact on the NP2, NP1-N, WS-22 and 3rd Portage Lakes.

Work carried out during construction of the Diversion Ditches included excavation of soft sediment and bedrock, rock fill placement for slope stability and culverts installation under Vault Road and All Weather Private Road. This construction report issued by AEM presents the general construction procedures for this project.

## SECTION 2.0 - SCOPE

This construction summary report presents an overview of the general construction procedure for the Diversion Ditches conducted between July 2012 and October 2012 at Meadowbank. A review of the design and technical specifications is presented, followed by the construction schedule and description of construction activities. The field modifications and adjustments during construction are then presented.

## SECTION 3.0 - DESIGN AND TECHNICAL SPECIFICATIONS

Design and Technical Specifications were created by Golder prior to the start of the Diversion Ditches construction and are described in the following subsections. Plan view and typical sections from the original design are available in Appendix A.

### 3.1 DITCHES ALIGNMENT

A conceptual plan for the diversion ditches, presented in Appendix F, was developed in consultation with Golder. The two proposed ditches are the Western diversion (WD) discharging into Third Portage Lake and the Eastern diversion (ED) discharging into NP1-N Lake. The ED connects the following three lakes together: WS22, NP2 and NP1-N. Since the establishment of the waste dump, the NP2 lake level has raised due the natural discharge of the lake is blocked by the waste dump. NP2 Lake and the waste dump were now connected and some sediment

issues occurred. To avoid this problem the ED was designed to lower the NP2 water level to its average level before beginning the mining operation.

### 3.2 HYDROLOGY STUDIES

Golder proceeds with the evaluation of the design flow by going over the hydrology study of the mine site. The watershed located to the North of the North Cell Tailings Pond was divided into sub-drainage basins to correctly split annual precipitation in the two ditches. The diversion system was designed to collect and convey surface water runoff during precipitation events in accordance with the Meadowbank Water Management Plan (Golder, 2011). The design event is defined as:

- The summer rainfall event with 100-yr return period and 24-hr duration: 74.7 mm(EC 2011); plus the
- The 24-hr snowmelt corresponding to the average year spring melts (126 mm) over 30 days (Golder, 2011).

### 3.3 DITCHES TYPICAL SECTIONS

Golder designed several typical sections with a till berm to divert the water. The minimum side slopes were set at 3:1, the minimum bed slope at -0.35% and rip-rap $D_{50}$ change as a function of the flow velocity. The main objectives were:

- Minimize the volume of excavation required;
- Easy construction at any period of the year, as they will only require compacted fill and no blasting and/or excavation;
- Less potential impact to the permafrost; and
- Reduced risk of soil instability.

### 3.4 CULVERT

Golder designed the two culverts needed for the stream road crossings. On the ED, the stream needs to cross the Vault Road. One unique thing about this culvert is that there is a lake on each side of the culvert. This culvert is located between NP2 and NP1-N. The proposed Vault road culvert diameter is 1500 mm with a 2.5% slope and an approximate length of 40 m. On the other side, the WD culvert crosses the All Weather Private Road (AWPR). The culvert diameter is 1500 mm with a slope of 2.0% and an approximate length of 25 m. The ED culvert design flow has been set at 2.9 and 4.8 $m^3/s$ for the WD culverts.

## SECTION 4.0 - DIVERSION DITCHES CONSTRUCTION ACTIVITIES AND DESCRIPTION OF THE WORK

The scope of work for the construction of the Diversion Ditches conducted from July 2012 to October 2012 consists of activities in the following major work items:

- Drilling investigation
- Access roads
- East Diversion Ditch (ED)
    - Vault Road Culvert
    - NP1 Inlet

    - Ditch Construction
    - NP2 Outlet
    - WS22 Outlet
- West Diversion Ditch (WD)
    - AWPR Construction
    - Ditch Construction
    - 3rd Portage Lake Inlet
    - WS11 Dam

These items are discussed in the following sections below.

Selected photographs taken throughout the construction program showing various aspects of the construction work are available in Appendix B.

## 4.1 DRILLING INVESTIGATION

In March 2012, a drilling investigation campaign was done. The objective was to identify the elevation of the bedrock under the projected ditches. A suggested alignment was provided by Golder. A Tamrock drill was used to complete this drilling campaign. When the drill hit the bedrock, the driller would note the bedrock elevation. One hole every ten meters was drilled for a total of 279 holes. This information has been used for the design of the ditches to limit the drilling and blasting.

## 4.2 ACCESS ROADS

The first step of the construction was to build access roads all along the ditches to bring proper equipment to the construction site. More than 5.6 km of roads were built. The average road height is 1m and 10 m wide. 1.4 km of this access road surrounds the tailings pond. On the North side of the tailings pond, there's an average gap of 90 m between the ditch and the tailings pond. The material used for the access road construction classified as non-potentially acid generating (NPAG) waste rock. This material has been hauled from the NPAG Portage area waste dump to the construction site. This decision was made to reduce hauling time and to be independent of mine operations due to the limited availability of NPAG waste rock in the pit at the time of the construction.

## 4.3 EAST DIVERSION DITCHES

The project started with the construction of the ED. The excavation of the Vault Road was the first step. This decision was made because there was no traffic on this road during this time of the year and the timing was good for the installation of the culvert.

The strategy was to start the construction at the outflow of the ED to always drain the water by gravity behind the construction site. This ditch will handle annual average precipitation of 500 000 $m^3$ so around 80% of the total flow for the entire structure. The construction procedure of the ED will be explained in detail for each specific part of the construction.

### 4.3.1 Vault Road Culvert

Once the access roads were built, the excavator moved to Vault Road and started the excavation of this structure. The permafrost was hit quickly and the Tamrock drill was dispatched to the construction site to start drilling. Culverts location was targeted at 6.0 m below the top elevation of Vault Road. The road was blasted to complete the excavation. Blasted rock was kept near the construction site to complete the embankment of the culvert.

After the excavation of the blasted rock, channel faces were exposed to the sun and the permafrost layer started to melt quickly. All the frozen till layers started to sludge into the bottom of the channel. Water was pumped out on the tundra at least 30 m away from the lake shore and mud was moved out of the construction site.

Culvert installation was also delayed by the blast beside the culvert. The blast upstream of the culvert did not achieve the required fragmentation and it was necessary to blast again before starting the installation of the culverts.

The culverts were sitting on a 0.3 m thick 0-19 mm granular material layer and covered with a 0.3 m layer. The 0-150 mm was compacted with a plate compactor in 0.3 m layers. Then the culverts were covered by compacted NPAG waste rock.

After breaching the NP2 Lake some water started running through the channel and reached the culvert. However, the flow was not running through the culvert but instead seeping into the culverts aggregate bed. Some modifications were made on the culvert embankment to direct the flow into the culverts. A till patch of 0.3 m was added all around the culvert and covered by a geo-membrane, 0.3 m layer of 0-19 mm aggregate and the proper NPAG rock embankment. These corrective actions ensured the flow to run through the culverts, however, some water was still running under them.

### 4.3.2 Drill and Blast

The construction strategy at the beginning of the project was to excavate the unfrozen ground and let the sun melt the till to limit the drill and blast. This strategy was not a success. Drill patterns were always covered by at least one foot of mud and it was difficult for the drill helper and blaster to do their jobs properly. The first blasts of the project were not efficient and lot of boulder needed to be re-blasted. The start-up of the project was difficult and costly.

The mud over the blast pattern reduced the efficiency of the operation. A construction sequence was developed to improve the drilling rate. One blast was scheduled every two days. At the beginning of the day shift, the excavator cleaned the mud over the blast pattern. Then the surveyor staked all the drill holes for the shift. At the end of the day shift, the excavator and the surveyor repeated the process to prepare the blast pattern for the night shift crew. Also when a blast was performed, the surveyor needed to survey the loaded holes at the beginning of the shift and sent the data to the engineering crew. This procedure had a positive impact on the drilling rate.

Blast patterns were designed by the Meadowbank Engineering Team in accordance with the Mine Act. Holes were surveyed by the mine surveyors, the drilling was executed by the contractor Sana and drill holes were loaded by the mine blasters. The construction site was not very close to the mine operations and some delays occurred because the mine surveyor needed to prioritize mine production. To increase drilling rate, the responsibility of the blast survey was transferred to the contractor surveyors. These modifications to the roles and responsibilities improved the global construction rate.

At the end of September 2012, engineering department established standards for drill and blast operations. A loading plan and blast timing guidelines were provided to drillers and blasters. These tools reduced the time needed for blast pattern designs. Guidelines are presented at the Appendix C.

### 4.3.3 Ditch Construction

Once the culvert was installed, the construction team was split in two. The drill crew prepared the blast pattern ahead while the excavation crew moved the blasted muck out of the channel. An average of two 50 tons haul trucks and one and a half excavators were performing the job. Haul trucks where hauling the blasted material out of the construction site and good construction material on his way back. One excavator was mucking out the blasted material and the other one placing embankment material at the bottom of the ditch. Surveyors were giving grades for embankment a couple of time per shift.

Unsuitable material – overburden and rock mixed with till – was hauled to the waste dump to prevent turbidity at the ditch outflow during the next freshet. Clean NPAG material coming from the Portage Pit was used in this case. The average channel side slopes were 2:1 with a channel bed width of 2 m. ED has been split in 3 sections:

- ED1: Section located between NP1-N Lake and NP2 Lake;
- ED2: Section located between NP2 Lake and WS22 Lake; and
- ED3: Section located to the north of the WS22 Lake.

All these sections have been divided in sub-sections of same channel bed slope. The following table summarizes the average bed slopes all along the East diversion ditch.

**Table 1: East diversion ditch bed slope analysis**

| Section | Sub-section | Length (m) | Slope (%) |
|---|---|---|---|
| ED1 | ED1-A | 175.6 | 1.34 |
| | ED1-B | 42.5 | 2.47 |
| | ED1-C | 40.2 | 4.02 |
| ED2 | ED2-A | 138.9 | 1.56 |
| | ED2-B | 66.8 | 3.79 |
| | ED2-C | 520.2 | 0.49 |
| | ED2-D | 19.9 | 1.42 |
| | ED2-E | 44.7 | 2.36 |
| ED3 | ED3-A | 414.5 | 0.48 |
| Total | | 1463.3 | 1.07 |

#### 4.3.3.1 East Diversion Ditch Section 1

This section was the largest channel of the project because it is located downstream of all the diverted watershed and goes through the hill between the NP1-N and NP2 lakes. The channel width is close to 30 m in this area. When work started in this area, construction rates were really low. Construction sequence was not efficient, definition of the roles and responsibilities needed to be clarified, and the needed volume of material per meter of advancement was the biggest in this part of the project.

#### 4.3.3.2 East Diversion Ditch Section 2

The main feature of this section is the 520 m ditch with a 0.49% bed slope. This section of the ditch surrounds a hill and goes through one of the main watershed channels. Drill and blast went fast for this section. It took a couple of weeks before the overburden was excavated. When the drill arrived in this area the excavated layer was filled up with surface water. Water prevents the permafrost to melt down deeper and the bedrock was also closer to the surface. Water was pumped out of the drill patterns and drilling operation resumed.

#### 4.3.3.3 East Diversion Ditch Section 3

The ED3 was an average of one meter deep. No drill and blast was needed to reach the channel bed elevation. Slope embankment was completed afterwards overburden excavation.

### 4.3.4 NP1-N Inlet

Lake inlets are critical parts of the construction because they are the last structure before the lake and prevent lake shore erosion by the effluent flow. This section of the ED is also strongly sloped. The average bed slope is around 4%. The NP1-N inlet has been designed to slow down flow velocity with a meanders alignment to reduce flow velocity. The shore of the lake was protected with boulders placed on the channel bed and NPAG rock was placed on the lake bed near the channel discharge to prevent erosion of the bottom of the lake.

### 4.3.5 NP2 Outlet

The NP2 outlet was the most important outlet of the project. As detailed in the section 3, NP2 Lake water level rose up since the beginning of the mine activity. To prevent this phenomenon, the channel bed elevation has been set up at the initial lake elevation of 141.16 m.

The NP2 outlet construction has been done in several phases because the lake water level was at 142.56 m.

1- A basin has been raised up inside the channel to slow down water flow velocity during the lake breaching.
2- NP2 Lake breached and the water level dropped by 0.3 m.
3- The basin was not efficient enough to settle down sediment into the water flow. Turbidity barriers were added at the NP1-N inlet to help sediment to settle down.
4- NP2 Lake was breached again and the level dropped another 0.3 m.

5- Inspection of the breaching operation was completed in order to avoid increasing the turbidity inside the NP1-N Lake until the lake reach the elevation 141.16 m. Three breaches were needed.
6- Finally embankment of the NP2 lake shore was performed.

#### 4.3.6 NP2 Inlet

No meanders channel was set up at the NP2. The ditch path goes straight to the lake. Boulders have been put at the bottom of the channel bed to prevent erosion of the shore and turbidity barriers installed near the shore.

#### 4.3.7 WS22 Outlet

Construction of the WS22 outlet was much easier to perform. WS22 Lake was smaller than the NP2 and there was no water elevation issue. Only one breach of 0.30 m was needed. The ditch is so long that the water flow did not increase turbidity level into the NP2 Lake.

### 4.4 WEST DIVERSION DITCHES

Second part of the project was the WD. Construction started with the installation of the Vault Road Culvert while the work for the ED was still on-going. This ditch will handle annual average precipitation of 120 000 m³ so around 20% of the total flow for the entire structure.

The strategy was to start the construction at the outflow of the WD to always drain the water by gravity behind the construction site. The construction procedure of the WD will be explained in detail for each specific part of the construction.

#### 4.4.1 AWPR Culvert

Before installing the AWPR culverts, the bypass road was raised around the construction site to reduce impact on traffic between Baker Lake and the mine site. The two corrugated steel culverts were installed over the overburden to reduce the infiltration of water in the road foundation. No blasts were needed to reach the proper elevation for the installation of the culvert. 0.3 m layer of compacted 0-19 mmaggregate surrounds the culvert as for the Vault culvert. By setting the elevation of the channel has high as possible all the WD channel elevation was set in function of this decision.

#### 4.4.2 Ditches Construction

The WD follows mostly the alignment of the existing access road of the north cell tailings pond storage facility. Construction follows the same sequence then the one established during the ED construction. The table below presents the average slope all along the channel.

**Table 2: West diversion ditch bed slope analysis**

| Section | Sub-section | Length (m) | Slope (%) |
|---|---|---|---|
| WD | WD-A | 964.2 | 0.23 |
| | WD-B | 140.3 | 6.00 |
| | WD-C | 85.3 | 1.50 |
| | WD-D | 5.29 | 15.00 |
| Total | | 1159.1 | 1.10 |

The sub-section WD-A of 964.2 m is the longest of the project. The ditch starts at the toe of the WS21 diversion structure. On 250 m no drill and blast operation was required. Natural topography around this sub-section of the WD increases surface water inflow velocity and channel is also small in this area. These two characteristics increase risk of seepage through the ditch cross-section and seepage into the North cell tailings storage facility. Special attention during the freshet period inspection will be required.

For the last 200 m of the sub-section B, the ditch is deeper because the topography reaches elevation 154 m. A major blast was needed in this area located near the Saddle dam 1 (SD1). Around one foot of stemming as well as several blasting mats were laid down over the blast pattern as preventive measures to protect SD1 from fly rock during the blast. Even with these preventive measures a lot of fly rocks hit the SD1 and pierced the dam membrane. Around 200 holes have been identified. Liner contractor came on site rapidly after the event to fix the holes in the membrane. Each hole has been repaired individually with a patch in November 2012. This incident was caused due to the non-conform loading operation. There was probably too much emulsion in the drill holes and the stemming column was too small.

The WD sub-section D did not require drilling and blasting. Average slope of the topography in this area was 15%. Overburden was excavated partially and followed by the proper embankment operation. Boulders were placed over the channel bed to reduce the water flow velocity and installation of sediment barriers and turbidity curtains inside the 3PL was done to prevent sediment dispersion into the lake.

### 4.4.3 WS21 Diversion Berm

The last step of the construction was the WS21 diversion berm. The access road in this area was extended to the hill and overburden excavated. 0.3 m of clean till was laid down on the road slope to seal it and to prevent water infiltration into the North Cell tailings storage facility. Finally, the till layer was covered by rip rap placed by the excavator to avoid erosion of the till layer.

## SECTION 5.0 - CONSTRUCTION SCHEDULE

Construction of the North cell diversion ditches was carried out between July 2012 and November 2012 at Meadowbank. The final construction schedule is available in Appendix D and summarized as follows:

- Construction of the access road started on July 4th to July 29th.
- Vault culverts installation began on July 30th. This operation included stripping of the Vault road, drilling, blasting and excavation of the Vault road. Installation of the culvert and rock filling operation was completed on August 16th.
- East diversion ditch construction started during that time on August 4th with the drilling of the first blast pattern. Construction of the ED was completed on September 10th.
- NP1-N inlet started on August 14th to August 17th.
- NP2 Lake outlet construction and breaching occurred between August 24th and September 17th, while the NP2 Lake inlet construction follows up on September 13th.
- WS22 Lake outlet construction and breaching started on October 17th and 20th, respectively.
- Construction of the west diversion ditch started September 29th and was completed on October 23th.
- Vault road culvert installation start on September 27th to October 3th.
- WS21 diversion berm was raised up between September 17th and 21st.

## SECTION 6.0 - FIELD MODIFICATIONS AND ADJUSTMENTS DURING CONSTRUCTION

Four field modifications were decided by AEM to the proposed design and technical specifications issued by Golder during construction. The modifications are summarized below.

### 6.1 EAST DIVERSION DITCH ALIGNMENT

The channel alignment was modified to leave enough room at the North end of the waste dump for the extension of the NPAG waste dump. The channel was moved 10 m to the North. This modification moved the channel to a deep spot and consequently increased the excavation and the drilling needed to complete this part of the ED. The minimum channel bed slope did not change. To limit the excavation cause by this deep spot, the channel side slope changed from 3:1 to 2:1.

### 6.2 RIP-RAP $D_{50}$

There was no way to get NPAG material with the required $D_{50}$ on site and the only NPAG material available in good quantity was soap stone that did not meet the particular size requirement from the design. It was judged acceptable to use the NPAG soap stone to build the channel embankment. All the soap stone was compacted with the excavator bucket. Field observations during the freshet will be made to observe the stability of the structure. An average layer of 0.5 m thick has been used for the channel slope embankment.

### 6.3 WEST DIVERSION DITCH BED SLOPE

The elevation of the AWPR culverts was designed to reduce the infiltration of water under the culvert and to reduce the risk of washing out fine material under the road. Infiltration of water under the road could damage the foundation of the road and reduce the stability of the road. After Vault culvert installation, water infiltration under the culvert bed has been noticed on the field. The decision was made to install the culvert on the overburden as mentioned above. This decision results to change the bed slope of the west diversion ditch sub-section to 0.23%. This

slope is lower than the one recommended in the design. However, it was a design criteria asked by AEM to Golder. Bed slopes of 0.25% are common in civil engineering especially when there is no restriction to the flow such as vegetation growing in the channel bed.

### 6.4 CULVERTS DIAMETER

The proposed culvert size by Golder was not available on site during the construction. AEM decided to use two 1200 mm culverts instead of one 1500 mm culvert for the ED and two 1200 mm culverts instead of one 1800 mm for the WD.

## SECTION 7.0 - OPERATION AND MONITORING

### 7.1 SPRING SNOW REMOVAL

This operation is to ensure culverts are not buried under the snow before freshet to make sure water could flow through. Deepest section of the ditches should be also cleaned up. Backhoe operator must avoid reaching the channel bed during snow removal operation. Some snow should stay at the bottom of the ditch and over channel slope.

### 7.2 INSPECTION

Inspection of the ditches must be performed on a monthly basis to evaluate the condition of the channel. One visit every two days during freshet and daily inspection when precipitation exceeds 10 mm of rainfall in a 24-hours period is recommended (Golder, 2012). Check for damage to the channel slope embankment and for water accumulation in the ditch. It is really important that the channel drains by itself. Ponding will increase the chance of seepage through the slope embankment.

### 7.3 MAINTENANCE

Maintenance of the ditch consists of removing obstructions that could interfere with the water flow and reduce the efficiency of the channel and prevent water accumulation, channel overflow and road washout. Work on the channel embankment should be performed after spring freshet and couple of days following a big rain event to prevent erosion and accumulation of suspended solid into the water flow (EPA, 2000).

## SECTION 8.0 - SUMMARY AND CLOSURE

The North cell diversion ditches were constructed from July 2012 to October 2012. The work was completed by SANA under the supervision of AEM. The initial design and technical specifications has been issued by from Golder and this Construction Summary Report by AEM.

The North cell diversion ditches construction review and documentation confirm that earthworks construction, including excavation and slope embankment was completed in general compliance with the Technical Specifications and Design elaborated by Golder. During the course of the work, four (4) field modifications from the original design were incorporated to take advantage of existing site conditions and to optimize construction activities.

A monitoring program is essential to ensure the Diversion Ditches state, including regular site visits, especially after storm event and during the spring freshet.

## SECTION 9.0 - BIBLIOGRAPHY


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Golder, 2012 – Detailed Design Memorandum For Surface Water Diversions Along The Northern Perimeter Of The Mine Site, Meadowbank Gold Project, Nunavut (Golder Associates Ltd., July 2012)

EPA, 2000 – Recommended Practices Manual: A Guideline for Maintenance and Service of Unpaved Roads, Chapter 2, http://water.epa.gov/polwaste/nps/urban/upload/2003_07_03_NPS_unpavedroads_ch2.pdf, © EPA: (June 9th, 2013)



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# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

## APPENDIX A

## AEM REVIEWED DESIGN

AGNICO-EAGLE MINES LIMITED

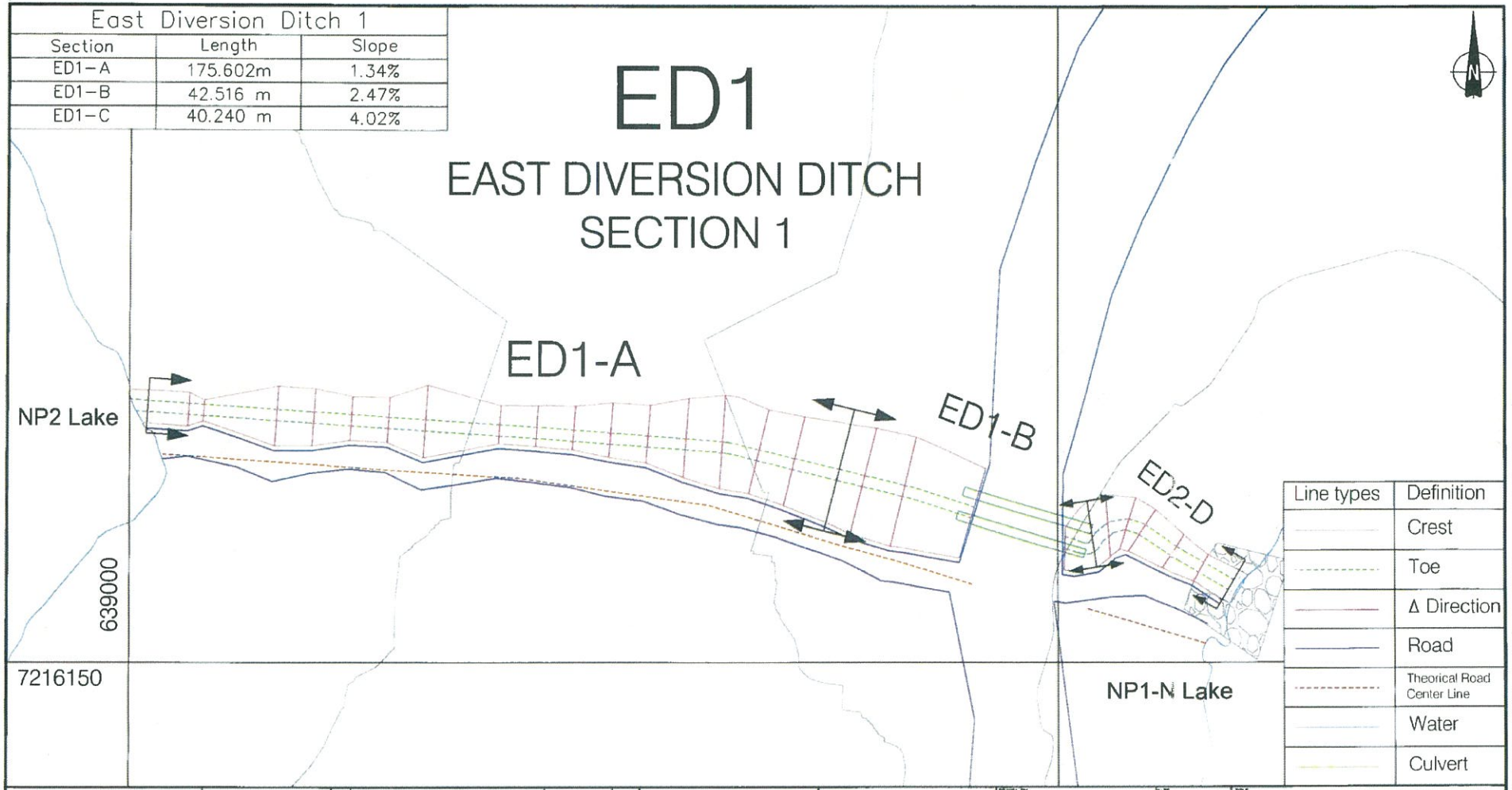
MEADOWBANK GOLD PROJECT

FORMAT ANSI B – LANDSCAPE

| East Diversion Ditch 1 | | |
|---|---|---|
| Section | Length | Slope |
| ED1–A | 175.602m | 1.34% |
| ED1–B | 42.516 m | 2.47% |
| ED1–C | 40.240 m | 4.02% |

# ED1

## EAST DIVERSION DITCH SECTION 1




| Line types | Definition |
|---|---|
| | Crest |
| | Toe |
| | Δ Direction |
| | Road |
| | Theorical Road Center Line |
| | Water |
| | Culvert |

| TITLE | # DWG | REV | DESCRIPTION | DATE | BY |
|---|---|---|---|---|---|
| REFERENCE DRAWINGS | | REVISIONS | | | |

REGISTERED PROFESSIONAL ENGINEER J. BELANGER LICENSEE NUNAVUT

AGNICO-EAGLE

| | | |
|---|---|---|
| DRAWN BY | JMATTE | DATE 19-05-2013 |
| CHECKED BY | T.LEPINE | 19-05-2013 |
| APPROVED BY | J. Belanger | 20-06-2013 |
| PROJECT NO. | | |
| DATE | 19-05-2013 | |

TITLE AGNICO-EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES
AS-BUILT
EAST DIVERSION DITCH 1

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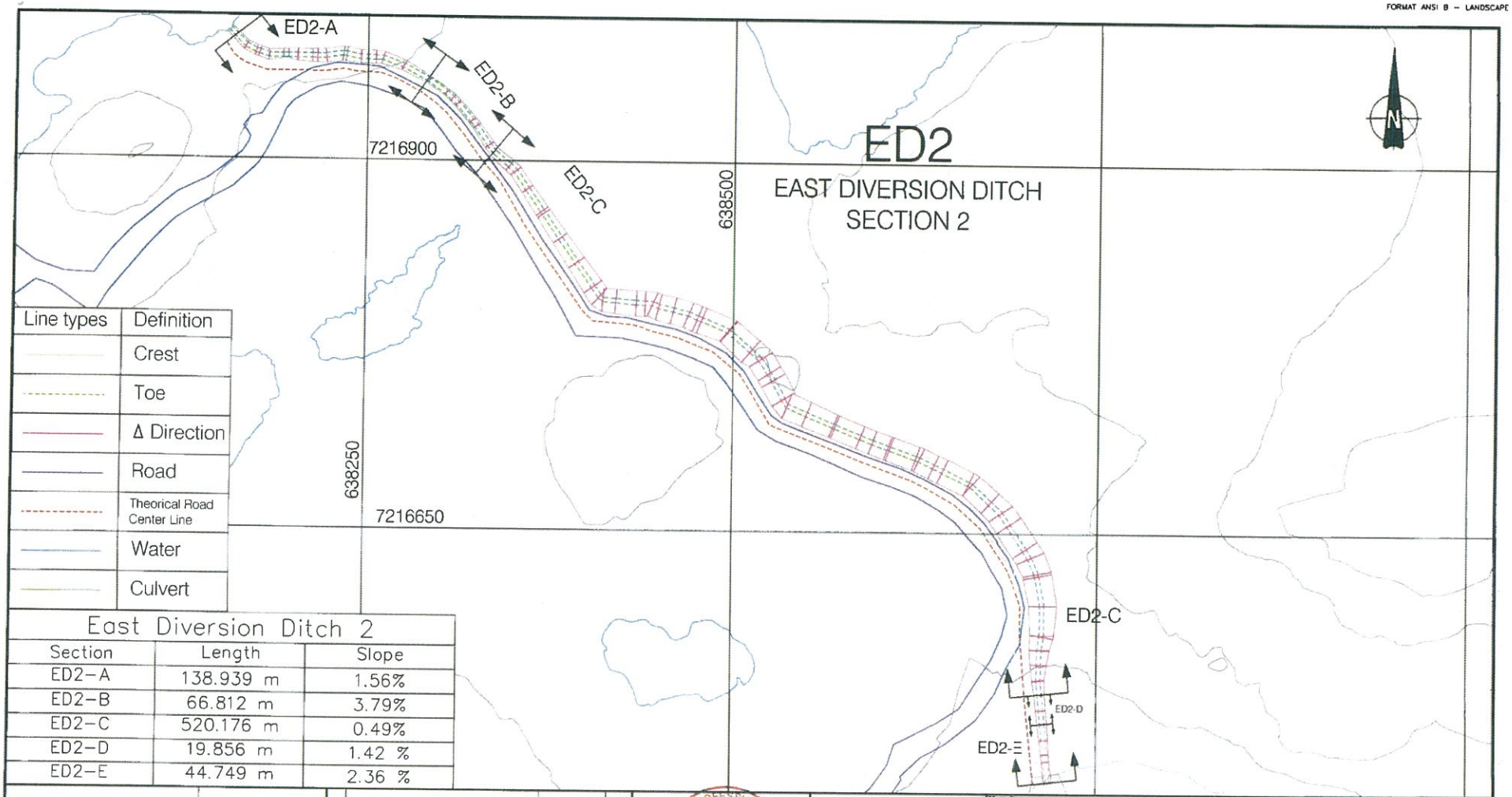
FORMAT ANSI B – LANDSCAPE




| Line types | Definition |
|---|---|
| | Crest |
| | Toe |
| | Δ Direction |
| | Road |
| | Theorical Road Center Line |
| | Water |
| | Culvert |

East Diversion Ditch 2

| Section | Length | Slope |
|---|---|---|
| ED2–A | 138.939 m | 1.56% |
| ED2–B | 66.812 m | 3.79% |
| ED2–C | 520.176 m | 0.49% |
| ED2–D | 19.856 m | 1.42 % |
| ED2–E | 44.749 m | 2.36 % |

| TITLE | # DWG |
|---|---|
| REFERENCE DRAWINGS | |

| REV | DESCRIPTION | DATE | BY |
|---|---|---|---|
| REVISIONS | | | |

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| | | |
|---|---|---|
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| APPROVED BY | J. Belanger | 10-06-2013 |
| PROJECT NO. | | |
| DATE | 19-05-2013 | |

TITLE: AGNICO-EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES
AS-BUILT
EAST DIVERSION DITCH 2

SCALE 1:2500 | FILE .DWG

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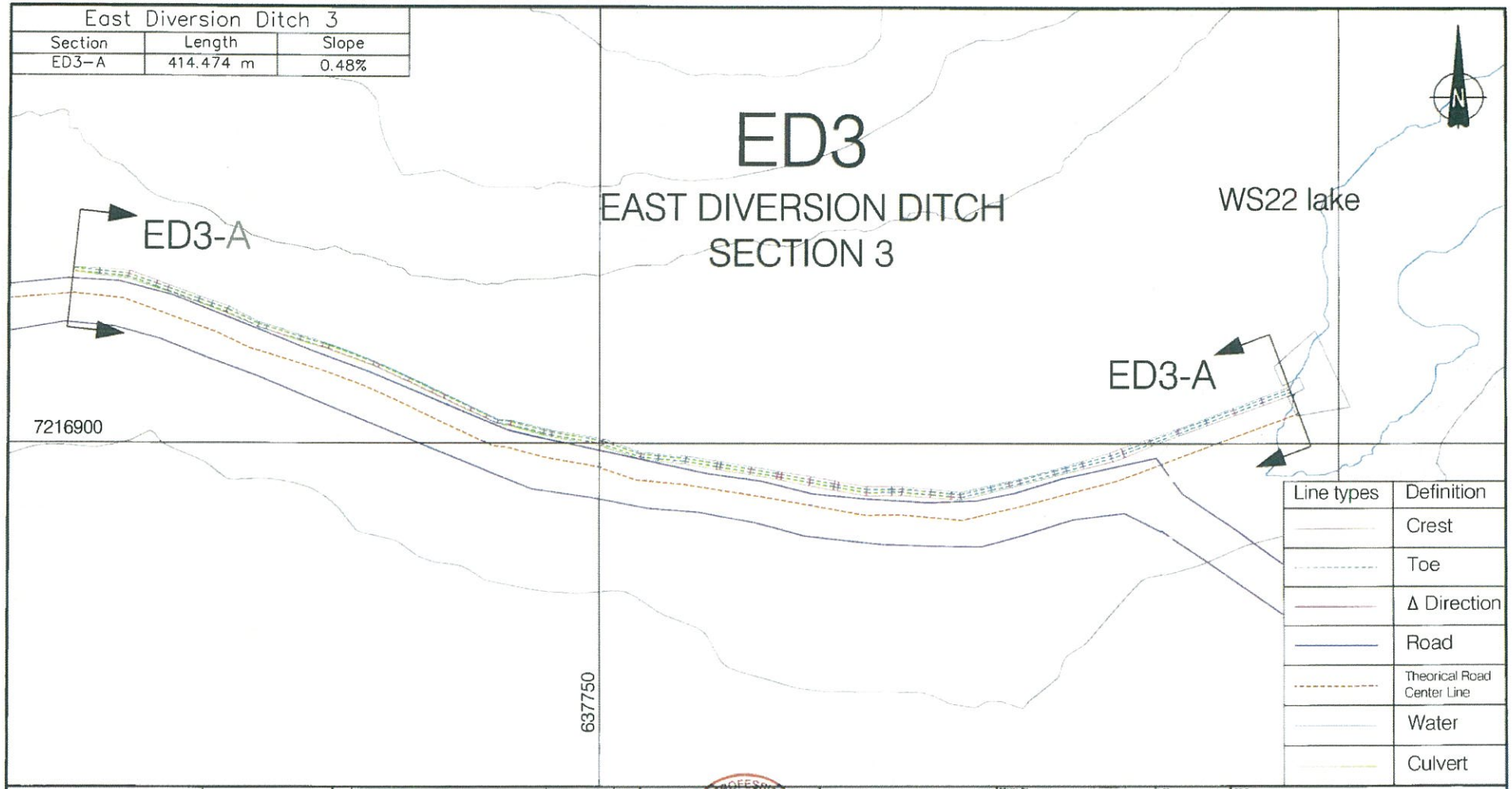
FORMAT ANSI B - LANDSCAPE

| East Diversion Ditch 3 | | |
|---|---|---|
| Section | Length | Slope |
| ED3-A | 414.474 m | 0.48% |




| Line types | Definition |
|---|---|
| | Crest |
| | Toe |
| | Δ Direction |
| | Road |
| | Theorical Road Center Line |
| | Water |
| | Culvert |

| TITLE | # DWG | REV | DESCRIPTION | DATE | BY |
|---|---|---|---|---|---|
| | | | | | |

REFERENCE DRAWINGS

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
J. BELANGER
LICENSEE
NWT/NU

AGNICO-EAGLE

| | | |
|---|---|---|
| DRAWN BY | J. MATTE | DATE 19-05-2013 |
| CHECKED BY | T. LEPINE | 19-05-2013 |
| APPROVED BY | J. Bélanger | 20-06-2013 |
| PROJECT NO. | | |
| DATE | 19-05-2013 | |

TITLE
AGNICO-EAGLE - MEADOWBANK DIVISION

DIVERSION DITCHES
AS-BUILT
EAST DIVERSION DITCH 3

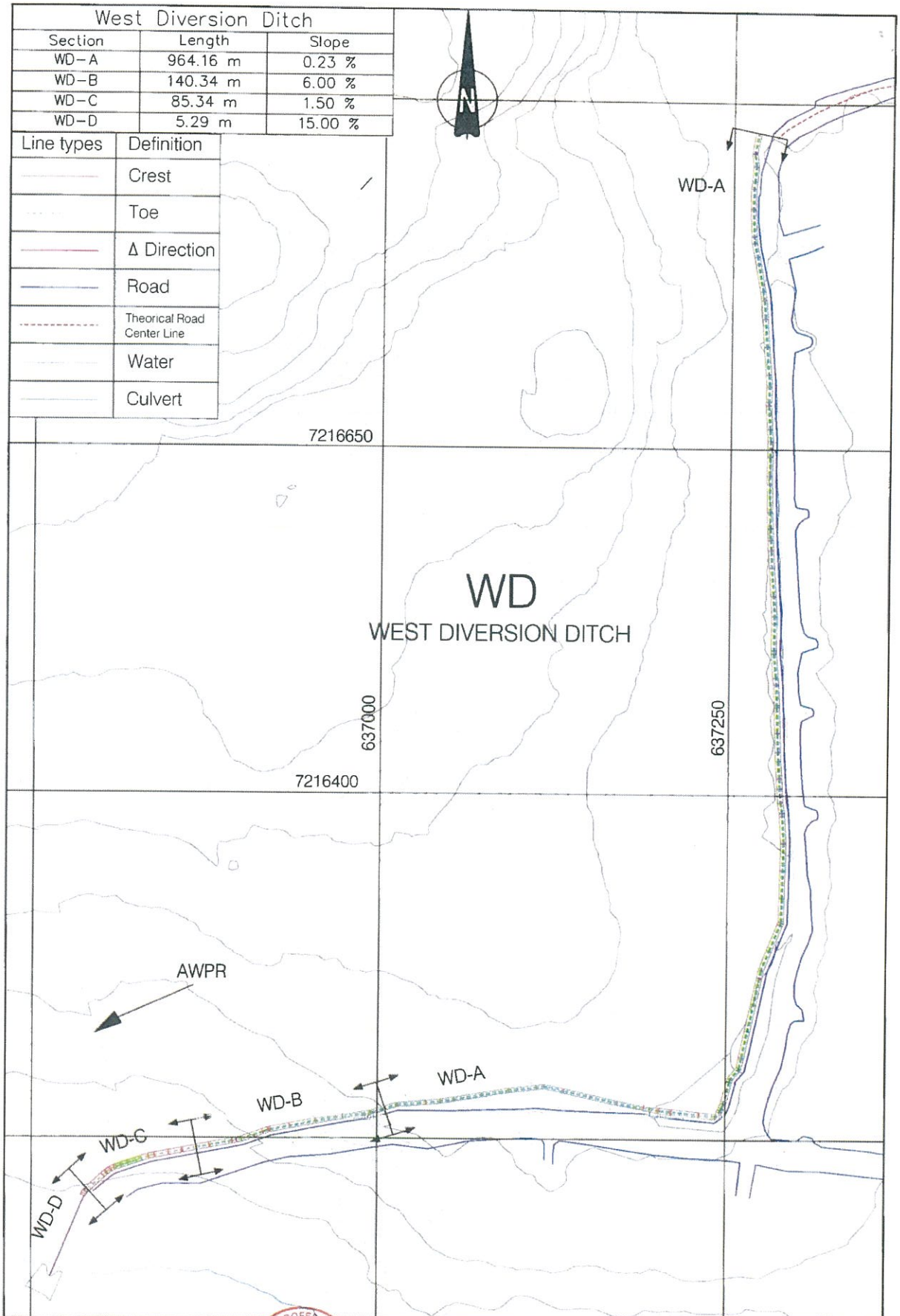
SCALE 1:1250 FILE .DWG

DRAWING NO. REVISION SHEET 4 / 5

X:\Diversion Ditches\As-Built\CAD\JMatte - Diversion ditches\Diversion ditches - AEM As-Built.dwg, 19 May 2013

| West Diversion Ditch | | |
|---|---|---|
| Section | Length | Slope |
| WD-A | 964.16 m | 0.23 % |
| WD-B | 140.34 m | 6.00 % |
| WD-C | 85.34 m | 1.50 % |
| WD-D | 5.29 m | 15.00 % |

| Line types | Definition |
|---|---|
| | Crest |
| | Toe |
| | Δ Direction |
| | Road |
| | Theorical Road Center Line |
| | Water |
| | Culvert |




| REV | DESCRIPTION | DATE | BY |
|---|---|---|---|
| | | | |

REVISIONS

REGISTERED PROFESSIONAL ENGINEER J. BELANGER LICENSEE NWT/NU

AGNICO-EAGLE

| | | |
|---|---|---|
| DRAWN BY | J.MATTE | 19-05-203 |
| CHECKED BY | T.LEPINE | 19-05-203 |
| APPROVED BY | J. Belanger | |
| PROJECT NO. | | |
| DATE | 19-05-2013 | |

TITLE: AGNICO-EAGLE – MEADOWBANK DIVISION

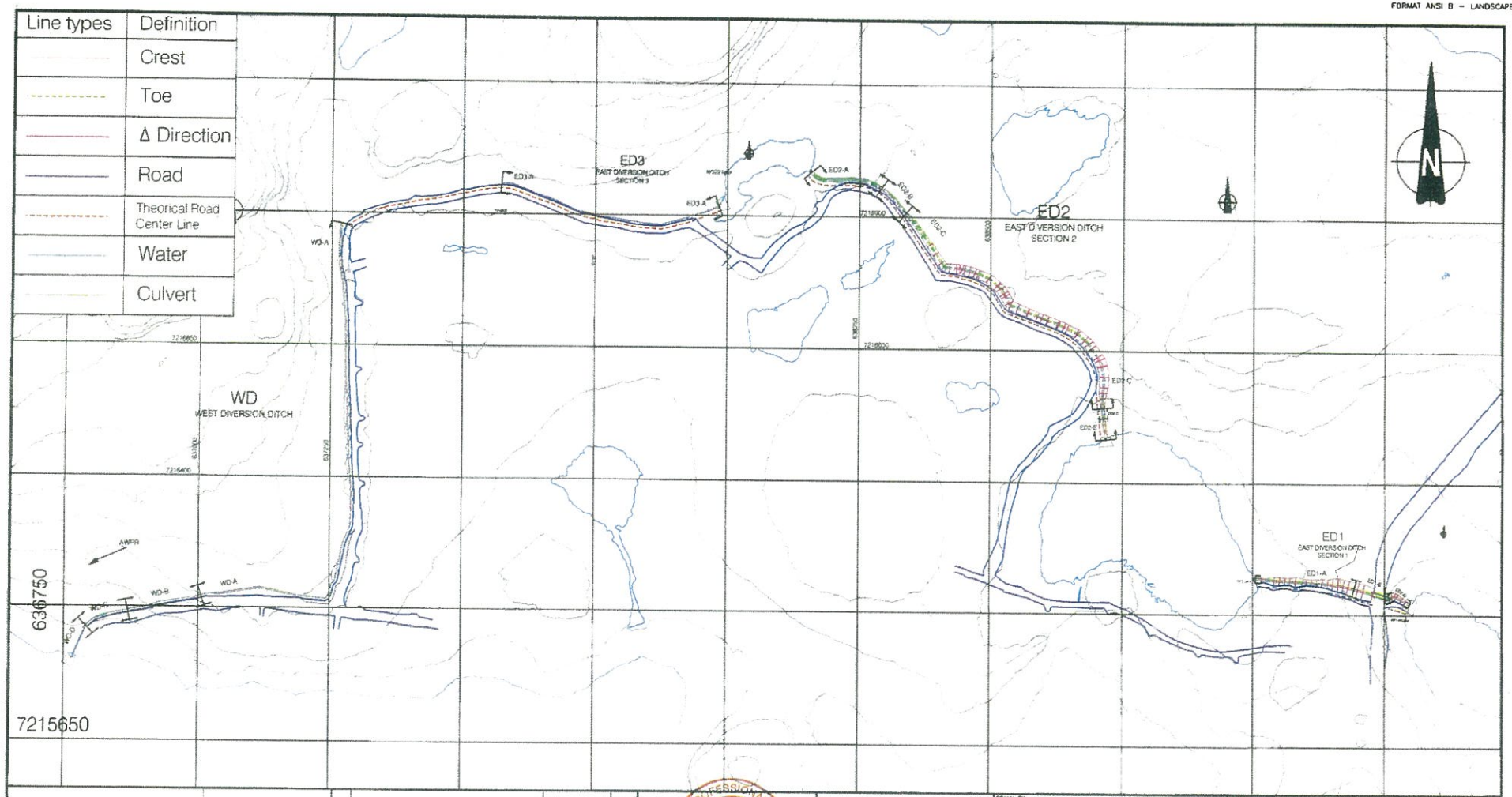
DIVERSION DITCHES
AS-BUILT
WEST DIVERSION DITCH 1

SCALE: 1:2500 FILE: .DWG

DRAWING NO. REVISION SHEET 3 / 3

K:\Diversion Ditches\As-Built\CAD\JMatte - Diversion ditches\Diversion ditches - AEM As-Built.dwg, 18 May 2013

FORMAT ANSI B – LANDSCAPE




| TITLE | # DWG |
|---|---|
| REFERENCE DRAWINGS | |

| REV | DESCRIPTION | DATE | BY |
|---|---|---|---|
| REVISIONS | | | |

REGISTERED PROFESSIONAL ENGINEER J. BELANGER LICENSEE NWT/NU

AGNICO EAGLE

| | | |
|---|---|---|
| DRAWN BY | J.MATTE | DATE 19-05-2013 |
| CHECKED BY | T.LEPINE | 19-05-2013 |
| APPROVED BY | J. Belanger | 12-06-2013 |
| PROJECT NO. | | |
| DATE | 19-05-2013 | |

TITLE AGNICO-EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES
AS-BUILT
OVERVIEW

SCALE 1:7000 FILE .DWG

DRAWING NO. REVISION SHEET 1 / 5

X:\Diversion Ditches\As-Built\CAD\JMatte – Diversion ditches\Diversion ditches – AEM As-Built.dwg, 19 May 2013

# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

## APPENDIX B

## SELECTED CONSTRUCTION PHOTOS

AGNICO-EAGLE MINES LIMITED

MEADOWBANK GOLD PROJECT

(08-06-2012) ED-Excavation

(08-10-2012) Culvert Vault Road 0-3/4

(08-06-2012)ED-Slope stability

(08-11-2012) Culvert Vault Road 1st sheets

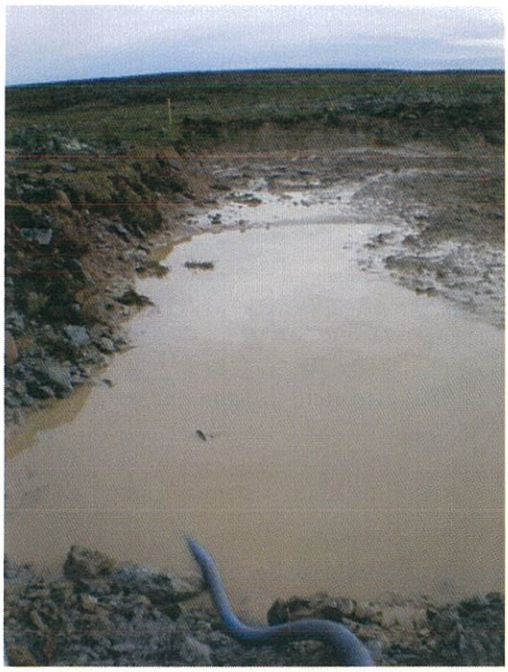
(08-08-2012)ED-Mud over drill pattern

(08-12-2012)Culvert Vault Road Compaction

(08-14-2012) Rockfill over VR Culvert

(08-15-2012) Rockfill over VR Culvert

(08-17-2012) NP1 Inlet

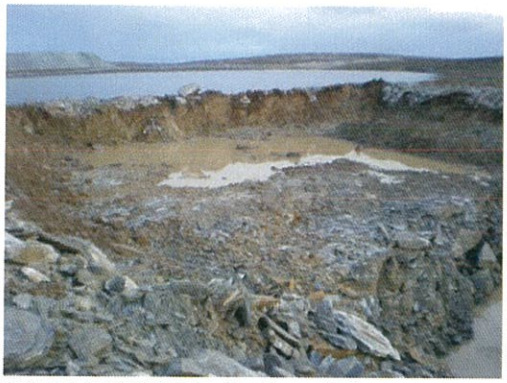


(08-17-2012) ED-Water over drill pattern

(08-18-2012) ED-Ditches Alignment 1

(08-18-2012) ED-Ditches Alignment 2

(08-20-2012) ED-Ditches Alignment 3



(08-26-2012) NP1 - 1st Breach 2

(08-21-2012) ED-Channel Slopes

(08-26-2012) NP1 - 1st Breach 3

(08-26-2012) NP1 - 1st Breach 1

(08-26-2012) NP1 - 1st Breach 4

(08-26-2012) NP1 - 1st Breach 5

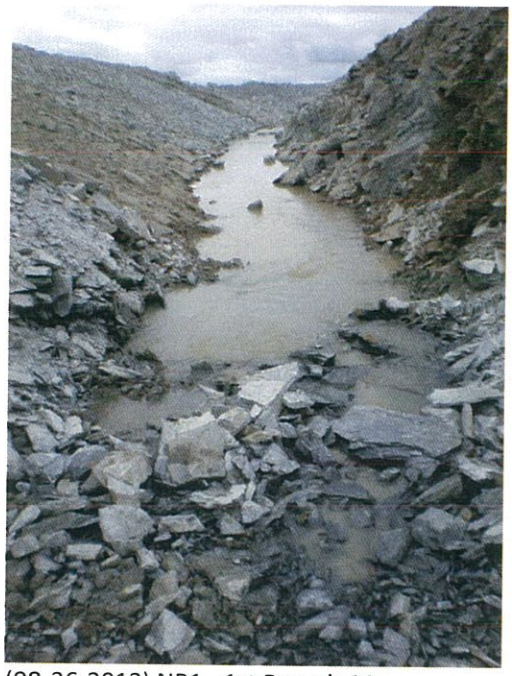
(08-26-2012) NP1 - 1st Breach 6

(08-26-2012) NP1 - 1st Breach 7

(08-26-2012) NP1 - 1st Breach 8

(08-26-2012) NP1 - 1st Breach 9

(08-26-2012) NP1 - 1st Breach 10



(08-26-2012) NP1 - 1st Breach 11

(08-26-2012) NP1 - 1st Breach 12

(08-27-2012)ED- Stripping

(08-27-2012) NP1- 1st Breach 13

(08-27-2012) NP1- 1st Breach 14

(08-28-2012)NP1 Sediment Barrier 1

(09-12-2012)ED1- Last Blast 2

(08-28-2012)NP1 Sediment Barrier 2

(09-15-2012)NP1 - 2nd Breach 1

(09-12-2012)ED1- Last Blast 1

(09-15-2012) NP1 - 2nd Breach 2

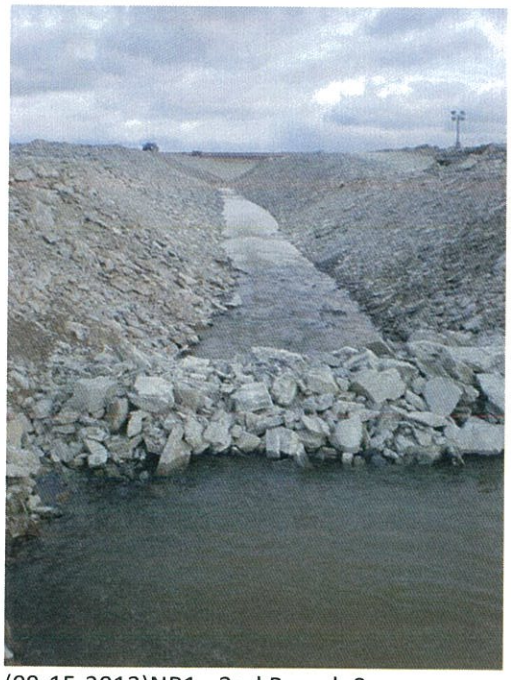
(09-15-2012)NP1 - 2nd Breach 3

(09-15-2012)NP1 - 2nd Breach 6

(09-15-2012)NP1 - 2nd Breach 4

(09-15-2012)NP1 - 2nd Breach 7

(09-15-2012)NP1 - 2nd Breach 5

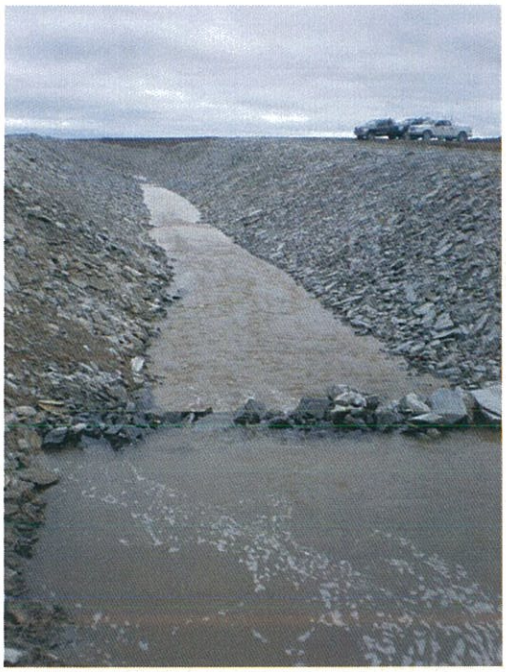


(09-15-2012)NP1 - 2nd Breach 8

(09-15-2012)NP1 - 2nd Breach 9

(09-17-2012)NP1 – 3rd Breach 2

(09-15-2012)NP1 - 2nd Breach 10



(09-17-2012)NP1 – 3rd Breach 3

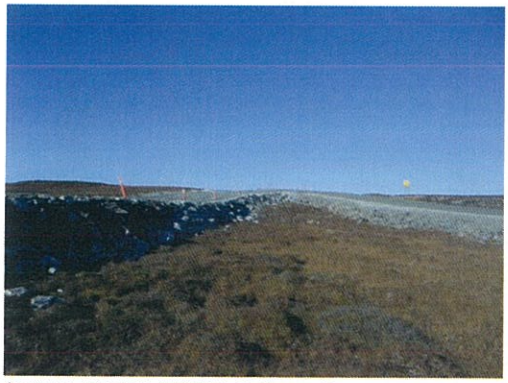
(09-17-2012)NP1 – 3rd Breach 1

(09-17-2012)NP1 – 3rd Breach 4

(09-17-2012)NP1 – 3rd Breach 5

(09-29-2012) AWPR Culvert 2

(09-17-2012)NP1 – 3rd Breach 6



(09-29-2012) AWPR Culvert 3

(09-29-2012) AWPR Culvert 1

(09-30-2012) AWPR Culvert 4

(09-30-2012) AWPR Culvert 5

(09-30-2012) WD-Drilling

(09-30-2012) AWPR Culvert 6

(10-5-2012) SD1 Punched Liner

(09-30-2012)ED-Stripping

(10-2-2012) SD1 Punched Liner 1

(10-2-2012) SD1 Punched Liner 2

(10-09-2012)WD - 3PL inlet 1

(10-09-2012)ED - Completed Ditches 1

(10-09-2012)WD - 3PL inlet 2

(10-09-2012)ED - Completed Ditches 2

(10-09-2012)WD-Completed Ditches 1

(10-09-2012)WD Dam – Access Road

(10-19-2012) ED-WS22 Breach 2

(10-16-2012)WD Dam – Till Placement

(10-19-2012) ED-WS22 Breach 3

(10-19-2012) ED-WS22 Breach 1

# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

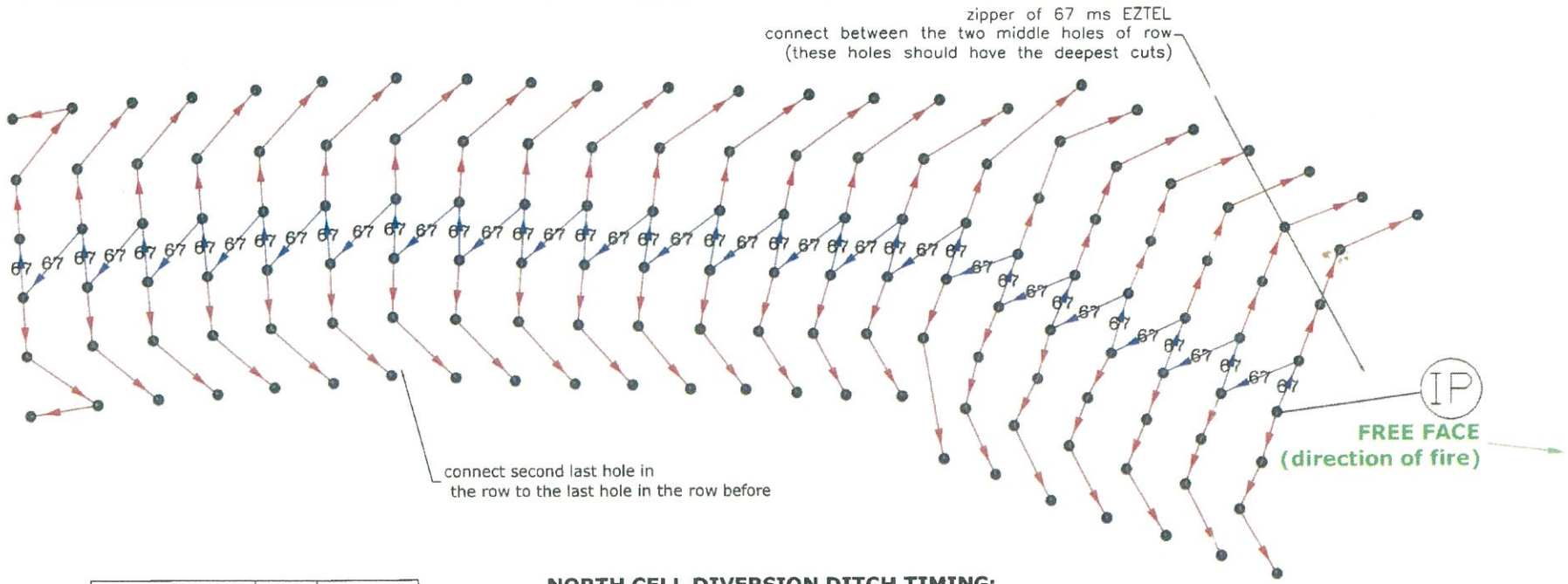
## APPENDIX C

## DRILL AND BLAST PROCEDURES

AGNICO-EAGLE MINES LIMITED

MEADOWBANK GOLD PROJECT

FORMAT ANSI B – LANDSCAI




| Delay | Qty | Legend |
|---|---|---|
| EZDET 25/500 | var | ——— |
| Eztl 67ms | var | —67— |
| Hole Quantity | var | |

**NORTH CELL DIVERSION DITCH TIMING:**

- ALWAYS CONNECT ZIPPER BETWEEN MIDDLE TWO HOLES OF EACH ROW (BETWEEN THE LONGEST CUTS)
- CONNECT ROWS WITH 25 MS
- CONNECT SECOND LAST HOLE IN ROW TO LAST HOLE IN THE ROW TOWARDS TO FRONT OF THE PATTERN
- PATTERN SHOULD ALWAYS BE SQUARED OFF - CONNECT LAST ROW AS SEEN ABOVE

TECHNICAL SPECIFICATION

EVERY EMPTY HOLES MUST BE FILLED WITH STEMMING TO AVOID FLYING ROCKS

AGNICO-EAGLE

| | | |
|---|---|---|
| DRAWN BY csquires | DATE 29/09/12 | TITLE AGNICO-EAGLE - MEADOWBANK DIVISION |
| GEOLOGY APPROVAL | | BLAST TIMING |
| ENGINEERING APPROVAL | 29/09/12 | NORTH CELL DIVERSION DITCH |
| BLASTING DATE | 30/09/2012 | SCALE N.T.S. / DATE / FILE .DWG |
| | | DRAWING NO. / REVISION / SHEET 1 / 1 |

N

| HOLE LENGTH | COLLAR |
|---|---|
| 5.1m + | 2.0m |
| 3.1m to 5.0m | 1.5m |
| 2.1m to 3.0m | 1.0m |
| 2.0m - | 0.5m |

FOR 5m HOLE (2m COLLAR) = 45kg

Reg 30/09/2012

29/9/2012

| DRAWN BY | DATE |
|---|---|
| csquires | 29/09/12 |

| Burden (m) | Spacing (m) | Total Holes | Tonnage |
|---|---|---|---|
| 3.0 | 3.0 | var | var |

AGNICO-EAGLE

**SQUARE PATTERN** **6.5" bit**

| HOLE | DESIGN LENGTH | COLLAR | DESIGN KG's |
|---|---|---|---|
| PRODUCTION | var | 2.0 | var |

**MEADOWBANK DIVISION**

ENGINEERING

*LOADING PLAN*

*NORTH CELL DIVERSION DITCH*

# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

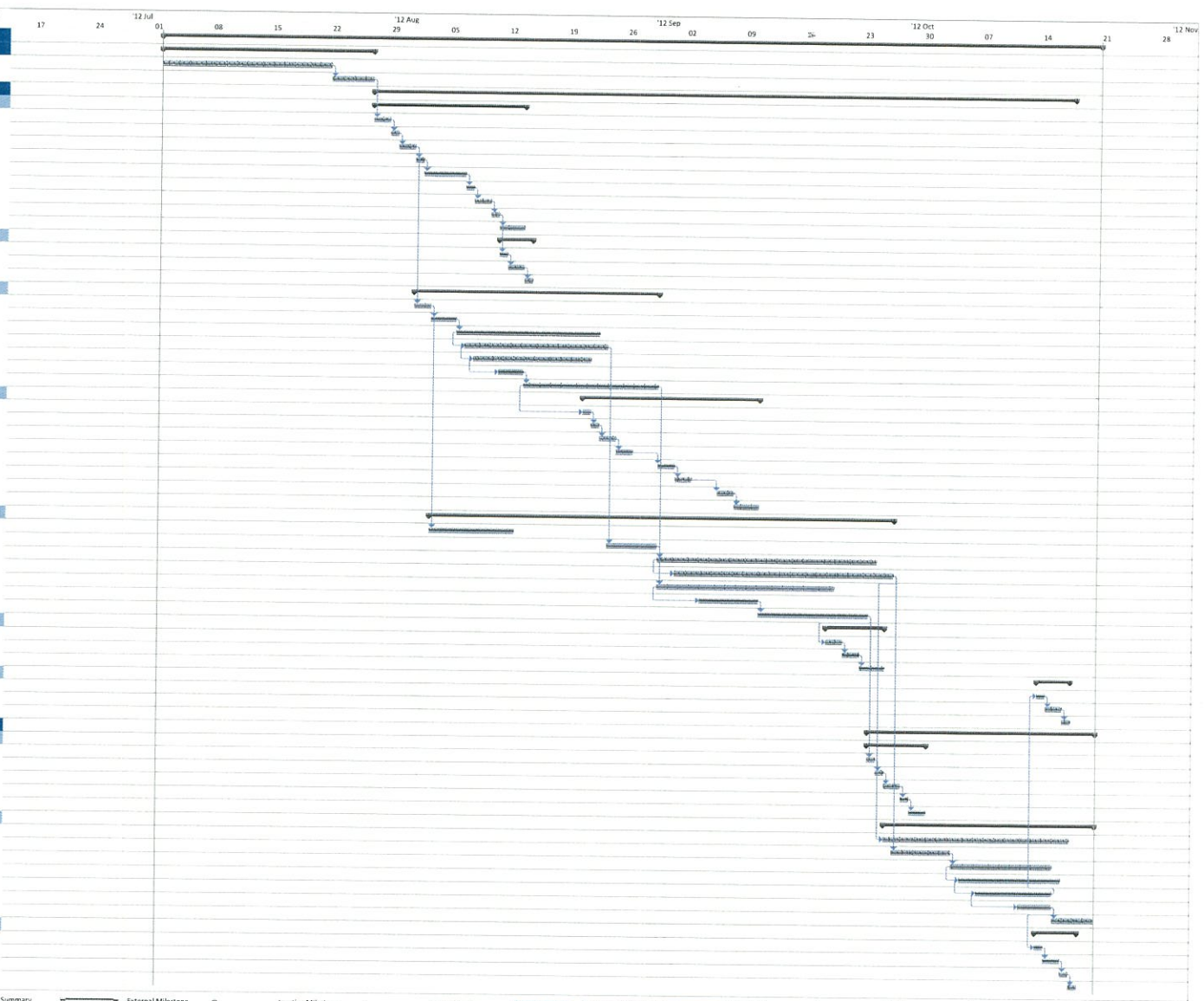
## APPENDIX D

## CONSTRUCTION SCHEDULE

AGNICO-EAGLE MINES LIMITED

MEADOWBANK GOLD PROJECT

| ID | Task Mode | Task Name | Duration | Start | Finish | % Complete |
|---|---|---|---|---|---|---|
| 1 | | **NORTH CELL DIVERSION DITCHES** | **111 days** | **12-07-05** | **12-10-23** | **100%** |
| 2 | | **ACCESS ROAD CONSTRUCTION** | **25 days** | **12-07-05** | **12-07-29** | **100%** |
| 3 | | DITCHES ACCESS ROAD | 20 days | 12-07-05 | 12-07-24 | 100% |
| 4 | | NORTH CELL ROAD | 5 days | 12-07-25 | 12-07-29 | 100% |
| 5 | | **EAST DIVERSION DITCH** | **83 days** | **12-07-30** | **12-10-20** | **100%** |
| 6 | | **VAULT ROAD CULVERT** | **18 days** | **12-07-30** | **12-08-16** | **100%** |
| 7 | | VAULT ROAD EXCAVATION - 2 m | 2 days | 12-07-30 | 12-07-31 | 100% |
| 8 | | BLAST PREPARATION | 1 day | 12-08-01 | 12-08-01 | 100% |
| 9 | | DRILLING | 2 days | 12-08-02 | 12-08-03 | 100% |
| 10 | | BLAST | 1 day | 12-08-04 | 12-08-04 | 100% |
| 11 | | EXCAVATION | 5 days | 12-08-05 | 12-08-09 | 100% |
| 12 | | 0-3/4 CULVERT PAD | 1 day | 12-08-10 | 12-08-10 | 100% |
| 13 | | 2x 1200 mm CULVERT INSTALLATION | 2 days | 12-08-11 | 12-08-12 | 100% |
| 14 | | 0-6" CULVERT COVERING | 1 day | 12-08-13 | 12-08-13 | 100% |
| 15 | | ROCK FILL EMBACKMENT | 3 days | 12-08-14 | 12-08-16 | 100% |
| 16 | | **NP1-N LAKE INTLET** | **4 days** | **12-08-14** | **12-08-17** | **100%** |
| 17 | | UNFROZEN SOIL EXCAVATION | 1 day | 12-08-14 | 12-08-14 | 100% |
| 18 | | RIP RAP WITH CLEAN ROCK | 2 days | 12-08-15 | 12-08-16 | 100% |
| 19 | | LAKE INTAKE CONSTRUCTION | 1 day | 12-08-17 | 12-08-17 | 100% |
| 20 | | **DITCH BETWEEM NP2 AND VAULT ROA** | **29 days** | **12-08-04** | **12-09-01** | **100%** |
| 21 | | UNFROZEN SOIL EXCAVATION | 2 days | 12-08-04 | 12-08-05 | 100% |
| 22 | | BLAST PREPARATION | 3 days | 12-08-06 | 12-08-08 | 100% |
| 23 | | DRILLING | 17 days | 12-08-09 | 12-08-25 | 100% |
| 24 | | BLAST | 17 days | 12-08-10 | 12-08-26 | 100% |
| 25 | | BEDROCK EXCAVATION | 14 days | 12-08-11 | 12-08-24 | 100% |
| 26 | | SLOPE CORRECTION | 3 days | 12-08-14 | 12-08-16 | 100% |
| 27 | | RIP RAP WITH CLEAN ROCK | 16 days | 12-08-17 | 12-09-01 | 100% |
| 28 | | **NP2 LAKE OUTLET** | **21 days** | **12-08-24** | **12-09-13** | **100%** |
| 29 | | UNFROZEN SOIL EXCAVATION | 1 day | 12-08-24 | 12-08-24 | 100% |
| 30 | | RIP RAP WITH CLEAN ROCK | 1 day | 12-08-25 | 12-08-25 | 100% |
| 31 | | NP2 - 1ST BREACH | 2 days | 12-08-26 | 12-08-27 | 100% |
| 32 | | RIP RAP WITH CLEAN ROCK | 2 days | 12-08-28 | 12-08-29 | 100% |
| 33 | | NP2 - 2ND BREACH | 2 days | 12-09-02 | 12-09-03 | 100% |
| 34 | | RIP RAP WITH CLEAN ROCK | 2 days | 12-09-04 | 12-09-05 | 100% |
| 35 | | NP2 - 3RD BREACH | 2 days | 12-09-09 | 12-09-10 | 100% |
| 36 | | LAKE INTAKE CONSTRUCTION | 3 days | 12-09-11 | 12-09-13 | 100% |
| 37 | | **DITCH BETWEEN NP2 AND WS22** | **55 days** | **12-08-06** | **12-09-29** | **100%** |
| 38 | | UNFROZEN SOIL EXCAVATION | 10 days | 12-08-06 | 12-08-15 | 100% |
| 39 | | BLAST PREPARATION | 6 days | 12-08-27 | 12-09-01 | 100% |
| 40 | | DRILLING | 26 days | 12-09-02 | 12-09-27 | 100% |
| 41 | | BLAST | 26 days | 12-09-04 | 12-09-29 | 100% |
| 42 | | BEDROCK EXCAVATION | 21 days | 12-09-02 | 12-09-22 | 100% |
| 43 | | SLOPE CORRECTION | 7 days | 12-09-07 | 12-09-13 | 100% |
| 44 | | RIP RAP WITH CLEAN ROCK | 13 days | 12-09-14 | 12-09-26 | 100% |
| 45 | | **NORTH DITCH** | **7 days** | **12-09-22** | **12-09-28** | **100%** |
| 46 | | UNFROZEN SOIL EXCAVATION | 2 days | 12-09-22 | 12-09-23 | 100% |
| 47 | | SLOPE CORRECTION | 2 days | 12-09-24 | 12-09-25 | 100% |
| 48 | | RIP RAP WITH CLEAN ROCK | 3 days | 12-09-26 | 12-09-28 | 100% |
| 49 | | **WS22 LAKE OUTLET** | **4 days** | **12-10-17** | **12-10-20** | **100%** |
| 50 | | UNFROZEN SOIL EXCAVATION | 1 day | 12-10-17 | 12-10-17 | 100% |
| 51 | | RIP RAP WITH CLEAN ROCK | 2 days | 12-10-18 | 12-10-19 | 100% |
| 52 | | NP2 - 1ST BREACH | 1 day | 12-10-20 | 12-10-20 | 100% |
| 53 | | **WEST DIVERSION DITCH** | **27 days** | **12-09-27** | **12-10-23** | **100%** |
| 54 | | **AWPR CULVERT** | **7 days** | **12-09-27** | **12-10-03** | **100%** |
| 55 | | AWPR ROAD EXCAVATION - 2 m | 1 day | 12-09-27 | 12-09-27 | 100% |
| 56 | | 0-3/4 CULVERT PAD | 1 day | 12-09-28 | 12-09-28 | 100% |
| 57 | | 2x 1200 mm CULVERT INSTALLATION | 2 days | 12-09-29 | 12-09-30 | 100% |
| 58 | | 0-6" CULVERT COVERING | 1 day | 12-10-01 | 12-10-01 | 100% |
| 59 | | ROCK FILL EMBACKMENT | 2 days | 12-10-02 | 12-10-03 | 100% |
| 60 | | **DITCH BETWEEN NP2 AND WS22** | **25 days** | **12-09-29** | **12-10-23** | **100%** |
| 61 | | UNFROZEN SOIL EXCAVATION | 22 days | 12-09-29 | 12-10-20 | 100% |
| 62 | | BLAST PREPARATION | 7 days | 12-09-30 | 12-10-06 | 100% |
| 63 | | DRILLING | 12 days | 12-10-07 | 12-10-18 | 100% |
| 64 | | BLAST | 12 days | 12-10-08 | 12-10-19 | 100% |
| 65 | | BEDROCK EXCAVATION | 9 days | 12-10-10 | 12-10-18 | 100% |
| 66 | | SLOPE CORRECTION | 4 days | 12-10-15 | 12-10-18 | 100% |
| 67 | | RIP RAP WITH CLEAN ROCK | 5 days | 12-10-19 | 12-10-23 | 100% |
| 68 | | **WS21 DIVERSION BERM** | **5 days** | **12-10-17** | **12-10-21** | **100%** |
| 69 | | ACCESS ROAD EXTENSION | 1 day | 12-10-17 | 12-10-17 | 100% |
| 70 | | UNFROZEN SOIL EXCAVATION | 2 days | 12-10-18 | 12-10-19 | 100% |
| 71 | | TILL PLACEMENT | 1 day | 12-10-20 | 12-10-20 | 100% |
| 72 | | ROCK FILL EMBACKMENT | 1 day | 12-10-21 | 12-10-21 | 100% |




Project: North Cell Diversion Ditch
Date: 13-06-10

Task | Split | Milestone | Summary | Project Summary | External Tasks | External Milestone | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Deadline | Progress

# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

## APPENDIX D

## QA & QC DAILY MEETING

AGNICO-EAGLE MINES LIMITED

MEADOWBANK GOLD PROJECT

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 02-08-2012
**Time:** 10:30 AM

**Presents,**

LC [JANA]
TL, MG, PG, SFB [AEM]

**Safety:**

- Ø

**Weekly Advance (last week):**

**SANA:** • First blast yesterday night ~ [18:30 PM] → [1st end [culvert zone]
• access road have been completed for all the [illegible]
• some excavation of active layer have been done

**OWNER** • Strip the active layer a maximum 24 hours before drilling to prevent melting of the drilling pad

**General Planning (Next week):**

**SANA:** • Next week
→ ① Culvert zone [Vault road]
② Blasting 1st end
③ Complete test end of the ditches

**OWNER:**
↳ to the test part [completed] before replacing

Report By: _____

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 06/02/2012

Time: 9h35

Presents:

Jean François Daudu, Léon Côté, Douglas, Thomas Lepine
Thomas Dhaen, Patrice Gagnon, Laurent

Safety:

- Make sure driller will have the form
- Wolverine near US 22 lake → advice environment.

Daily ~~Weekly~~ Advance (last week):

SANA: - One emulsion truck available today
- Blast pattern could be tricky.
All Reserve 2/1 muck
Drill 2/2 done. work now on redrill
OWNER Muck till beside road between NP2 - NP1

General Planning (Next week):

SANA: - Check with Fernand to blast the check near the culvert with bales
- Blast tonight 6h30 or 12h45
- 1 blast each 2 days
OWNER:
continue muck till

if ok start installation of the culvert after the blast make a ramp to bring the equipment at the bottom

Report By: Michel Gaskon

X:\Diversion Ditches\Construction\Daily Planning\Template_Daily Meeting Report.xls\Sheet1

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 08/08/2012
Time: 9h35

Presents:
Leon Thomas Patrice Douglas JF Michel

Safety:
Slope stability Vault Road

Daily ~~Weekly~~ Advance (last day):

SANA: Drill : · blast 12:45 yesterday
· chunk ~~[illegible]~~ still there
· blast pattern 2.2

Excavate pattern 2.1
Move till to waste dump

OWNER

General Planning (Next day):

SANA: Drill blast #3
Drill NPI into pattern each meter without cutting to uncover this section
Drill

OWNER:
1) Ramp on ~~[illegible]~~ East side Vault Road
2) Drill Vault on the East 1.5m 1x1
3) Drill chunk west of the vault → need ramp on ~~[illegible]~~ side
4) Bring muck bottom of the channel
5) Prioritize stability of the Vault Road

Report By: Michel

X:\Diversion Ditches\Construction Daily Planning\Template_Daily Meeting Report.xls\Sheet1

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 08/08/2012

Time: 9h30

Presents:

Patrice - Thomas Lepine - Thomas Lean -

Safety:

Nothing

~~Weekly~~ Days Advance (last day):

SANA: No present

- drilling 40 holes patern 3
- drilling chunk

OWNER

- excavation on the NPC lake side - ready to install culvert
- Ramp on the NPC lake side

General Planning (Next day):

SANA:

- excavation blast H2-2
- blast chunk patern # 2
- complete excavation NPC lake side

OWNER:

- pump water vault road
- ease blasted material as rock fill
- clean vault road foundation
- Rock fill
- blast patern 3 midnight

Report By:

Michel Gralea

X:\Diversion Ditches\Construction Daily Planning\Template Daily Meeting Report.xls\Sheet1

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 09 / 08 / 2012
Time: 9h35

Presents: Thomas Lepine, Thomas Dahm, Michel Gauthier, Patrice Gagnon Laurier, Douglas, Jean-François Biland, Claude

Safety:

- No concern

Daily ~~Weekly~~ Advance (last day): drill chunk

SANA:
- blast chunk
- pm ~~pm~~ survey
- Rock fill culvert
- clean up culvert fondation
- continue drilling pattern 3

OWNER

Daily ~~Comment~~ Planning (Next day):

SANA:
- Arpenteur nivean
- arpentage mine
- stabilize slope

(Robert)

→ trouble with frequence for repeater with chief surveyor

Sequence : drill / blast / let muck until ready to stabilize section with clean material

OWNER:
→ Sends surveyor early
→ too much stand-by because of surveyor

- stand by 1/4 - 1/2 day per day
- 50-60% on
- surveyor on field 7h30

Report By: Michel

X:\Drawings Dikes\Construction Daily Planning (Template, Daily Meeting Reports)\Sheet1

→ estimate a drilling rate during the next two days.

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 10/08/2012

Time: 9h30

Presents:

Doug, Claude, JF, Michel, Enike, Laurier, Patrice

Safety:

No concern

slope have been stabilize

Daily ~~Weekly~~ Advance (last day):

SANA: - Drill stop 4h30 load steam

blast 12h45

→ pattern 3 → à Doug

Construction - Stabilize slope sud

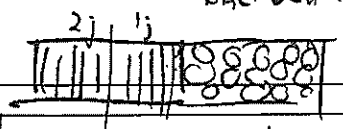
- Prepare blast pattern 3

OWNER - lift rock fill

- surveyor

General Planning (Next day):

Blast 00h45




SANA: Blast sequence 2j

- test compaction of the 0-3/4 bed

- lift to the half of the culvert before compaction

OWNER:

- look with Pierre McMullen for blast design angular

- ~~mock during~~ night (1h am)

- rough mud in the open face (4h pm)

- stake drill hole (6h am)

- survey blast (8h am)

MAX 40 m of blast to avoid choking

Report By: Michel Gr.

X:\Diversion Ditches\Construction Daily Planning\Templates\Daily Meeting Report.xls]Sheet1

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 12/08/2012
Time: 8h30

Presents:
MG LT CT EV PG JFB

Safety:

→ correction du chemin - emulsion truck
→ coup d'eau → stabilité des truck
→ fissure sur le long de la route présente secteur emulsion

Daily ~~Weekly~~ Advance (last day):

SANA: Drill 00:45 blast 5137R005
blast était divisé dans 2 pickups → correction en soirée
* plan pour forceuse → surveyor : laissa plan à geneard
Construction coussin granulaire
et feuilles remblais compacts
mort terrain NP2 nord moyen
OWNER clean up + nettoyer chemin
matériel transporter pour patcher le chemin
→

General Planning (Next day):

SANA: Drill 8h30 Drilling start + journée pleine → Surveyor renvoie donnée après réf
changement shift
→ vérifier As-built
Construction • continuer ponceau
OWNER: • bouchon 3m coté amont avec 0-3/4
• remblais coté lac vers NP2
• compaction du tuyau au P10 000 + vide ponceau bien rempli
nuit : • route shillage
• ramasser till bord de route

Report By:

X:\Diversion Ditches\Construction Daily Planning\Template Daily Meeting Report.xls\Sheet1

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 13/08/2012
Time: 9h30

Presents:
TP PG CT DP JFB MG LT EV

Safety:
- périmètre sécurité blast attichage → blaste chandelle
approcher pancake
été de la route → Doug va regarder ça

Drill ~~Weekly~~ Advance (last day):

SANA: Drill - 7-8 rangé de drill → record

Construction - ponceau : mise en place
- la route déplacé en dehors du blast
- travailler emulsion truck

OWNER → très beau clean

General Planning (Next day):

SANA: drilling - changement de shift
- nettoyage loader loading
- pomper l'eau plus

Construction - construction bouchon
en acier ponceau
OWNER: remblais route

- nettoyage de drill en soirée

AEM → pomper la sump ED 2

Report By: Michel Gadeau

X:\Diversion Ditches\Construction Daily Planning\Template_Daily Meeting Report.xls]Sheet1

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Aug 14th 2012
Time: 8h30

Presents: CT, JFB, DG, EV, FM, TD, CT, Francis Minier

Safety:

— Safety vest for pumpman around lakes

→ Crew change Yesterday

Weekly Advance (~~last week~~ 24h):

SANA: drill pattern #5, some hole have to be redrilled, No blast because of that

→ finalized culvert upstream side, backfill downstream side
→ work on the road

OWNER

OK Started pumping on

General Planning (~~Next week~~ 24h):

SANA: dig downstream of culvert
backfill both sides
add 6" material on top of culvert
→ drill until 4pm, then blast at 4pm → then sequencing as planned

OWNER:

Report By: [signature]

X:\North Cell Road\Diversion Ditches\Template - Daily Meeting Report.xls]Sheet1

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Aug 15th 2012
Time: 8h30

Presents: PG, RC, TD, CT, CT, Carol, EV, MG, FM

Safety: No concern to be added to minute.
Need to add safety signs & candle when blast is loaded.

Weekly Advance (~~Next week~~ 24hrs):

SANA: Drill down for most of the day →
- Excavation for road access, downstream of culvert
Add layer of 0-6" on top of culvert to protect
Bring 10 loads of muck to fill the road

OWNER: No night shift → No day shift today

General Planning (~~Next week~~ 24hrs):

SANA: No day shift an excavator → No night shift (plane flight issues)
- Drilling of pattern #5, adding more holes to blast tonight
- Carol will take care of pattern clean up for surveyors

OWNER:

Report By: PG

X:\North Cell Road\Diversion Ditches\Template_Daily Meeting Report.xlsx

WEEKLY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-16

Time: 8H30

Presents: DP. RB, YS, EU, CT, FM, CT, RC, AH

Safety:

Weekly Advance (last week):

SANA:
- PELLE.. REFINISER LES BORD, POSER 6" SUR CANUETTE
- REMPLIR VANCE pour avoir MAIS RESTE CUPEU à PLACER

OWNER

General Planning (Next week):

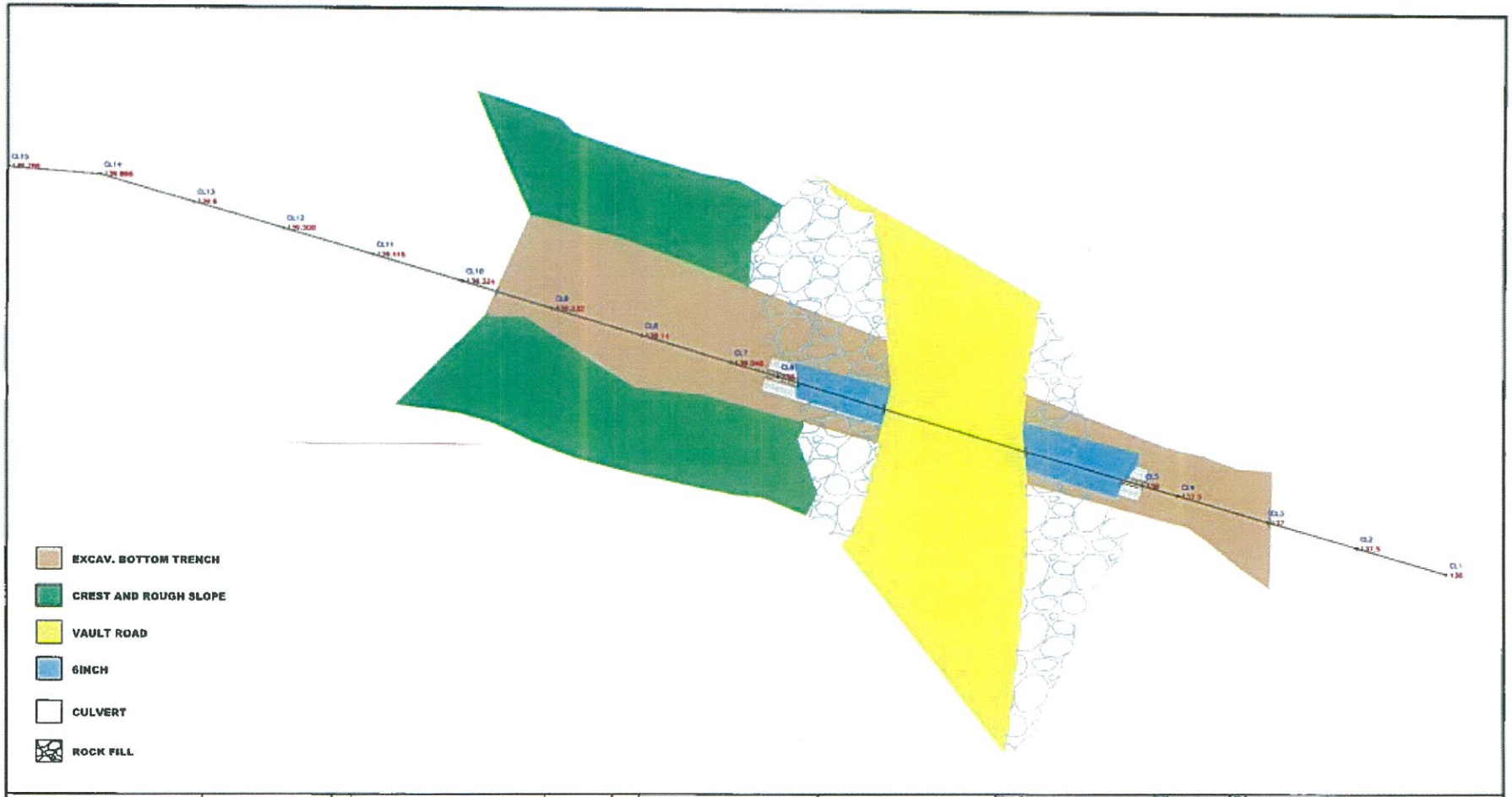
SANA:
- NETTOYAGE PROCHAINE PARTIE DE BLAST
- OPÉRATEUR DEMAIN BESOIN 2 CAMION ET 1 PELLE
- CONTINUER LE DRAINAGE
- FERMER LA ROCHE PAR DESSUS LES CANUETTES

OWNER:

Report By: Yannick Simard

X:\North Cell Road\Diversion Ditches\Template_Daily Meeting Report.xls\Sheet1

FORMAT ANSI B - LANDSCAPE




| TITLE | # DWG | REV | DESCRIPTION | DATE | BY |
|---|---|---|---|---|---|
| REFERENCE DRAWINGS | | REVISIONS | | | |

AGNICO-EAGLE

DRAWN BY: Y.SIMARD
DATE: 2012-08-17
CHECKED BY:
APPROVED BY:
PROJECT NO.
DATE:

FILE: AGNICO-EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES

**DAILY ADVANCE**

SCALE: N.T.S.
FILE: .DWG
DRAWING NO.
REVISION
SHEET 1 / 1

X:\Diversion Ditches\As-Built\DWG\DIVDITCHDAILYADVANCE.dwg, 17 Aug 2012

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-17
Time: 8H30

Presents:

XS, FV, FM, RC, RB, CT,

Safety:

RIEN À RAPPORTER.

Weekly Advance (last week):

SANA:

- Drilling pattern, Drill down une bonne partie de la journée.
- Clean up Bouet
- Enrochement calvette amont, Vault road fermé (enrochée) donc ouverte

OWNER

General Planning (Next week):

SANA:

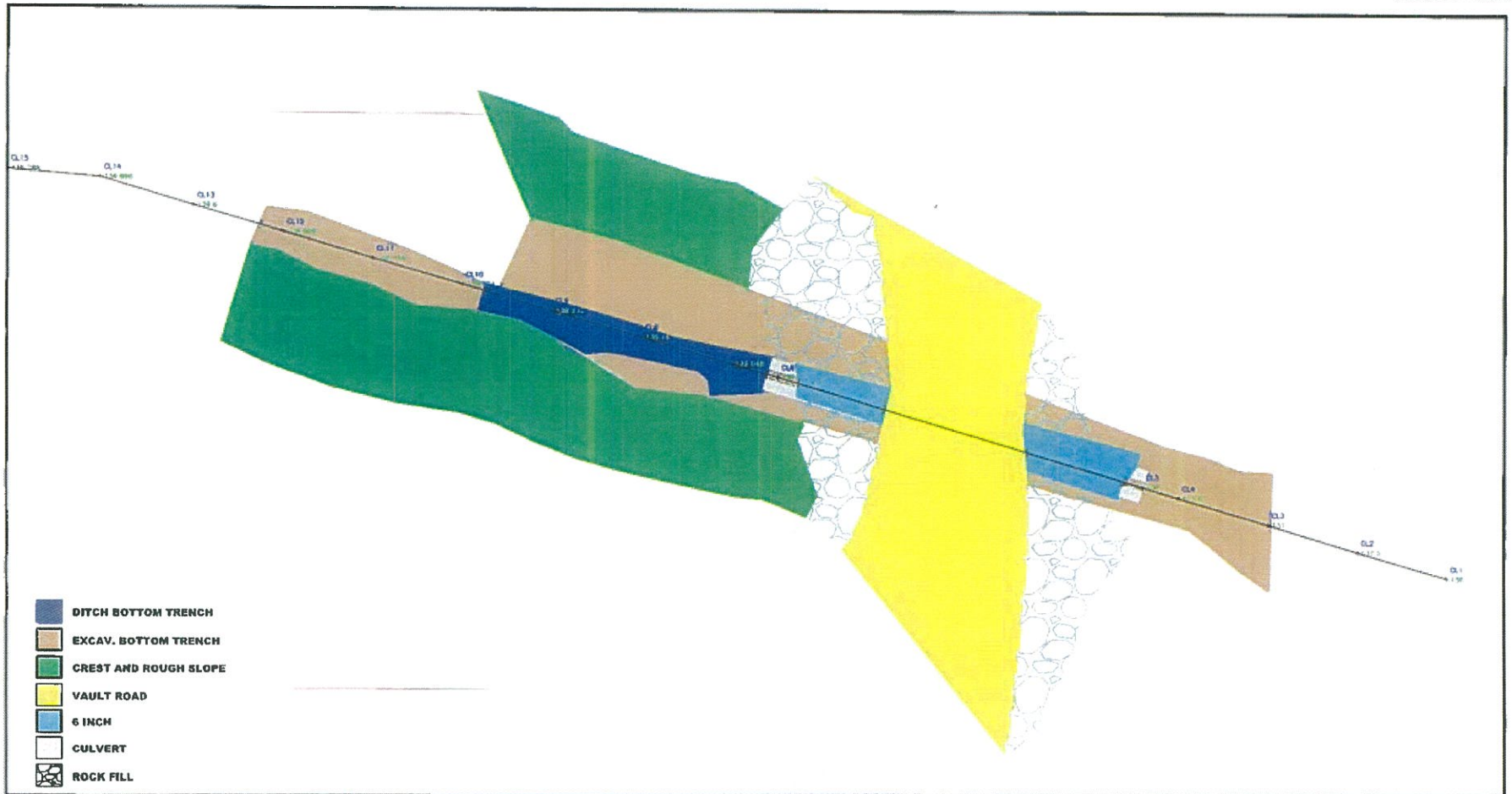
- Clean up. au pied d'eau
- Stake reste du pattern si la drill vas bien
- Marker le fond de la tranchée pour 18H00
- Évaluer selon la vitesse du forage si on va prendre le blast en une fois ou si on vas couper

OWNER:

Report By: _____

X:\Work Cell\Road\Diversion Ditches\Template, Daily Meeting Report.xls[Sheet1]

FORMAT ANSI B – LANDSCAPE




| TITLE | # DWG |
|---|---|
| REFERENCE DRAWINGS | |

| REV | DESCRIPTION | DATE | BY |
|---|---|---|---|
| REVISIONS | | | |

AGNICO-EAGLE

DRAWN BY: Y SIMARD — DATE: 2012-08-18

AGNICO–EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES

**DAILY ADVANCE**

SCALE: N.T.S. — FILE: .DWG

DRAWING NO. — REVISION — SHEET 1 / 1

X:\Diversion Ditches\As-Built\DWG\DIVDITCHDAILYADVANCE.dwg, 18 Aug 2012

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-18
Time: 8H30

Presents: YS, RC, FM, CT, CT, RB, ER

Safety:

RIEN À DÉCLARER.

Weekly Advance (last week):

SANA:
- Rock fill pour fond de la ditch : grade ok
- Avancement de l'excavation : roche boueuse, grade à ajuster
- Continuité du forage. Down à la fin de la journée

OWNER

General Planning (Next week):

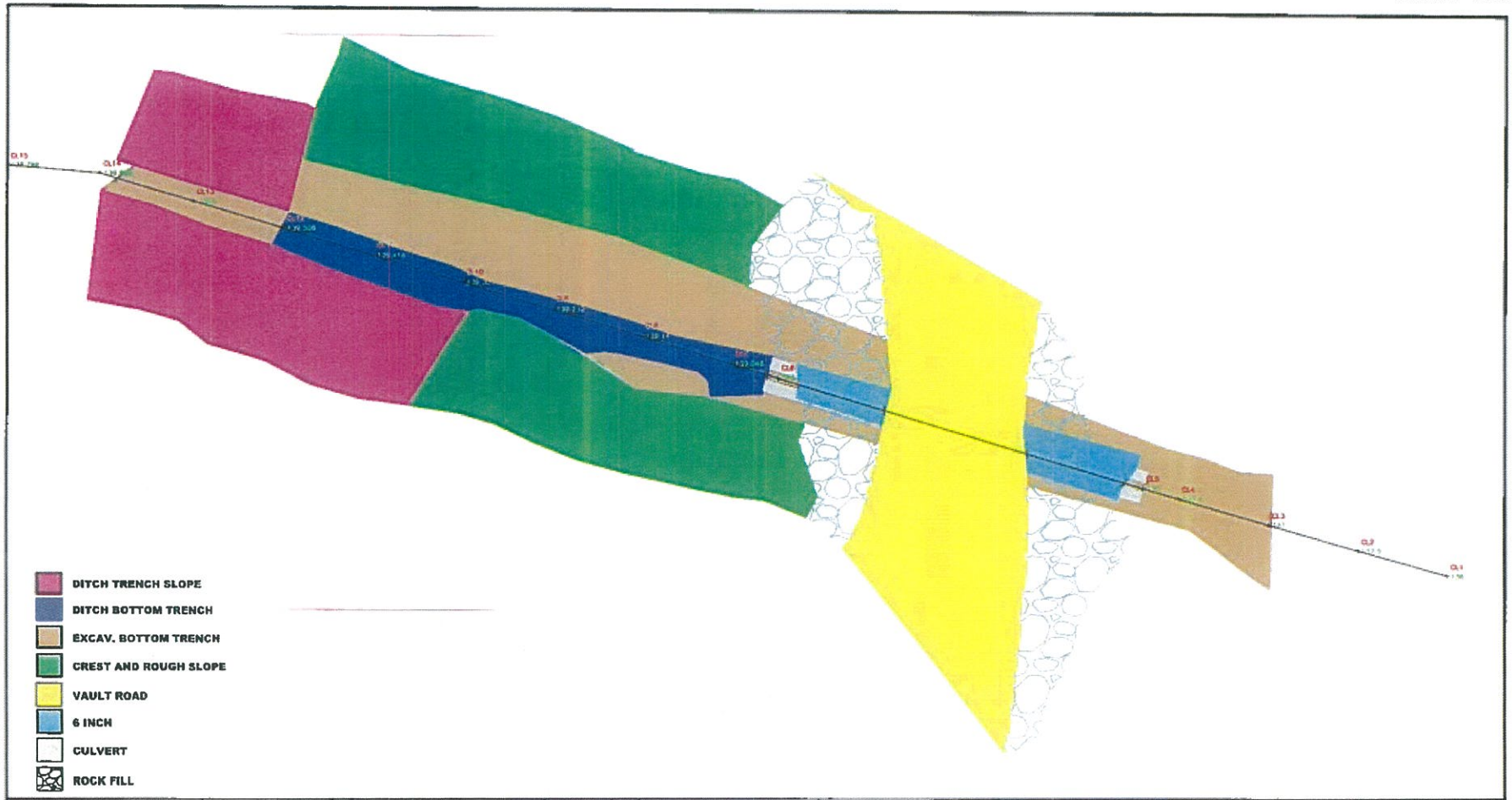
SANA:
- Continuer l'excavation et remplissage de la tranchée
- Blast prévu pour ce soir mais à confirmer
- Marquer l'exutoire pour l'opérateur si il y a du temps de libre
- Correction pour le fond de la tranchée.

OWNER:

Report By: [signature]

Z:\North Cell Road\Diversion Ditches\[Temporary Daily Meeting Report.xls]Sheet1

FORMAT ANSI B - LANDSCAPE




| TITLE | # DWG | REV | DESCRIPTION | DATE | BY |
|---|---|---|---|---|---|
| REFERENCE DRAWINGS | | | REVISIONS | | |

AGNICO-EAGLE

DRAWN BY: Y SIMARD — DATE: 2012-08-19

CHECKED BY:

APPROVED BY:

PROJECT NO.

DATE

TITLE: AGNICO-EAGLE – MEADOWBANK DIVISION

DIVERSION DITCHES

**DAILY ADVANCE**

SCALE: N.T.S. — FILE: .DWG

DRAWING NO. — REVISION — SHEET 1 / 1

X:\Diversion Ditches\As-Built\DWG\DIVDITCHDAILYADVANCE.dwg, 19 Aug 2012

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-19
Time: 8H30

Presents: YS, RC, FD, CT. FM, CT,

Safety:

Rien à signaler.

Weekly Advance (last week):

SANA:
- Continuité du forage. Problème avec Drill, pas de blast hier
- Excavation durant la nuit, excaver trop vite = mauvais enlignement et mauvais grade, devrais respecter les marques et planning manque de communication ??
- Début des slopes : côté nord = bonne roche, côté sud = boueuse.

OWNER

General Planning (Next week):

SANA:
- Excavation en avant des calvettes vers le lac
- Blast à minuit, nettoyage du reste du pattron (eau et boue) pour préparer le stake out demain matin
- Nettoyage du mauvais enlignement pour refaire la pente correctement.

OWNER:
-

Report By: [signature]

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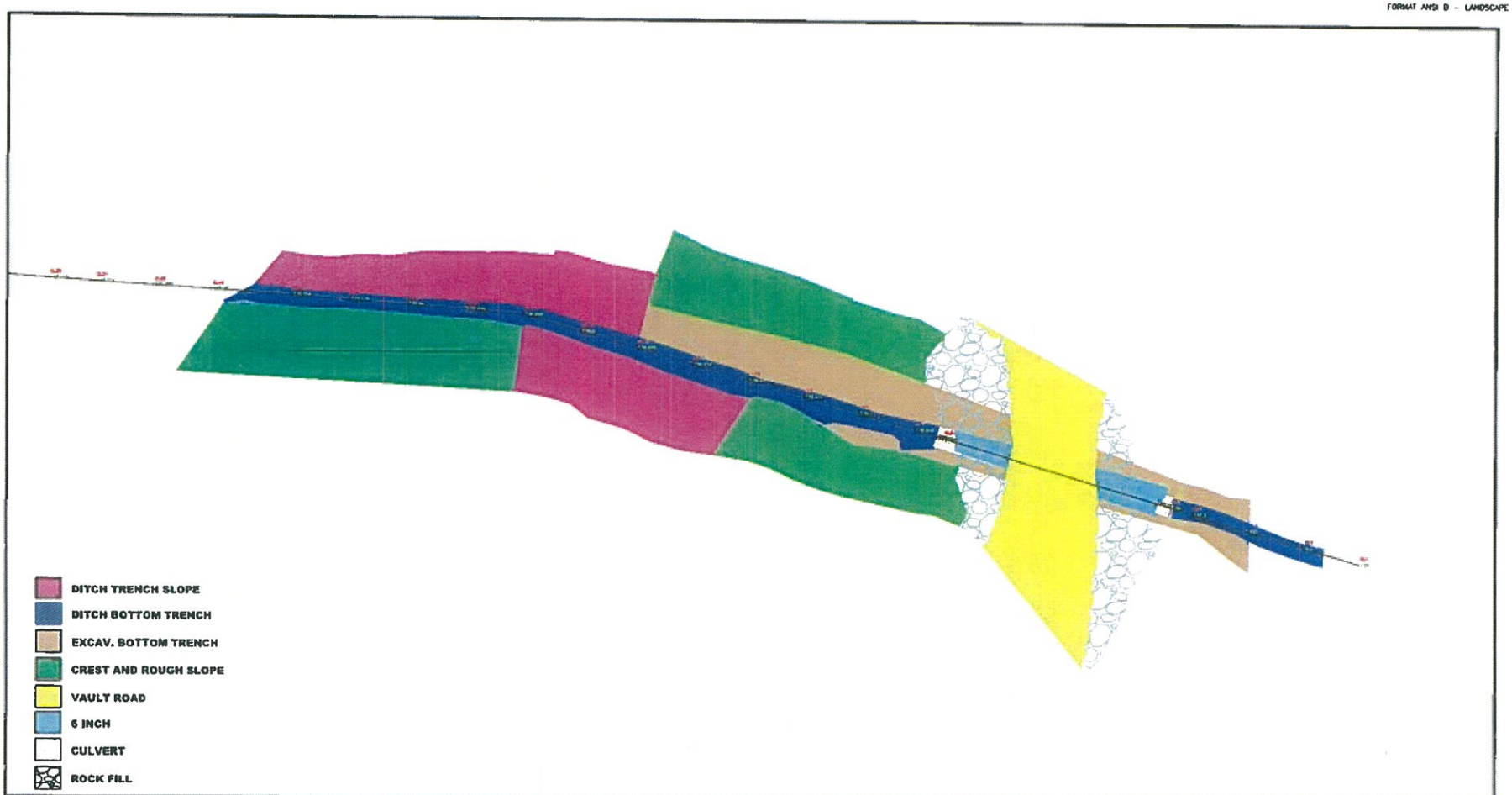
FORMAT ANSI B - LANDSCAPE




| TITLE | # DWG |
|---|---|
| REFERENCE DRAWINGS | |

| REV | DESCRIPTION | DATE | BY |
|---|---|---|---|
| REVISIONS | | | |

AGNICO-EAGLE

DRAWN BY: Y.SIMARD — DATE: 2012-08-20
CHECKED BY:
APPROVED BY:
PROJECT NO.
DATE:

TITLE: AGNICO-EAGLE – MEADOWBANK DIVISION
DIVERSION DITCHES
**DAILY ADVANCE**

SCALE: N.T.S. — FILE: .DWG
DRAWING NO. — REVISION — SHEET 1 / 1

X:\Diversion Ditches\As-Built\DWG\DIVDITCHDAILYADVANCE.dwg, 20 Aug 2012

WEEKLY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012 · 08 · 20

**Time:** 07h30

**Presents:** YS, EV, RC, CT, C-T, FM, RB

**Safety:**

* RAPPEL DE SÉCURITÉ SUR LES ORAGES ET ÉCLAIRS AVEC DES TROUS CHARGÉS SUR LE PATRON.

**Weekly Advance (last week):**

**SANA:**

- CONTINUITÉ DU PATRON DE FORAGE, BRIS EN FIN DE JOURNÉE
- EXCAVATION DE LA CÉ (GRADE ET ENVIGNEMENT À VÉRIFIER)
- EXCAVATION DE L'EXUTOIRE (GRADE À VÉRIFIER.)
- EXCAVATION DE LA TRANCHÉE EST ACCOTÉ AU PROCHAIN BLAST.

**OWNER**

- PAS EU DE BLAST, PROBLÈME DE DRILL AINSI QUE LES TROUS QUI REFERME RAPIDEMENT DONC PAS PU LOADER À TEMPS.

**General Planning (Next week):**

**SANA:**

- FINIR LE PATRON DE FORAGE ET BLASTER CE QU'ON POURRA À MINUIT, COUPER ET FINIR DEMAIN.
- NETTOYER LA BOUE ET RÉ-IMPLANTER OÙ IL FAUDRA.
- REFAIRE LE GRADE DE LA TRANCHÉE ET FINALISER CETTE PARTIE.

**OWNER:**

Report By: _____

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WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-21
Time: 81130

Presents: YS, RB, CT, RC, FM,

Safety:

Ø

Weekly Advance (last week):

SANA:
- BLAST THE PATTERN, RESTE 2 RANGÉES MAIS UNE DANS LA BOUE ET L'AUTRE DANS LA TUNDRA.
- EXCAVATION DE LA TRANCHÉE, GRADE EST BON, RESTE À SORTIR DU MATÉRIEL DONC AJUSTEMENTS À FAIRE POUR LA FINITION.
- TOUCHE LE BEDROCK DANS LES PAROIES, RESTE À VOIR CE QU'ON FAIT AVEC.

OWNER

General Planning (Next week):

SANA:
- DRILL FERA 3 TEST HOLES ENTRE LE BLAST ET LE NP2 POUR DÉFINIR LE BEDROCK POUR MIEUX ENTIGNER LA PLANIFICATION DU BREACH.
- ÉRE SERA ENVOYÉ SUR LA SUITE (PATTERN 06) POUR COMMENCER LE FORAGE.

OWNER:
- PAS D'EXCAVATEUR AUJOURD'HUI, ENVOYÉ À CENTRAL DYKE
-

PRÉVOIT-ON UN NOUVEAU DESIGN POUR LES PATRONS SUIVANTS?

Report By: [signature]

WEEKLY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012-08-22

**Time:** 8H30

**Presents:**

YS, EU, FM, CT, RLB, CT.

**Safety:**

Ø

**Weekly Advance (last week):**

**SANA:**

- LES TEST HOLES ONT RÉVÉLÉS QUE LE BEDROCK SE TROUVE À L'ÉLEV 142 DONC ON DEVRA BLASTÉ POUR OUVRIR LE CANAL
- SGS À NETTOYÉ SE QU'IL MANQUAIT EN LARGEUR POUR LE PATRON
- DRILL À COMMENCÉ À FORER LE OG, LE RESTE DEMAIN. UN PEU D'EAU VERS LA MOITIÉ EST, LE RESTE EST SEC
- J'AI PLACÉ LES LIMITES DU CLEAN UP POUR ROUVRIR LA TRANCHÉE

**OWNER**

# PAS DE "SHIFT" DE NUIT SUR LA PELLE.

**General Planning (Next week):**

**SANA:**

- CONTINUITÉ DU PATERN + STAKE OUT LE RESTE.
- CLEAN UP AVEC LA PELLE POUR ÉLARGIR LA ZONE À IMPLANTER
- FINIR DE PLACER LES STAKES POUR LES LIMITES DU CLEAN UP
- SI ON A LES CAMIONS, ON POURRA COMMENCER À SORTIR LA MUCK MAIS ON ATTEND.

**OWNER:**

# LA HOSE DES BLASTERS EST ASSEZ LONGUE POUR LOADER À 25M.

Report By: [signature]

J:\Main Cell Road\Diversion Ditches\Template, Daily Meeting Report.xls\Sheet1

WEEKLY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012-08-23

**Time:** 8H30

**Presents:** YS, RB, EV, RC, CT

**Safety:**

Ø

**Weekly Advance (last week):**

**SANA:**

- DRILL PATTERN AVANCEMENT, UN PEU D'EAU ENVERS LE LAC MAIS ON NE PERD PAS LES TROUS NI DE PROBLÈME DE GEL ALORS ON A PU REPORTER LE BLAST A CE SOIR.
- PAS D'OPÉRATEUR DE PELLE POUR LA JOURNÉE MAIS UN DE NUIT QUI A FAIT DU CLEAN-UP. LE 06 SERA TERMINÉ ET ON POURRA COMMENCER LE 07.

**OWNER**

* ON A EU L'AUTORISATION DE L'ENVIRONNEMENT POUR "CASTER" LE CLEAN-UP DU CÔTÉ NORD, TEMPORAIRE SEULEMENT PUISQU'ON A PAS DE CAMION ENCORE. ON RETIRA LE SURPLUS APRES LE BLAST.

**General Planning (Next week):**

**SANA:**

→ TERMINER LE FORAGE DU 06, DYNAMITAGE A 00H00 CE SOIR
→ PAS D'OPERATEUR POUR LE CLEAN UP DE JOUR,
→ DÉBUT DU FORAGE SUR LE 07.

→ CAMIONS PRÉVUS POUR DANS JOURS.

**OWNER:**

**Report By:**

WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-24
Time: 8h30

Presents:

YS RC. RB. HG. FM. CT. TL.

Safety:

Ø

Weekly Advance (last week):

SANA:
- BLAST HIER À MINUIT DU 06 JUSQU'À LA RANGÉE 23
- CLEAN UP DE LA TUNDRA EN AVANCEMENT
- CLEAN UP DE LA FACE POUR PROCHAIN BLAST
- ILS ONT RÉUSSI À SORTIR L'ACIER DE DRILL AVANT LE BLAST.

OWNER

General Planning (Next week):

SANA:
- CONTINUITÉ DU PATRON 06 JUSQU'À LA FIN
- DÉBUT DU PATRON 07, IMPLANTATION AU FUR ET À MESURE, ON DEVRA SURÉMENT COUPER LE BLAST.
- COUPER LA TUNDRA DURANT CETTE NUIT.

OWNER: * - NOUS DEVRONS COMMANDER DES CAMIONS CHEZ ARCTIC FUEL POUR FAIRE AVANCER L'ÉVACUATION DE LA MUCK DE LA ZONE NP1 - NP2.

Report By:

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-08-25
**Time:** 8H30

**Presents:** Y.S, RC, FM, HG, CT RB.

**Safety:**

Ø

**Weekly Advance (last week):**

**SANA:**
- CONTINUITÉ DU PATRON DE FORAGE 45 TROUS TOTAL HIER.
- REFAIRE LE CLEAN UP DE LA TUNDRA, PAS ASSEZ DÉGAGÉ, CORRECTIFS FAIT
- LIMITE DE TEMP D'ATTENTE POUR LES CAMIONS RGL CE SOIR (24) AJUSTEMENT CE MATIN.

**OWNER**

**General Planning (Next week):**

**SANA:**
- OPÉRATEUR POUR EXCAVATRICE DE JOUR, CONTINUITÉ DU CLEAN UP
- CONTINUITÉ DU FORAGE, NOUS DÉCIDERONS SI ON DOIT COUPER LE BLAST AUJOURD'HUI.
- DESING DU PATRON 08 EN COURS,
- NOUS AVONS ATTAQUER LE CÔTÉ NP1-NP2, PATRON À FAIRE. CALCULER LES PROFONDEURS. LARGEURE DE 3M
- MARQUER L'ENLIGNEMENT DU CLEAN UP - CLEAN UP CETTE NUIT.

**OWNER:**

**Report By:** [signature]

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**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-08-27
**Time:** 8H30

**Presents:** YS, RC, RB, HG, FM, C.T.

**Safety:**

NO CONCERN (YESTERDAY MEETING WAS CANCELED)

**Weekly Advance (last week):**

**SANA:**

- LAKE WAS BREACH ON THE 26TH
- WATER IS LOWERING DOWN SLOWLY, SOME SEDIMENT RUNED WITH THE CURRENT BUT THIS MORNING WAS OK AND START TO CLEAN UP.
- CONTINUED DRILL PATERN 07, HARD ROCK 20 HOLES
- DID A SMALL OVERSPILL TRENCH FOR THE REOPENING OF THE LAKE.

**OWNER**

* LAKE WENT DOWN 0,03 cm
MP2: 26TH = 142,650 27TH: 142,620

**General Planning (Next week):**

**SANA:**

- STAKE OUT PATERN 08
- CONTINUING 07 (SHIFT CHANGE TODAY)
- MEETING WITH ENVIRONMENT FOR THE SEDIMENT
- MOOVE THE SHOVEL FURTHE BECAUSE THAT'S MUD, MABY IT'S OK WHERE IT GET HIGHER.

**OWNER:**

**Report By:** _____

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WEEKLY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-08-28

Time: 8H30

Presents: YS RB, RC, HG, DP, PD.

Safety:

Weekly Advance (last week):

SANA:
- DRILL PATTERN 07 DONE, 08 ON-GOING, WILL BLAST TOMORROW
- 365 DID SOME TEST FOR CLEAN UP BUT IT IS TOO MUDDY SO WILL BE PUT ON HOLD AND TRANSFER TO OTHER JOBS.

OWNER
- ENVIRONMENT APPROVED ALL OF THE SYSTEM THE ACTUAL FLOW IS OK AND SHOULD BE MAINTAIN. DAILY OBSERVATION WILL BE DONE TO REACT FAST IF SOMETHING HAPPENS.

WATER LEVEL: NP2: 142.572 NP1: 135.355

* NO FISH IN NP1:

General Planning (Next week):

SANA:
- DRILL PATTERN 08 WILL BE FINISHED, BLAST AT MIDNIGHT
- 09 WILL BE DRAW TODAY AND STAKE OUT TOMORROW.
- SHOVEL WILL DIG SOME ACCESS ON THE BLASTEMUCK TO
- BE READY AT TAKING OUT THE CAST ON THE TUNDRA

OWNER:
- WE WILL DIG OUT THE OUTTAKE OF NP2 LOWER TO ACCELERATE THE RUNNING OF THE DEWATERING.

- TURBIDITY CURTAIN WILL BE INSTALLED TODAY.

Report By: [signature]

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WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012-08-29
**Time:** 8H30

**Presents:** YS. HG, J.F, PD, DP. CT.

**Safety:**

**Weekly Advance (last week):**

**SANA:**
- Drill pattern blast at 00:45, face was cleaned up during the night
- We mooved the drill at the west end of ED2 section, it is dry so will moove the drill there after pattern 09.
- Access has been done on the muck to be able to get the castout on the tundra.

**OWNER**
- The lake was breach 5 inches yesterday afternoon,
- We installed the turbiditi barrier on NP1 shore.
* Environment accepted the procedures and the way we did the dewatering start up. We should keep this flow.

Water levels: NP2: 142.560 NP1: 135.408.

**General Planning (Next week):**

**SANA:**
- Finish pattern 08, start pattern 09
- Continue the clean up at west end, enlarge 2m because the bedrock is deeper than planified
- if possible, breach the lake at the end of the day.

**OWNER:**

Report By: _____

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-08-30
**Time:** 8h30

**Presents:** PG, DP, TD, JFB, HG, FM

**Safety:**

No concerns...

**Weekly Advance (last week):**

**SANA:** Dig blast patterns (futures) east till on tundra, going East from WS11
Drilling 50 holes continuation on pattern #9, need survey to continue blast tonight at 00:45
No operator on night shift

**OWNER** Re-open the lake yesterday to drain NP2 → NP1

**General Planning (Next week):**

**SANA:** Blast tonight at 00h45
Breach the NP2 at the end of the day
Continue casting till to free up the next patterns

**OWNER:**

Report By: _____

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WEEKLY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Aug 31st 2012
Time: 8h30
Presents: PG, DP, FM, JFB

Safety: No concerns

Weekly Advance (last week):

SANA: Drill & blast to water pond
Blasted 09-1
Breached the NP2 lake
OWNER Clean the patterns on the West portion, close to WS11

General Planning (Next week):

SANA: Clean next pattern with excavator,
Pump water for next pattern
Move pump to pump the water close to the drill
OWNER:
Will check to reduce the sub-drill with Blast Engineer

Report By: [signature]

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**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 1st 2012
**Time:** 8h30
**Presents:** PG, TD, DP, JFB, FM

**Safety:** No concerns

**Weekly Advance (last week):**

**SANA:** Breached NP2 lake at 18h00
Work on road access
Drill & blast pattern #9

**OWNER** Drill was down half day yesterday and still down this morning, see if blast tonight

**General Planning (Next week):**

**SANA:** No daysHift excavator operator
Work on improving the road access

**OWNER:** Blast pattern in the road ⇒ check with surveyor to restake the road access

**Report By:** [signature]

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**WEEKLY CONSTRUCTION MEETING**

**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 2nd 2012

**Time:** 8h30

**Presents:**

PG, DP, FM

**Safety:**

AEM ENG need to be advised before blasting
Not assuming we are blasting every 2 days
Need blast report for every blast

**Weekly Advance (last week):**

**SANA:** Tamrock broke yesterday morning → out for a couple days
Plan B → rock master being prepared
9928

**OWNER** Breached the lake, ↓ 5cm
Excavator mucked 1½ hour on pattern 8

**General Planning (Next week):**

**SANA:** No drilling, no blasting
Excavator mucking on pattern 8-7

**OWNER:**

Report By: _____

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 3rd 2012
**Time:** 8h30
**Presents:** JFD, DP, FM, PG

**Safety:**
No Concern

**Weekly Advance (last week):**

**SANA:** No drilling & blasting → broken Tamroc

**OWNER** Work on access road
Breached the lake last night → drawdown 12cm last day

**General Planning (Next week):**

**SANA:** No drilling for the next 48h → DP said might be ready on Thursday or Friday

**OWNER:** Breache the lake, cleaning of next pattern
Work on road access
108 & 1x773 & 1x345

Report By: _____

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**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 4th 2012
**Time:** 8h30
**Presents:** PG, FM, CT, LT, JKB

**Safety:** Respect speed limit on the road
Put signs (Stop or yield) at the junction of road with Vault Rd

**Weekly Advance (last week):**

**SANA:** No drilling & blasting → Drill broken until Saturday
Rock stock piling on the old camp

**OWNER** Improved access road with muck from the ditches
Breached lake → drawdown 12 cm/day

**General Planning (Next week):**

**SANA:** Mucking & Stripping 1x365, 1x345, 4x773 + 1 D6
Repair road with muck

**OWNER:** Breach the lake

Report By: [signature]

Dave Potvin

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 5th 2012
**Time:** 8h30

**Presents:** TD, FM, PG, JFB, DP, CT, LT

**Safety:** Make bumpers higher on lake side on the road

**Weekly Advance (last week):**

**SANA:** Stripping & excavating on North part, material on the waste dump
No drill & blast
Work on access road

**OWNER** Breached lake → drawdown of 5cm yesterday

**General Planning (Next week):**

**SANA:** Update on drill → part coming to FGL office today → maybe tomorrow
plan B: rockmaster ready Friday
Continue stripping & excavation

**OWNER:**
Breached lake on night

Report By: [signature]

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Tamroc situation

**WEEKLY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 6th 2012
**Time:** 8h30
**Presents:** PG, DP, JFB, [redacted], TD, CT, PD

**Safety:** Bumper along the road to be improved

**Weekly Advance (last week):**

**SANA:** Excavation of till & rock → rock go to reclaim
Preparation for next patterns
→ No blasting & drilling → parts here monday

**OWNER** Breached lake → dropped 9cm

**General Planning (Next week):**

**SANA:** Excavation till & rock on next pattern
Excavation of permafrost on West part of ED2 near lake WS22

**OWNER:** Will look for night shift on Rockmaster

**Report By:** [signature]

→ Rock master → Saturday at the best

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

AGNICO EAGLE

MEADOWBANK MINE

Date: Sept 7th 2012

Time: 8h30

Presents: DP, PG, TD, JFB, CT, PD

Safety:

Stop at the end of Culvert intersection of Vault

DailyAdvance (last 24h):

SANA: Excavation of muck → Sand material to waste

Stripping of till → waste dump

No drill & blast

OWNER Turbidity barrier installed on ED-2 → in NP2 lake to breach towards waste

Breached lake → hit bedrock, won't go down in NP2 further

General Planning (Next 24h):

SANA: Update on drill: part coming on Monday → Rockmaster tomorrow

Stripping, prepare channel for breaching

Clean till on NP2 outlet

OWNER: Hammer the sill on NP2 outlet maybe today

Report By: [signature]

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

AGNICO EAGLE

MEADOWBANK MINE

Date: Sept 9th 2012

Time: 6h30

Presents: PG, JFB, DP, TO, PD, CT

Safety:

Nothing to report

DailyAdvance (last 24h):

SANA: Clean till on WS22 lake remounding and Breached ~~[illegible]~~ trench in NP2 lake, No drill & blast

OWNER Breached lake NP2

General Planning (Next 24h):

SANA: Clean stripping around WS22 lake
Expose next blast & stripping of till
Fix road along trench → from culvert to NP2

OWNER: Breach NP2 lake until it flows over the rock

Report By: [signature]

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drill update: end of day or tomorrow morning. Tomsack just here monday on flight

**DAILY CONSTRUCTION MEETING**

**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** Sept 9th 2012

**Time:** 8h30

**Presents:** PG, TD, DP, JFB, PD, CT

**Safety:**

No concern

**DailyAdvance (last 24h):**

**SANA:** Stripping at West around WS99
Improve road along road between culvert & NP2
Muck till along NP2 lake

**OWNER** Breached lake

**General Planning (Next 24h):**

**SANA:** Till at culvert to stop water from flowing under
Continue stripping with 365

**OWNER:** Check for float at outlet of NP2

**Report By:**

X:\Overburden\Drawings\Site Data Planning\Templates\ Daily Meeting Report template

update on drill: should be ready tonight

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Sept 10th 2012

Time: 8h30

Presents: CT, PG, DP, JFB, PD

Safety:

No concern

DailyAdvance (last 24h):

SANA: Stripping completed along the entire length to WS 22
Prepare drill patterns
Clean muck/till along trench (NP2)

OWNER Blocked lake to work around culvert
No drill & blast

General Planning (Next 24h): → crew change

SANA: Put till cap around culvert
Start sloping from culvert to NP2

OWNER:

Report By: [signature]

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Update: drill ready → move it to site this morning

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Sept 11th 2012
Time: 8h30

Presents: MG - JFB - CT - CT

Safety:

→ No concern

DailyAdvance (last 24h):

SANA: - caping culvert with till - 20' slope
2 load till compacted bucket
No nigth sift

OWNER

Rose bureau → Fanny

General Planning (Next 24h):

SANA: - drilling done half pm
- call 2 shifts drill night / day
- profil channel NP1-N ⊗ NP2

OWNER: - blast pm or tonight ?? → Environment
coordination → Robin Ulard

Report By: _____

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Sept 12 / 2012
Time: 8h30

Presents: MG CT CT

Safety:

pancarte blast → blaster avisé

DailyAdvance (last 24h):

SANA: ~~Midi 30~~
14h30 : terminé la section du lac
move ED 2 + 10 move
profilage de jour de la section ED 1

OWNER blast avisé Midi 30 sept 12 / 2012

General Planning (Next 24h):

SANA: drilling : - installation demain matin
- drill à besoin d'un plan → Vincent
- blast à eau
- évaluer prochain blast → demain soir 18h30

night shift attente réparation aujourd'hui

OWNER: - continuer profilage
- night shift à venir pression pageau

→ By Pass demain matin

Report By: Michel

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 13 Sept 2012
Time: 8h30

Presents:
RC MG CT CT FM

Safety:

No concern

DailyAdvance (last 24h):

SANA: Drill : - plusieurs bris mecanique
- 22 trous
- implantation jusqu'au trou d'eau
Profilage : partie est 1 2 pelle
manque de muck pour le haut

OWNER Blast bien été
belle muck

General Planning (Next 24h):

SANA: Drill : drill sud load sujourd'hui
blast demain midi
Excavation : 1 pelle profilage de jour
Night sift peut être ce soir ?

OWNER:

si blast fonctionne pas demain midi
dempage en soirée pour blast demain
12h30

Report By: Michel G

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Night sift drill à confirmer

- loading
- survey blast ?
- dumping

**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** sept 14, 2012
**Time:** 8h30

**Presents:**

MG - CT - CT

**Safety:**

No concern

**DailyAdvance (last 24h):**

**SANA:**

- drilling 37 trous / temps ~~10~~h 7h30
- loader la nuit : sans rangé buffer
- continue à driller avec une rangé offset

**OWNER**

profilage
marché à une pelle
reste de l'équipe transfert de CD à Dike

**General Planning (Next 24h):**

**SANA:**

→ continuer profilage transfert pierre du nord de NP2 vers CD1

3x pelle + 4 truck
1 driller lundi (17 au 28/01) → 10 jours voir pour retour plus tard

**OWNER:**

→ blast aujourd'hui : midi
→ As built
→ pumpman → pumper North Cell

Report By: [signature]

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: Sept 15th, 2012
Time: 8h30

Presents: MG ~~PG~~ YS CT CT FM

Safety:

→ no concern

DailyAdvance (last 24h):

SANA:
- drilling 13 trous → blast midi
- Profilage 95% terminé EDI
- Relevé du canal : → Robert avait donnée

OWNER
- Décapage prochain blast (nettoyage)

General Planning (Next 24h):

SANA:
- Formation drilling CSST
- Nettoyage Route → ouest de la usée dump
- Stock pile

OWNER:
- Relâche des eau 15h30 → aviser environnement
- Meeting 9h30 terrain → decapage Nord nord
- blast lundi midi avant depart de Claude

Report By: Michel

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 16 Sept 2012
**Time:** 8h30

**Presents:** UG DP RC CT CT FM EV

**Safety:**

14 Trous loader → pas de pancarte

**DailyAdvance (last 24h):**

**SANA:**
- drilling 14 trous : training
  ajustage ok
- profilage : excavation tranchée 365
  filer route DC dentée waste dump
  345 ouvert IAC + profilage

**OWNER**

Nuit : sorti mort terrain ED2

**General Planning (Next 24h):**

**SANA:**
- continuer pompage
- excavation dentée drill → blast lundi
- profilage ED 2
- Breach digue dans ED 2 pour continuer

**OWNER:**
- continuer drilling → besoin d'un nouveau blast design

Equipement 24h : 2 pelles + 2 truck

**Report By:** Michel

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 17 sept 2012
Time: 8h30

Presents:
CT CT MG DP FM

Safety:

No concern
- Ajout de chandelle au lieu des bouchons
- Pancarte pour blast

DailyAdvance (last 24h):

SANA:
- 23 trous drilling : 2h30 formation
- journée
  - finaliser intake NP2
  - grade atteind début ED2 ~ 345
  - 365 excavation
  - frapper le bed rock blast 9 →

OWNER

Nuit
excavation nord complété

General Planning (Next 24h):

SANA:
- ferme le blast carré
- enligner vincent pour le prochain
- blast midi

OWNER:
Excavation ED2
Enpierrement ED3 → assurer

- envoyer ramasser pump → SS
- regarder descendre substrall de 0.5 m

Report By:

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ENVIR

→ barrière fin pm

→ pompe 4h11 pm

→ ramasser pipe North Cell

**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 18 sept 2012
**Time:** 8h30

**Presents:**

MG DP CT YS

**Safety:**

- drill = ok !
= pas de loading pour charger car poussière
- drill poussière → et pas de passage de truck près du chemin
↳ Drill waste dump

**DailyAdvance (last 24h):**

**SANA:** Drill
- loading ce matin
- pas d'helper au rendez vous → parler avec Fred
- drill hole 32j + 25N = 57

Excavator
- Apporter près du blast excav
- Nord excaver
- profilage début NP2

**OWNER**

NP2 = 141.62

**General Planning (Next 24h):**

**SANA:**
- blast demain midi
- empierrement ED3 et ED2 près de NP2 avant la route
- pickflage WD par Rafael

**OWNER:**
- 50% excavation de ED 2 fait
- Envoyer pompman → collecter pipe
- 345 Nuit WD
- Accès ouvert pour cette nuit → pompman

Report By: Michel

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**DAILY CONSTRUCTION MEETING**

**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-09-19

**Time:** 08h30

**Presents:** YS - DP - FM - CT.

**Safety:**

**DailyAdvance (last 24h):**

**SANA:** D/S Drill Holes = 41 N/S Drill Holes = 28
Niveau NP2 = 141.60 2cm depuis hier.

- Stripping terminé ED3, empierrement débuté 50% fait
- Stake installé pour stripping WD du nord au sud
- Pipe enlever à l'acces WD

**OWNER**

**General Planning (Next 24h):**

**SANA:**

- ouvrir le débit au lac
- Blast à 00:45 ce nuit vérif à 15 h00 pour les derniers trous
- Pattern 13 sera prêt cet après midi donc on pourra commencer à implanter
- ouvrir le lac aujourd'hui à 13 h 30

**OWNER:**

Report By: _____

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**DAILY CONSTRUCTION MEETING**

**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-09-20

**Time:** 8h30

**Presents:**

YS, CT, FM, SL, DP,

**Safety:**

**DailyAdvance (last 24h):**

**SANA:** → No BLAST LAST NIGHT, Drill BROKE DOWN ON THE PATTERN, SUPPOSE TO BE AT 12:45 THIS AFTERNOON.

→ EMPIERREMENT ED3 À 30%.
→ STRIPPING DU WD COMMENCÉ, 30% DU CANAL NORD-SUD FAIT (BESOIN DES ÉTÉVATIONS)

**OWNER**

TROU FORAGE D/S = 35
N/S = 13

N1NP2 : 141.530 (-7cm)

**General Planning (Next 24h):**

**SANA:** → CONTINUITÉ DU STRIPPING WD, DÉBUT DES ACCÈS POUR ALLER VERS LES CHIDETTES, PARTIR DU POINT BAS VERS LES POINTS HAUT (WEST À EST)
→ CONTINUITÉ DE L'EMPIERREMENT ED 3 AVEC L'ACCÈS AU LAC
→ PEUT-ÊTRE PAVUMIR LE LAC MAIS EN ATTENTE.

**OWNER:**

Report By: _____

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 21-09-2012

Time: 8:30 AM.

Presents:

RC, TL [AEM] CT, SL, LT, FM [SANA]

Safety:

- Nothing opened
- Thayer put some candle at the entrance of the East channel.

DailyAdvance (last 24h):

SANA: • Blast yesterday at 12:00 [Day] [pattern # 12]
• Tam rock is slowing [hydraulic pressure]
• Continue striping in West with 345

OWNER

General Planning (Next 24h):

SANA: • Possibilities of using the rockmaster instead of the Tamrock.
• Rock in blast # 12 [with 365] • Striping with 345 in West area.

OWNER: • More drill? More truck? Not necessary for the moment.

Report By: Thomas Lepine

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 22-09-2012

Time: 8:30 AM

Presents:

FM, RC, LT, SL, CT, [redacted] [SANA]
TL, RC [AEM]

Safety:

☒ Candles at tent entrance

☒ No problem at the work next to AWPR.

DailyAdvance (last 24h):

SANA: • Tamrock came back yesterday night:
day = 16 holes
night = 20 " " } nothing have been load } pattern # 13
• Best target is to blast monday at 12:00 PM.
• 365 muck in pattern #12 • 345 strip soil on West side)
• Start the deviation road next to AWPR [with 3 trucks and 345]

OWNER

↳ Communication between the drill/Blast engineer and the drill and blast foreman and the surveyor.

General Planning (Next 24h):

SANA: • Will need to start the 4" pump next to blast # 14
• Continue to drill on pattern # 13
• 345 Strip and 365 muck in blast # 12.

OWNER:

Report By: Thomas Lipsey

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 23-09-2012
Time: 8:30

Presents:
LT, SL, FT, CT [SANA] TL [HEM]

Safety:

- Cables along the Vault Road
- Night shift -> everything ok with work next to AWPR

DailyAdvance (last 24h):

SANA: 18 holes have been drill during day shift [pattern #13
9 holes " " " " night "
hydraulic hose have burst yesterday at 10:30 PM -> still not operational
Continue pattern #13 and complete it before blast.
Continue striping with 345 345 have completed the pattern #12
2X 50 tonnes day shift + 3X 50 tonnes night shift.

OWNER

General Planning (Next 24h):

SANA: 2 x 345 on striping on East side + 2 x 50 tonnes

OWNER: Pump - [illegible]

Report By: [signature]

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 24-09-2012
Time: 8:30 AM.

Presents:

CL, EM, SL, LT [SHNA] TL [AEM]

Safety:

☒ Nothing special
☒ Booster have been left on field yesterday by blaster crew.

DailyAdvance (last 24h):

SANA: ☒ Stuping with 2 x 345 next to AWPR ☒ Complete the deviation road on AWPR ☒ Rockfill Placement on channel. ☒ 14 holes on day shift ⊕ 20 holes on night shift ☒ 5 1/4 hours of itinerant - by on truck north. [Pattern # 13] ☒ Remove the lamp on pattern # 13. ↳ Blast tomorrow mid-day or at night

OWNER

General Planning (Next 24h):

SANA: ☒ 1 x 345 strip next to AWPR ☒ Afternoon → 1 x 740 [Operator will arrive today]

OWNER: ☒ Some equipment [50 tonnes] have left for Vault]
☒ Pump 4" next to pattern # 14 need to be operate at night.

Report By: Thomas Lepine

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 25-09-2012
Time: 8:30

Presents:
PD, DP, LT, SL [SANA] TL [AETI]

Safety:

☒ Position of the ramp vs charged holes → have to put the ramp at a good distance of holes.
☒ Booster have been left in place ... need to have a good discussion with the blaster crew.

DailyAdvance (last 24h):

SANA: ☒ Crew change yesterday [T] arrived (→ Turn back) (called on day shift and David Marchand for night shift] ☒ Stand by this morning with the Turn back ☒ Blast to-night at 12:45 [putting #13] ☒ 1X345

OWNER Sequence for blasting → Survey vs Blast time.

General Planning (Next 24h):

SANA: ☒ 1x 345 ⊕ 1x 740 today → Strip on west side

OWNER: ☒ Pump of Site serviced ☒ Move the dearam.

Report By: Thomas Lépine

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 26-09-2012

Time: 8:30 AM

Presents:

SB, TL [CIMA] DP, SL [SANA]

Safety:

- Nothing approved
- AWR → Culverts work → throw a bunch of rocks
  - advise meadowbank / Barbara later dispatch.

DailyAdvance (last 24h):

SANA: - 60 holes have been drill yesterday on pattern #15
- Blast yesterday mid-day [#13 and 14] pattern #15
- 1x 375 + 740 all day → night shift hunting
  → flow power issue

OWNER

General Planning (Next 24h):

SANA: - Complete pattern #15 → move west with two rocks
- 375 match blast #13 and #14 with one 50 tonne
  → stockpile match ⊕ slope
- 1x 375 ⊕ 1x 740 on culverts and AWPR.

OWNER: Check for pump 2" and 3"

Report By: Thomas Lépine

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 28-09-2012
Time: 8:30 AM

Presents:
JFB, TL [AEM] DP, PD, SL, RC [SANA]

Safety:

- Nothing special

DailyAdvance (last 24h):

SANA: - Complete blast #13 and #14 → yesterday night/Morning.
- Continue excavation on West side [Stripping]

OWNER

General Planning (Next 24h):

SANA: - Blast today at noon [#13 and #14] - Start at the #15 today after blast

OWNER: - Cut for blast at West
- Move the reacon. & pump

Report By: Thomas Lépine

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 28-09-2012
Time: 8 30

Presents:
RC, PD, SL, DP [SANA]
JB3, TC, [AEM]

Safety:

- Deviation works good
- Nothing else special

DailyAdvance (last 24h):

SANA: Drilling pattern # 15 @ extra → then move to west
Work on culvert with 3YJ @ 2x 740

OWNER

General Planning (Next 24h):

SANA: Day shift → culvert [3YJ + 2x 740] → Drill West

OWNER: Can you complete West side with drilling before moving East?

Report By: [signature]

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 29-09-2012
**Time:** 8:30 Am

**Presents:**
CT, DP, PT, SL
TL, JFB [AEM]

**Safety:**

☒ Nothing special

**DailyAdvance (last 24h):**

**SANA:** ☒ Work on culvert on AWPK [excavation] — 0-3/4" placement ☒ Continue stripping on WD4 section
☒ Drill on West side

**OWNER**

**General Planning (Next 24h):**

**SANA:** ☒ Work on culvert installation
☒ Drill at West then move East

**OWNER:** ☒ transfer 4" pump. on West side

Report By: Thomas Lepine

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MONICO EAGLE
MEADOWBANK MINE

**Date:** 30-09-2012
**Time:** 8:30

**Presents:**

SL, DP, YP, CT [JANH]
TL, JFB [AEM]

**Safety:**

- "matches" will be put on Blast # 17 [West Side]
- Nothing else special

**DailyAdvance (last 24h):**

SANA: Drill on blast # 17 in the morning then switch to pattern # 16 on East side [30 holes] Work on culvert on WPR [34J + 1 x 740] Night shift on Stream with [34J + 2x 740]

OWNER Find new pumps

**General Planning (Next 24h):**

SANA: Drill on pattern # 16 [East side]
Work on culvert [U = 3 1/4" placement]

OWNER: Need ramp

Report By: Thomas Lepine

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MONGO EAGLE
MEADOWBANK MINE

**Date:** 01-10-2012
**Time:** 8:30 AM

**Presents:**

JFB, TL [AEM]

SL, DP, CT, PT [SANA]

**Safety:**

- ☒ Mats on Blast #16 [West side]
- ☒ Nothing special

**DailyAdvance (last 24h):**

SANA: ☒ Work on culvert ~ 90% completed ☒ loader for mats handling
☒ Continue stormwater ramp and ramp for heater pump
↳ 2 × 34J + 2 × 740
☒ Drill on East side

OWNER

**General Planning (Next 24h):**

SANA: ☒ Blast #16 at mid-night

OWNER:

Report By: Thierry Lejeune

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 02-[illegible]-2012

Time: 8:30

Presents:

SFB, PG, TL [AEM]
DP, PD, CT, SL [SANA]

Safety:

☒ Blast at 12:45 mid-day → pattern #16 next AWPR

☒ Nothing special

DailyAdvance (last 24h):

→ 95% still need rockfill

SANA: • Work on culvert [completed] ☒ Bring some mat for blast pattern #16. ☒ Stopping up the East side [1x375]
⊖ Stormwater ditch zone - up to 150 for Boulder pile.
☒ Blast guard all night yesterday for pattern #16 pile 1.

OWNER

General Planning (Next 24h):

SANA: ☒ Put some reject on the Blast #16
⊖ 1x 375 on East side, 1x 375 on West.
⊖ Work on airstrip for night shift.

OWNER: Everything have been drill on East side

Report By: Thomas Lepine

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Lake elev. - 141,325

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 03-09-2012
Time: 8:30

Presents:
JFB, TL, MG [AEM]
PP, CT, JL [SANA]

Safety:

- Need to hold a meeting about the event of yesterday [Blast #17 when power type Lines at JD9
- → JHA about work on the dike [JD1]

DailyAdvance (last 24h):

SANA: Place some rejet on to of blast #17 Work on first dike [sloping and finalize channel] Finalization of the culvert and the AWPR Open AWPR tomorrow.

OWNER

General Planning (Next 24h):

SANA: Open AWPR Work in between AWPR and 3PL Excavation of the blast #17 Stripping of corner west Drilling during night shift. Load blast of #16 Maybe blast today at.

OWNER: Follow the loading short space.

Report By: Thierry [signature]

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 04-10-2012

Time: 8h30

Presents:

JFD PG DP MG FG PP AG

Safety:

- No concern

DailyAdvance (last 24h):

SANA: côte ouest : Calvette excavation
1 pelle en projet manque 1 chargeur
→ travailler sur le pad Stormwater Dike
- Slope coté ouest
- séparer tovette de la bonne pierre channel ED 2

OWNER Drill Blast : Drilling all hole started hier (20)
Reste 20 trous.

General Planning (Next 24h):

SANA: 1) verifier si on a grande à l'ouest → 2 pelle de nuit
2) George excavateur calvette
3) 1 pelle continuer examner reste du Blast

OWNER: → donner les coûts pour les 20 trous cette nuit.

Report By: [signature]

DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 05-10-2012
Time: 8h30

Presents:
DP UG DP FB JTB AG

Safety:

~~No concern~~

→ rémor : HS - Incident Report
- Blast SDI

DailyAdvance (last 24h):

SANA:
- Channel entre lake et AWR Done → silt fence posé
- décapage mit ~~entre~~ WD2
- test décapage après drilling et prend → non → need blasting 1.5 m
- 0.7 m à blaster sur ED2
- Drilling : blaster à test → ED blast last au complet

OWNER

General Planning (Next 24h):

JOUR | NUIT

SANA:
- ouvert colvert AWR | - décapage WD2
- ~~notri~~ fution ED → Grade | - drilling WD2

→ 13h30 → évaluation des RATES JFB + DP + UG + EV

OWNER:

Report By: _____

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 06-10-2012
**Time:** 8h30

**Presents:**
DP MG DP FB JFB AG

**Safety:**

No concern
Mardi pm 1h30 - Rencontre blast SD1

**DailyAdvance (last 24h):**

**SANA:**
- Drill 65 trous - trillée à 1.5 m
- trois de hausse vers 4h Am
- drillé tout les trous ouverté
- trois truck emulsion → ajouter sur la liste
  → stand-by

**OWNER** WD1 excavation empierrement
nettoyage WD 2 terreuse

**General Planning (Next 24h):**

**SANA:** excavation WD1 jour
empierrement
decapage de nuit WD 2

**OWNER:** drilling nuit
prochain blast → dessin mide
liée CSU Vincent et blast design

Report By: Michel Drolet

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MANGO EAGLE
MEADOWBANK MINE

Date: 04 - 10 - 2012
Time: 8h30

Presents: DP MG DP FB JFB AG

Safety:

No concern

DailyAdvance (last 24h):

SANA: Drilling : 50 trous / tout trous implanté.
→ MAX : 60 trous 1.5 m
Jour calveille
365 frappé un tolen entre SD1 et AWR

OWNER 345 dégagé till 50
Nuit excavation → Est
envoyé roche à l'est digue

General Planning (Next 24h):

SANA:
- George nettoye le coin
- digue tranchée pour rentrer la hausse du trait à l'endroit
- Arpenter les totems → vent peinture
- Vincent relevé fond Nact # 16 # 15 → demander dessin envoyé à Jean-Luc
- George finie la digue AM
- Après retour à SDG pour excavation
- Jocelyn → pompman S/S service

OWNER:

Report By: Michel Gaber

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 08-10-2012
Time: 8h30

Presents:

CT CT PT TFB MG DP
~~DR~~

Safety:

No concern

DailyAdvance (last 24h):

SANA: Drill ? 70 trous - 1.5 m
loading in process

Fausset. - excaver WD2
- excaver ED2 reste 4-5 jours → remblais
Remblais des slopes
OWNER 345 jour et nuit
- Remblais WD1
- chemin digue est remblais fait

General Planning (Next 24h):

SANA: - blast ± 00:45 a. ok avec changement sh drill
relève de blast AM
- Remblais culvert AMR au coin arrêt au terrain
OWNER: - cet remblais WD est → grade
- continue ED 2 345 jours et nuit
- remblais de nuit WD2

Report By: _____

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 09-10-2012
Time: 8h30

Presents: AG NG JFB CT DP DP

Safety:

Visit on site AEM : - PPE
- Sable with cell pour la glace
- Attention dans le canal à glace
- Attacher votre ceinture

DailyAdvance (last 24h):

SANA: Drill : ben calme + ~~[illegible]~~ loading par tonnal
Excavation. tours ED2 excavation + stemming 2
WDI
Not experiment up 2
vider le stock pile
pour experiment

OWNER

General Planning (Next 24h):

SANA: Drill and blast : - loading
- 2x toters drilling aujourd'hui drill
- stemming des toters + stemming blast
Excavation. = hauler de la muck experiment
- stemming ~~[illegible]~~ BLAST 16
- grue

OWNER:

/ → stemming avec tennant
→ Muck avec le pit → soap stone
drappé

Report By:

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012 - 10 - 18
Time: 8h30

Presents:
MG DP CT FM DP

Safety:

- Très glissant dehors
- Faire attention dans le channel

DailyAdvance (last 24h):

SANA: Drill: Blast 12h45 16 blast 2012/10/10
Drille des deux totems + totem → deuxième midi 2012/10/

~~Aujourd'hui~~ As Drill presque fini

OWNER FGL Excaver + enrigrement côté 16
gravier pour loader ~~g~~ sablage
1x 345 à Vault va Loader pour
Continuer loader les

General Planning (Next 24h):

SANA:

- Blast 12h45 #16 et 2 totems deuxième midi
- Steaming côté Est pour blast ce soir + matelas

OWNER:

- Enrigrement + excavation (Est)
- digue . début de l'excavation du toe à l'ouest

→ demande pour la grue (pm) – confirmation

Report By: _____

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

MONCO EAGLE
MEADOWBANK MINE

**Date:** 2012 - 10 - 11
**Time:** 8h30

**Presents:** UG - DP - CT - FM - DP - VS

**Safety:**

Driller : glissé sur sa laye (Joe Dicke)
intervenu + apparasse avec Luc
→ Terrain glissant, on continue à porter attention
→ Drill and Blast : nouveau survey des trous fait pas avec rapport de drilling

**DailyAdvance (last 24h):**

**SANA:** Drilling : Joe 2ième tour à l'est fait
30 trous dans l'autre
Reste 30 autres à drill

Côté est
Excavation + enlèvement till côté EST

**OWNER**

Pat K
- Marteau
- Blast demain 12h45
- Crane à 8h30 au vendredi

**General Planning (Next 24h):**

**SANA:** Début du steaming ce matin
2 gars sur la job à matin desire finir ce am avec George sur la perle.
Enlèvement côté Est

**OWNER:** Placer work final Est → Demain fini
Digguette Est : excavation fait ce soir : 6" + till excavé sur place →

Report By: [signature]

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 08-10-2012
Time: 8h30

Presents:
CT YS FM MG DP

Safety:

- Glissant
- Sabotage : équipement ok

DailyAdvance (last 24h):

SANA: Mock fausse' Est
Excaver ouest
Digue : 0-6" + excaver 2/3
eau avec pump dans le toe
Loader
OWNER - Stemen

General Planning (Next 24h):

SANA: - digue finir excaver complet
6". FM AM
till : Fin PM
- Stockpile RFI ok
OWNER: - Mock finir est
- Blast midi - Tam Rock
- Garage Maintenance
- matériaux AM + Déménagement

Report By:

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Michel

**DAILY CONSTRUCTION MEETING**

**NORTH CELL DIVERSION DITCHES**

MEADOWBANK MINE

**Date:** 2012-10-13

**Time:** 8h30 MG

**Presents:**

- DP DP AC JS MG

**Safety:**

Staff Safety

- glace neige
- Journal régulée pour toute clôture
- Sablage en permanence → vent
  → garder 8-10h sur pelle gravier en dessous de chaîne.

**DailyAdvance (last 24h):**

SANA: Drill and Blast

nuit: toker à l'est
soir: toker à l'ouest

OWNER: Équipement

Excavation côté Est
0-6" digguette fini

**General Planning (Next 24h):**

SANA: Drill - stand-by

Équipement: cate fonction → drill ou une pelle down
excavation ouest - à charger et pendant ceux

OWNER:

→ Trouver de la job à DANNY, Doug est correcte

Report By: Michel

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**DAILY CONSTRUCTION MEETING**
**NORTH CELL DIVERSION DITCHES**

AGNICO EAGLE
MEADOWBANK MINE

**Date:** 2012-10-14
**Time:** 8h30

**Presents:**
DP - FM - YS - MG

**Safety:**

- Glace, Carrier, Pelle
  → à Distance des pelles
  → Sablage Continue avec border modifié
  modifié avec Vault

**DailyAdvance (last 24h):**

FGL-SANA: - Excaver : → Blast 18 à l'ouest 60% done
Fonti: en valeur → Drilling
Possible de casser au tremac
OWNER Muck à stockpiler

→ Blast pattern → Eval

**General Planning (Next 24h):**

SANA:
- Excaver blast 18 → till
- Commencer l'emplacement
- Évaluation tremac / Drill pour

Est vérifier si d'autre bottom

OWNER:
- Vérifier chemin si on tasse → Nuit correction chemin
- 2 pelle pm ou de nuit
  → Drilling commence demain

**Report By:** Michel Gal

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DAILY CONSTRUCTION MEETING
NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012 - 10 - 15
Time: 8h30

Presents:
RC DP MG AM PC

Safety:

No accident → on continue attention
Stabilisage continue glace

DailyAdvance (last 24h):

SANA:
- Excavation tranchée + enrochement de nuit
- 2 ème toter à l'est
- Installation pompe
- ouest 4 toters

OWNER

General Planning (Next 24h):

SANA:
- Drilling à l'ouest 1st thing this morning objectif march midi si on met mercredi midi
- Jour : grade de la WD

OWNER: Nuit - till sur aiguette → stabé pour le till aujourd'hui

Report By: [signature]

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DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-10-16

Time: 8H30

Presents: YS. DP. FM. DP.

Safety: All GOOD, STILL SLIPPERY,

DailyAdvance (last 24h):

SANA:
- 30 HOLES WERE DONE, NO WATER, CUT 1.5M AND UP TO 1.8.
- TAKE OFF THE BERMS TO HELP AND AVOID BREAKING THE MACHINERY THIS WINTER.
- THE SMALL DIKE IS ALMOST DONE ~~SHOULD~~ A CHECK UP IS NEEDED TODAY.
- TILL IS ALMOST DONE, THEY TOOK IT FROM CENTRAL DIKE. SORTED WITH SHOVEL

OWNER

General Planning (Next 24h):

SANA.
- → DRILL IS DONE WEST PART - MOOVE TO EAST TO START DRILLING.
- → BRING STEMING AND SHOULD BE LOADED TODAY.
- → BLAST MINUIT 45. EAST SIDE ~~45~~. TOMOROW.
- → ROCK PLACEMENT (FINITION)

OWNER:
- → FINISH THE SMALL DIKE (2 LAYERS) + THE CANAL CONNECTION.

Report By

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 17. 10. 2012

Time: 8H30

Presents: JS. FM. DP. DP.

Safety: NO CONCERN.

DailyAdvance (last 24h):

SANA: - TAKE of THE BURM ON THE PIT SIDE TO PREVENT BREAKING MACHINERY WHEN IT WILL BE FROZEN.
- FINISH THE SLOPES AND BOTTOM GRADE AND PACKING ROCK.
- BLAST AT MIDNIGHT WENT PRETTY GOOD, NO ROCKS ON LINER.
- FINISH DRILLING AT EAST WEDGE.

OWNER - THE SMALL DIKE IS DONE, JUST A SMALL CHECK.

General Planning (Next 24h)

SANA:
- BLAST AT NOON EAST WEDGE.
- START EXCAVATING THE BLAST from YESTERDAY NIGHT (BOTTOM WILL BE DONE DURING THE DAY AND THE SLOPES AT NIGHT, NO SURVEY OK AT NIGHT)
- START THE GRADE ON THE EAST PATTERN.
- TOMORROW WE WILL BE GOOD TO OPEN THE LAKE

OWNER:

Report By

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012-10-18

Time: 8h30

Presents: - JS. fm. SL. RC -

Safety: NO CONCERN.

DailyAdvance (last 24h):

SANA:
- EAST WEDGE POP WAS BLAST AT NOON, WENT OK
- PROFILING THE LAST WEST PART, ALMOST DONE GRADE 0,2%
- NO ONE DURING THE NIGHT (ONLY ON THE TIL)
-

OWNER

General Planning (Next 24h).

SANA:
- FINISH THE WEST PART, PROFILING
- START EAST PART.
- REMOOVE THE TIRE MATRESS.

OWNER:
- OPEN THE LAKE (LAST ONE) ELEVATION ?

Report By

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

Date: 2012 10 19

Time: 8H30

Presents: YS. FM. SL.

Safety: * A BUMPER SHOULD BE BUILT NEAR SD1 TO PROTECT A CAR OR MACHINERY fall in THE TRENCH, IT IS HIGHER THAN 3M.

DailyAdvance (last 24h):

SANA:
- → WEST TRENCH IS COMPLETED AND GRADE ARE OK 0,2%
- → EAST TRENCH IS ON GOING GRADE will BE ADJUST WITH THE REST
- → NO WEDGE AT THAT PART.

NOTE: LAKE MUST BE OPENED WITH THE follow up of THE SLOPE GRADE of THE TRENCH THAT is CONNECTING TO THAT PART.

OWNER
- → FINALIZE THE BUMPER CUTTING.
- → MOOVE OUT THE FINE MATERESS

General Planning (Next 24h):

SANA:
- → MOOVE All THE REST of THE MATERESS.
- → finalize EAST PART 15M TO BE DONE.
- → open THE LAKE (SLOWLY) if POSSIBLE.
- → BUILD UP THE BERM from CORNER TO AWYR.

OWNER

Report By

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012-10-20

**Time:** 8H30

**Presents:** YS. SL. FM.

**Safety:** Ø

**DailyAdvance (last 24h):**

SANA: - EAST TRENCH HAS BEEN finalized

- WS22 LAKE HAS BEEN BREACH, THE ICE IS THICK AND WE CAN'T SEE THE LEVEL OF THE LAKE, THE WATER HAS flown DOWN CORRECTLY, THIS MORNING IT WAS ICED UP BUT STILL DRIPPING SLOWLY AT THE BREACH BUT NOT IN THE TRENCH ANYMORE.

OWNER - THE BUMPER NEAR SD1 IS ON GOING, SHOULD BE DONE BY TODAY

**General Planning (Next 24h):**

SANA - finish THE BUMPER. NOT work for all DAY.

- MAYBE CONNECT THE WEST TRENCH AT WS22.

OWNER:

Report By:

DAILY CONSTRUCTION MEETING

NORTH CELL DIVERSION DITCHES

MEADOWBANK MINE

**Date:** 2012-10-21

**Time:** 8H30

**Presents:** NO MEETING WAS HELD BECAUSE EVERYTHING WAS finished.
THIS IS THE REPORT OF THE LAST 24 HRS.

**Safety:** Ø NO CONCERN.

**DailyAdvance (last 24h):**

**SANA:**
→ finished THE BERM ON THE SECTION FROM THE WEST ELBOW UNTIL THE ANPM CULVERTS.
→ WE CONNECTED THE TRENCH AT THE WS22 LAKE (intake) THE GRADE is OK AND IS LOWER FROM THE INTAKE, DIFF = 0,4 m SO IT SHOULD follow THE WAY IT WAS PLANNED TO GO AT NP2 LAKE

OWNER

**General Planning (Next 24h):**

**SANA.** EVENTUALLY WE will BLOCK THE ACCESS TO THE TRENCH, VAULT ACCESS + SD1 SIDE ACCESS + RF2 ACCESS.

OWNER:

Report By

# CONSTRUCTION SUMMARY REPORT

# NORTH CELL DIVERSION DITCHES

# 2012

## APPENDIX D

## GOLDER DESIGN

AGNICO-EAGLE MINES LIMITED

MEADOWBANK GOLD PROJECT

# TECHNICAL MEMORANDUM

**DATE** August 24, 2012 **REFERENCE No.** 12-1221-0010, Doc 1370 Ver.0

**TO** Michel Groleau
Agnico Eagle Mines

**CC** Karine Doucet, Robert Millar, Dan Walker, João-Paulo Lutti

**FROM** Aytaç Göksu **EMAIL**

**RE: DETAILED DESIGN MEMORANDUM FOR SURFACE WATER DIVERSIONS ALONG THE NORTHERN PERIMETER OF THE MINE SITE - MEADOWBANK GOLD PROJECT, NUNAVUT**

Agnico-Eagle Mines (AEM) has requested Golder Associates Ltd. (Golder) undertake the detailed design of surface water diversion infrastructure located along the northern perimeter of the mine site at the Meadowbank Gold Project - Nunavut. The infrastructure (channel diversions and culvert road crossings) is required to divert non-contact surface water flow from entering the Tailings Storage Facility (TSF) and Portage Rock Storage Facility (PRSF).

A design basis memorandum (Golder, 2012a) presents the objectives, assumptions and concepts for the surface water diversion infrastructure detailed design and construction package.

This memorandum and the construction drawings comprise the construction package for the surface water diversion infrastructure. This detailed design memorandum summarises hydraulic sizing results for the water management structures presented in the construction drawings and is to be read in conjunction with the construction drawings (Golder, 2012b). Volume estimates have also been included in this memorandum.

## 1.0 PROPOSED DIVERSIONS HYDRAULIC SIZING

Tables 1 and 2 provide the design dimensions for the western and the eastern diversions, respectively, as well as required $D_{50}$ for erosion protection material (rip-rap) to line the diversions. Table 3 provides the design dimensions for the culvert road crossings. The culvert road crossings are designed to prevent surcharge of the inlet assuming that the culverts are maintained free from accumulated materials that could present a barrier to the flow (sediments, snow, ice, etc).

**Golder Associés Ltée**
1001 Blvd. de Maisonneuve West, 7th floor, Montreal (Québec) H3A 3C8
Tel: +1 (514) 383-0990 Fax: +1 (514) 850-2401 www.golder.com
**Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America**

**Table 1: Western Diversion Design Dimensions**

| | Discharge | approx. Chainage | | Bed slope | Bed width | Side slope | Depth | Rip-Rap $D_{50}$ |
|---|---|---|---|---|---|---|---|---|
| | Q | start | end | Sb | b | Ss=H:V | D | $D_{50}$ |
| **Section** | $m^3/s$ | m | m | % | m | m/m | m | mm |
| **WD-1** | 2.0 | 1280 | 1170 | -1.65% | 0.5 | 3 | 1.0 | 150 |
| | | 1170 | 1050 | -0.35% | 0.5 | 3 | 1.5 | 150 |
| **WD-2** | 3.3 | 1050 | 570 | -0.35% | 0.5 | 3 | 1.5 | 150 |
| | | 570 | 320 | -0.35% | 3.0 | 3 | 1.3 | 150 |
| **WD-3** | 4.8 | 320 | 275 | -0.35% | 3.0 | 3 | 1.3 | 150 |
| | | 275 | 145 | -7.00% | 3.0 | 3 | 1.1 | 450 |
| | | 145 | 135 | -0.01% | 3.0 | 3 | 1.1 | 450 |
| | | 135 | 130 | -2.00% | 3.0 | 3 | 1.1 | 150 |
| | | 105 | 10 | -3.41% | 3.0 | 3 | 1.1 | 250 |
| | | 10 | 0 | -1.00% | 3.0 | 3 | 1.1 | 150 |

**Table 2: Eastern Diversion Design Dimensions**

| | Discharge | approx. Chainage | | Bed slope | Bed width | Side Slope | Depth | Rip-Rap $D_{50}$ |
|---|---|---|---|---|---|---|---|---|
| | Q | start | end | Sb | b | Ss=H:V | D | $D_{50}$ |
| **Section** | m3/s | m | m | % | m | m/m | m | mm |
| **ED-1** | 0.9 | 2230 | 1770 | -0.50% | 0.5 | 2 | 1.1 | 150 |
| | | 1770 | 1725 | -2.00% | 0.5 | 2 | 1.1 | 150 |
| **ED-2** | 3.9 | 1490 | 1430 | -0.50% | 3.0 | 3 | 1.2 | 150 |
| | | 1430 | 1305 | -3.00% | 3.0 | 3 | 1.2 | 250 |
| | | 1305 | 800 | -0.50% | 3.0 | 3 | 1.2 | 150 |
| | | 800 | 780 | -5.00% | 3.0 | 3 | 1.0 | 250 |
| | | 780 | 725 | -1.00% | 3.0 | 3 | 1.0 | 250 |
| **ED-3** | 2.9 | 295 | 120 | -1.35% | 3.0 | 3 | 1.0 | 150 |
| | | 120 | 90 | -2.50% | 3.0 | 3 | 1.0 | 150 |
| | | 50 | 10 | -4.67% | 3.0 | 3 | 1.0 | 250 |
| | | 10 | 0 | -1.00% | 3.0 | 3 | 1.0 | 150 |

**Table 3: Culverts Hydraulic Sizing**

| Culvert | Description | Design Flow ($m^3/s$) | Diameter (mm) | Slope (%) | Approximate Length (m) | Embedment Depth (m) | Control Type |
|---|---|---|---|---|---|---|---|
| WD-3 | no embedment and no inlet surcharge | 4.8 | 1800 | 2.0 | 25.0 | 0.00 | inlet |
| ED-3 | | 2.9 | 1500 | 2.5 | 40.0 | 0.00 | inlet |

## 4.0 CONCLUSION

The design values presented herein are based on assumptions and information described in the design basis memorandum (Golder, 2012a and accompanying construction drawings (Golder, 2012b). This memorandum should be read in conjunction with these documents.

We trust that the information contained in this design basis memorandum meets your requirements at this time. Should you have any questions, please contact the undersigned.

**GOLDER ASSOCIÉS LTÉE**

REGISTERED PROFESSIONAL ENGINEER
Aug 24, 2012
D.R. WALKER
LICENSEE
NWT/NU

Aytaç Göksu, M.Eng., M.Sc.
Water Resources Specialist

Dan R. Walker, Ph.D., P.Eng.
Associate/Water Resources Engineer

Robert Millar, Ph.D., P.Eng/P.Geo
Senior Hydrotechnical/Water Resources Engineer

AG/DW/RM/no

\\mon1-s-filesrv1\data\actif\2012\1221\12-1221-0010 aem meadowbank-sw diversions detailed design\6 deliverables issued\doc 1370 -1212210010 0615_12 mem swd detailed design - mb ver 0.docx

## 5.0 REFERENCES

EC, 2011 – IDF data (rainfall statistics based on 1987-2006 data), Baker Lake A station (Environment Canada, May 2012)

Golder, 2011 – Updated Water Management Plan, Meadowbank Gold Project (Golder Associates Ltd., Aug 2011)

Golder, 2012a – Design Basis Memorandum for the Detailed Design of Surface Water Diversions along the Northern Perimeter of the Mine Site, Meadowbank Gold Project (Golder Associates Ltd., May 2012)

Golder, 2012b – Surface Water Diversions Drawings for construction, Meadowbank Gold Project (Golder Associates Ltd., July 2012)

## 2.0 ESTIMATED BILL OF QUANTITY

Table 4 below presents an estimate of excavation and fill quantities for each material encountered and required, based on topographical and depth to rock information provided by AEM.

**Table 4: Estimated bill of quantity**

| | | VOLUMES in $m^3$ | |
|---|---|---|---|
| **STRUCTURE** | **MATERIAL** | **WESTERN DIVERSION** | **EASTERN DIVERSION** |
| Diversion Erosion Protection Layer | riprap $D_{50}$ = 150 mm | 3300 | 4500 |
| | riprap $D_{50}$ = 250 mm | 500 | 200 |
| | riprap $D_{50}$ = 450 mm | 1700 | 0 |
| Side Berm | General rockfill | 1100 | 2400 |
| Cut-Off | Till | 1700 | 900 |
| | General rockfill (till protection) | 5800 | 0 |
| Access Road | Carriage layer | 900 | 8400 |
| | General rockfill | 1300 | 9400 |
| Excavation | soil | 12600 | 27800 |
| | rock | 6900 | 1400 |

## 3.0 MAINTENANCE RECOMMENDATIONS

It is recommended that the diversions be inspected regularly:

- at least once a month throughout the year;
- once every two days during the freshet; and
- daily when precipitation exceeds 10 mm of rainfall in a 24-hour period.

Significant quantities of sediments, snow and ice observed within the diversions (culverts included) with the potential to block flow will require removal to maintain flow capacity. The origin of sediment, snow or ice accumulations should be investigated to identify additional measures that may need to be taken to avoid or limit potential reoccurrence.

Maintenance and/or repair of the diversions may be required. Ongoing monitoring of the diversion function, including maintenance and repair, and the location, timing and frequency of accumulated materials removal within the system, will assist in preparing for closure of the site.

AEM has decided not to include geotextile beneath the rip rap layer in the diversion channels. As a result, periodic reshaping and maintenance of the diversions, including the addition of rip-rap material and control of suspended sediments, may be required during diversion operations.

# AGNICO-EAGLE MINES LIMITED

## MEADOWBANK GOLD PROJECT

# SURFACE WATER DIVERSIONS

### DRAWING INDEX

| DWG NO. | DRAWING TITLE | REVISION | REVISION TITLE | DATE |
|---|---|---|---|---|
| SWD-01 | MEADOWBANK PROJECT LOCATION MAP AND DRAWING INDEX | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-02 | PLAN VIEW | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-03 | WESTERN DIVERSION (WD) LONGITUDINAL SECTION | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-04 | WESTERN DIVERSION (WD) TYPICAL CROSS-SECTIONS | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-05 | EASTERN DIVERSION (ED) LONGITUDINAL SECTION | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-06 | EASTERN DIVERSION (ED) TYPICAL CROSS-SECTIONS | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |
| SWD-07 | SPECIFIC STRUCTURE DETAILS AND GENERAL SPECIFICATIONS | 0 | ISSUED FOR CONSTRUCTION | 24JULY12 |

### TECHNICAL SPECIFICATIONS INDEX

| SECTION NO. | SECTION TITLE | REVISION | REVISION TITLE | DATE |
|---|---|---|---|---|


KEY PLAN

### NOTES

1) IT IS THE RESPONSIBILITY OF THE USER OF THIS DRAWING TO ENSURE THAT THE MOST RECENT REVISION IS BEING USED.
2) THE INFORMATION PROVIDED ON THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE MOST RECENT REVISION OF THE TECHNICAL SPECIFICATIONS LISTED ON SWD-07. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE FAMILIAR WITH THE SCOPE OF WORK, THE DRAWINGS, AND THE GENERAL SPECIFICATIONS

ISSUED FOR CONSTRUCTION

PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

TITLE: MEADOWBANK PROJECT LOCATION MAP AND DRAWING INDEX

| REV | DATE | DES | REVISION DESCRIPTION | DRN | CHK | APP |
|---|---|---|---|---|---|---|
| A | 24JULY12 | AG | ISSUED FOR CONSTRUCTION | RG | AG | |
| A | 10MAY12 | AG | ISSUED FOR CLIENT REVIEW | RG | AG | |

DRAWING NO. | REPRODUCES

REGISTERED PROFESSIONAL ENGINEER
24 July 2012
D.R. WALKER
LICENSED
NWT/NU

Golder Associates

| | | | | | |
|---|---|---|---|---|---|
| PROJECT No. | 12-1224-0010 | | FILE No. | 1212120010-2100-001 | |
| DESIGN | AG | 8MAY12 | SCALE | AS SHOWN | REV 0 |
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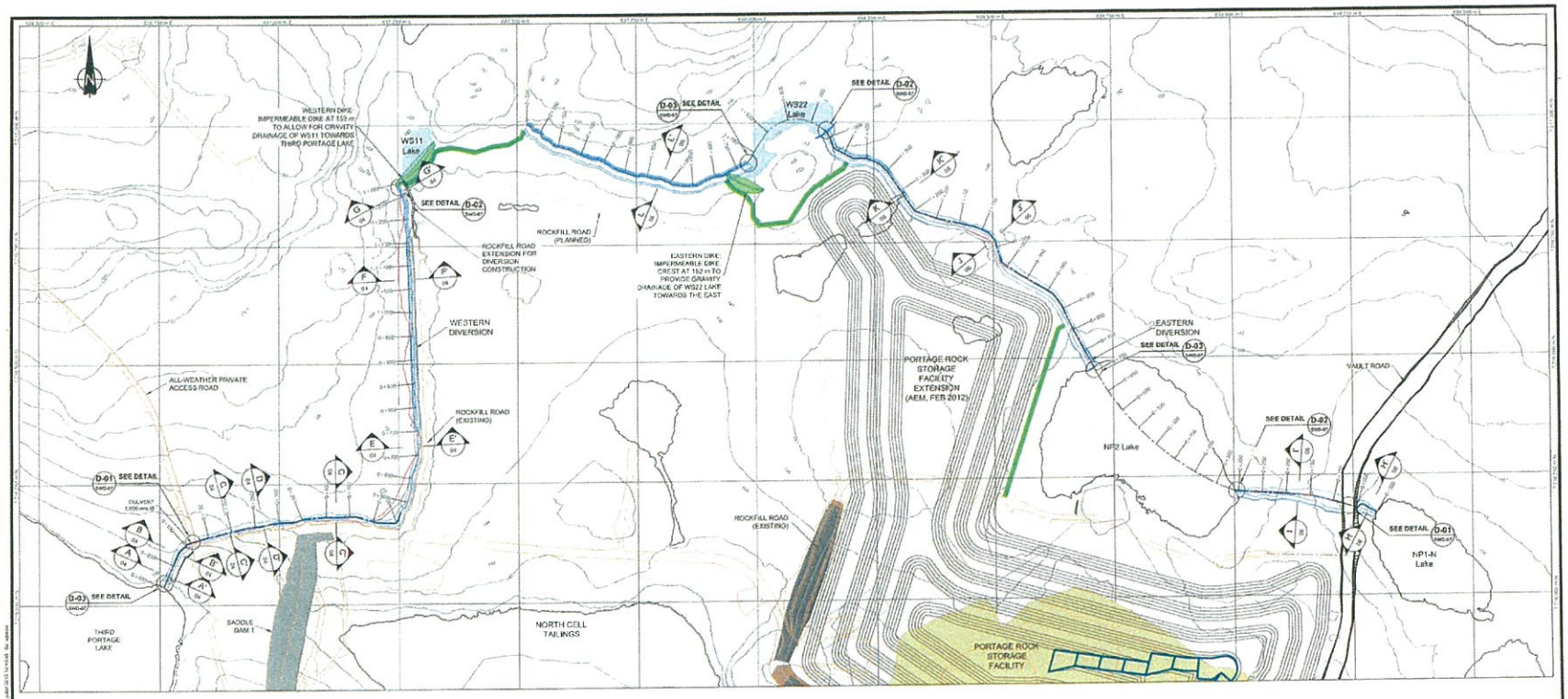
| REVIEW | DRW | 8MAY12 | | | |




## LEGEND

- MAJOR CONTOURS INTERVAL 5 m
- MINOR CONTOURS INTERVAL 1 m
- EXISTING ROAD (INFRASTRUCTURE)
- ALIGNMENT OF BEDROCK LEVEL INVESTIGATION (AEM, MARCH 2012)
- PROPOSED EXTENSION FOR THE PORTAGE ROCK STORAGE FACILITY (BY OTHERS)
- SUGGESTED CONNECTION ROAD (NOT PART OF THIS DESIGN)
- PROPOSED DIVERSION
- IMPOUNDMENT FOOTPRINT AT OUTLET LEVEL
- PROPOSED IMPERMEABLE DIKE/BERM

**ISSUED FOR CONSTRUCTION**



PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

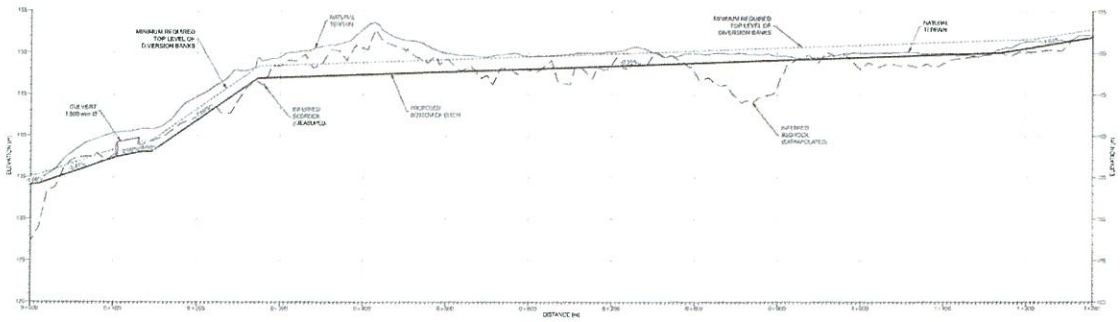
# PLAN VIEW

| REV | DATE | DES | REVISION DESCRIPTION | CHKD | CHK | APPV |
|---|---|---|---|---|---|---|
| A | 26 JUL 12 | AG | ISSUED FOR CONSTRUCTION | AG | AG | DRW |
| A | 10 MAR 12 | AG | ISSUED FOR CLIENT REVIEW | AG | AG | DRW |

REGISTERED PROFESSIONAL ENGINEER
29 July 2012
D.R. WALKER
LICENSEE
NWT/NU

Golder Associates

| | | | | | |
|---|---|---|---|---|---|
| PROJECT NO | 12-1221-0063-3100 | | | TITLE No. | 1221221003-3100-002 |
| DESIGN | AG | 6MAR12 | | SCALE | AS SHOWN |
| CADD | AG | 6MAR12 | | REV | 0 |
| CHECK | AG | 6MAR12 | | SWD-02 | |
| REVIEW | JHA/DRW | 8MAR12 | | | |




## PROFILE STA: 0+000 TO 1+290

(HORIZONTAL SCALE 1:2,500; VERTICAL SCALE 1:250)

### NOTES

1. NATURAL TERRAIN ELEVATION IS APPROXIMATE, AS IT IS A MIX OF LiDAR INFORMATION (2011) AND GROUND SURVEY INVESTIGATIONS (2011, 2012) BY OTHERS.
2. BEDROCK LEVEL IS APPROXIMATE DUE TO CHANGES IN THE DIVERSION ALIGNMENTS AFTER COMPLETION OF THE DRILLING INVESTIGATION (AEM, MARCH 2012). IN PARTICULAR, BEDROCK ELEVATIONS ARE ESTIMATED FROM CHAINAGE 0+500 TO THE UPSTREAM END OF THE WESTERN DIVERSION.
3. ALL WEATHER PRIVATE ROAD (AWPR) PROFILE HAS BEEN ESTIMATED FROM PARTIAL TOPOGRAPHICAL INFORMATION. LENGTH AND LOCATION OF CULVERT MAY REQUIRE ADJUSTMENT DEPENDING ON ACTUAL SITE CONDITIONS.
4. LAKE WATER LEVEL TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION. INLET/OUTLET DESIGN MAY REQUIRE ADJUSTMENT DEPENDING ON THIS INFORMATION.
5. WHERE ROCK BLASTING IS NECESSARY TO MEET THE DESIGN AS SHOWN IN THESE DRAWINGS, IT IS ADVISED TO CONSTRUCT A NEAR VERTICAL TRENCH OF A MINIMUM WIDTH OF 3 M (SEE SWD-04 FOR CROSS-SECTION DETAILS). FOR SAFETY PURPOSES AND TO ALLOW FOR INSPECTION AND MAINTENANCE MACHINERY ACCESS, IT IS ALSO ADVISED TO INSTALL SAFETY GUARDS (FENCES FOR INSTANCE) AS A SAFETY MEASURE TO LIMIT RISK OF FALL INTO THE EXCAVATED TRENCH.



ISSUED FOR CONSTRUCTION

PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

TITLE: WESTERN DIVERSION (WD)
LONGITUDINAL SECTION

| DRAWING NO | REFERENCES |
|---|---|

| REV | DATE | DES | REVISION DESCRIPTION | CADD | CHK | RVW |
|---|---|---|---|---|---|---|
| 2 | 24MAY12 | AG | ISSUED FOR CONSTRUCTION | RS | AG | RMCRW |
| 1 | 12MAY12 | AG | ISSUED FOR CLIENT REVIEW | RS | AG | RMCRW |

STAMP: REGISTERED PROFESSIONAL ENGINEER, 24 July 2012, D.R. WALKER, LICENCE, NWT

Golder Associates

| | | | | |
|---|---|---|---|---|
| PROJECT No | 12-1221-0019-3100 | | FILE No | 12122130193100-001 |
| DESIGN | AG | 8MAY12 | SCALE | AS SHOWN |
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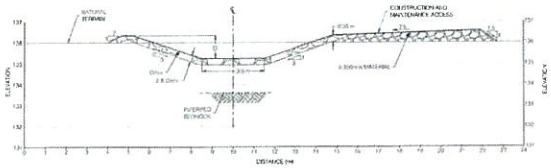
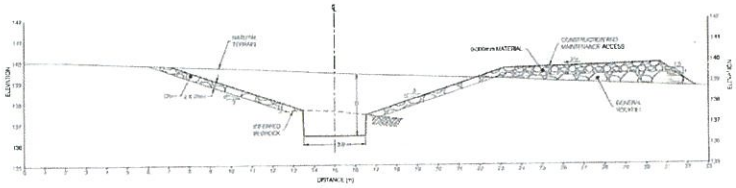
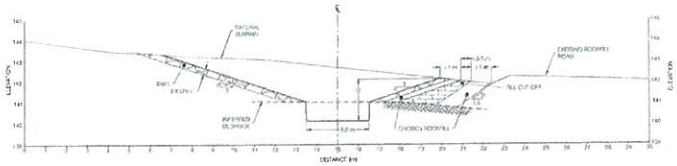
| CHECK | AG | 8MAY12 | SWD-03 | |
| REVIEW | RMCRW | 8MAY12 | | |



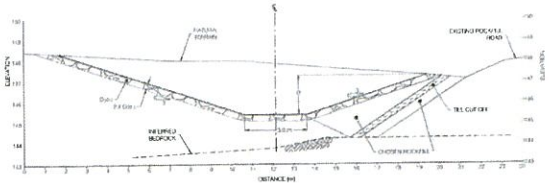
A-A' 02 **CROSS-SECTION A-A' (at 0+025)**
**TYPICAL FOR STA: 0+016 to 0+037**
SCALE 1:100



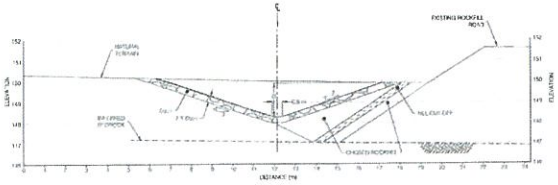
B-B' 02 **CROSS-SECTION B-B' (at 0+076)**
**TYPICAL FOR STA: 0+037 to 0+104**
SCALE 1:100



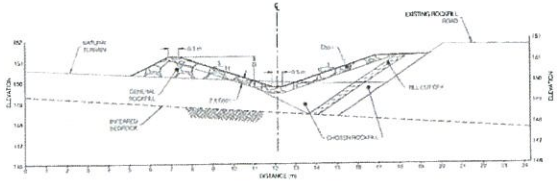
C-C' 02 **CROSS-SECTION C-C' (at 0+195)**
**TYPICAL FOR STA: 0+130 to 0+224 and 0+277 to 0+570**
SCALE 1:100



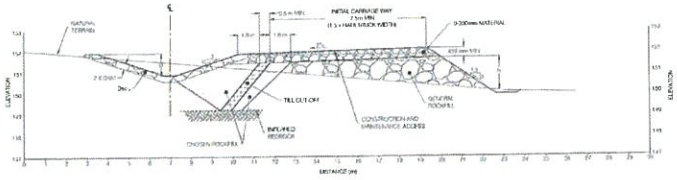
D-D' 02 **CROSS-SECTION D-D' (at 0+268)**
**TYPICAL FOR STA: 0+224 to 0+277**
SCALE 1:100



E-E' 02 **CROSS-SECTION E-E' (at 0+718)**
**TYPICAL FOR STA: 0+570 to 0+752**
SCALE 1:100



F-F' 02 **CROSS-SECTION F-F' (at 1+070)**
**TYPICAL STA: 0+752 to 1+158**
SCALE 1:100



G-G' 02 **CROSS-SECTION G-G' (at 1+260)**
**TYPICAL FOR STA: 1+158 to 1+280**
SCALE 1:100

**NOTES:**

1. BEDROCK ELEVATION SHOWN CORRESPONDS TO THE EXTRAPOLATED DATA (AEM INVESTIGATION, MARCH 2012) AT THE LOCATION OF EACH CROSS-SECTION.
2. INITIAL CARRIAGE WAY DESIGNED BY OTHERS.
3. D50s: SEE TABLE ON DRAWING SWD-07.
4. D (MINIMUM DEPTH REQUIRED): SEE TABLE ON DRAWING SWD-07.
5. ASSUMPTIONS MADE REGARDING STABLE SLOPES:

| | |
|---|---|
| EXCAVATION IN SOIL IN PLACE | 2:1 |
| PLACED ROCKFILL | 1.5:1 |
| PLACED TILL | 1.5:1 |

6. CHOSEN ROCKFILL IS MADE OF GRADED GENERAL ROCKFILL FOR TILL CUT-OFF PROTECTION.
7. ALL MATERIAL USED FOR CONSTRUCTION SHALL BE NON AG, NON METAL LEACHING, NON ICE-RICH AND NON-SATURATED.
8. UPSTREAM BERM NOT TO BE CONSTRUCTED AT THALWEG LOCATIONS AND WHERE CONCENTRATED INFLOWS FROM THE UPSTREAM SIDE INTO THE DIVERSION ARE EXPECTED (TO BE LOCATED IN THE FIELD).

ISSUED FOR CONSTRUCTION



DRAWING NO. | REFERENCES

| REV | DATE | DES | REVISION DESCRIPTION | CADD | CHK | REVIEW |
|---|---|---|---|---|---|---|
| 2 | 24MAY12 | AG | ISSUED FOR CONSTRUCTION | AG | AG | DRW |
| 1 | 18MAY12 | AG | ISSUED FOR CLIENT REVIEW | AG | AG | RHDRW |

REGISTERED PROFESSIONAL ENGINEER — 24 July 2012 — D.R. WALKER — LICENSEE — NWT/NU

PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

TITLE: **WESTERN DIVERSION (WD) TYPICAL CROSS-SECTIONS**

Golder Associates

| | | | | | |
|---|---|---|---|---|---|
| PROJECT No. | 12-1224-0016-3100 | | FILE No. | 12122(0016-3100-001 | |
| DESIGN | AG | 18MAY12 | SCALE | AS SHOWN | REV. 0 |
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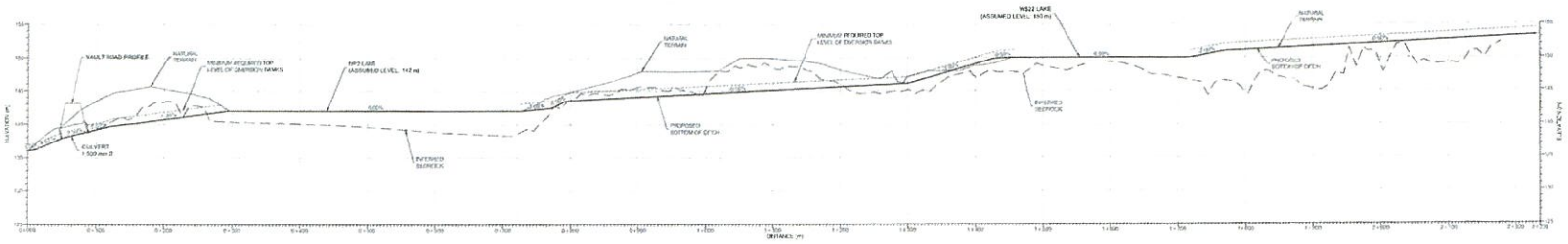
| CHECK | AG | 18MAY12 | | | |
| REVIEW | RHDRW | 18MAY12 | | | |




## PROFILE STA: 0+000 TO 2+230

(HORIZONTAL SCALE 1:3,000 VERTICAL SCALE 1:300)

### NOTE

1. NATURAL TERRAIN ELEVATION IS APPROXIMATE AS IT IS A MIXED LIDAR INFORMATION (2011) AND GROUND SURVEY INVESTIGATIONS (2011, 2012) BY OTHERS.
2. BEDROCK LEVEL IS APPROXIMATE DUE TO CHANGES IN THE DIVERSION ALIGNMENTS AFTER COMPLETION OF THE DRILLING INVESTIGATION (AEM, MARCH 2012).
3. VAULT ROAD (VR) PROFILE HAS BEEN ESTIMATED FROM PARTIAL TOPOGRAPHICAL INFORMATION, AS DISCUSSED WITH AEM (APRIL 2012). LENGTH AND LOCATION OF CULVERT MAY REQUIRE ADJUSTMENT DEPENDING ON ACTUAL SITE CONDITIONS.
4. LAKE WATER LEVELS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION. INLET/OUTLET DESIGN MAY REQUIRE ADJUSTMENT DEPENDING ON THIS INFORMATION.
5. WHERE ROCK BLASTING IS NECESSARY TO MEET THE DESIGN AS SHOWN IN THESE DRAWINGS, IT IS ADVISED TO CONSTRUCT A NEAR VERTICAL TRENCH OF A MINIMUM WIDTH OF 3 M (SEE SWD-06 FOR CROSS SECTION DETAILS). FOR SAFETY PURPOSES AND TO ALLOW FOR INSPECTION AND MAINTENANCE MACHINERY ACCESS, IT IS ALSO ADVISED TO INSTALL SAFETY GUARDS (FENCES FOR INSTANCE) AS A SAFETY MEASURE TO LIMIT RISK OF FALL INTO THE EXCAVATED TRENCH.



ISSUED FOR CONSTRUCTION

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

# EASTERN DIVERSION (ED) LONGITUDINAL SECTION

| REV | DATE | DES | DESCRIPTION | CADD | CHK | APR |
|---|---|---|---|---|---|---|
| A | 11MAY12 | AG | ISSUED FOR CONSTRUCTION | RG | AW | DRW |
| A | 10APR12 | AG | ISSUED FOR CLIENT REVIEW | AG | AC | RM/DRW |

DRAWING NO. | REFERENCES

REGISTERED PROFESSIONAL ENGINEER — 24 July 2012 — D.R. WALKER — LICENSEE

Golder Associates

| | | | | | |
|---|---|---|---|---|---|
| PROJECT No. | 12-1211-0010-3100 | | FILE No. | 12121001013100-001 | |
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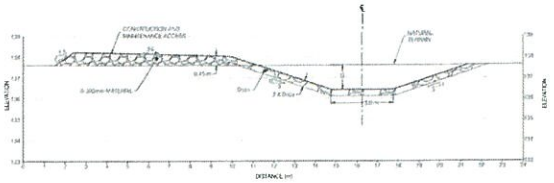
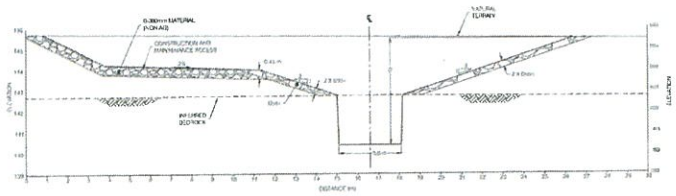
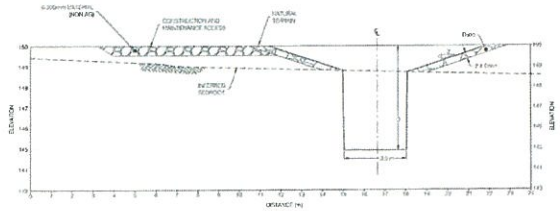
| REVIEW | RM/DRW | 8MAY12 | | | |



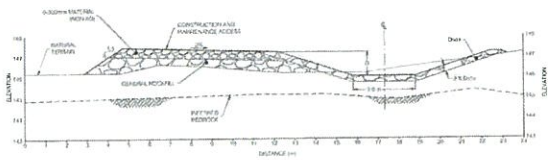
**CROSS-SECTION H-H' (at 0+017)**
**TYPICAL FOR STA: 0+000 to 0+110, 0+260 to 0+308, 0+708 to 0+794, 1+200 to 1+280 and 1+300 to 1+427**
H-H' / 02 SCALE 1:100



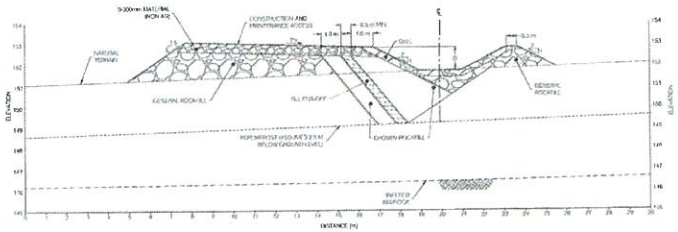
**CROSS-SECTION I-I' (at 0+174 )**
**TYPICAL FOR STA: 0+110 to 0+260**
I-I' / 02 SCALE 1:100



**CROSS-SECTION J-J' (at 1+070)**
**TYPICAL FOR STA: 0+794 to 1+200**
J-J' / 02 SCALE 1:100



**CROSS-SECTION K-K' (at 1+290)**
**TYPICAL FOR STA: 1+280 to 1+300 and 1+427 to 1+451**
K-K' / 02 SCALE 1:100



**CROSS-SECTION L-L' (at 1+890)**
**TYPICAL FOR STA: 1+723 to 2+238**
L-L' / 02 SCALE 1:100

**NOTES:**

1. BEDROCK ELEVATION SHOWN CORRESPONDS TO THE EXTRAPOLATED DATA (AEM INVESTIGATION, MARCH 2012) AT THE LOCATION OF EACH CROSS-SECTION
2. INTAKE CARRIAGE WAY DESIGNED BY OTHERS
3. D50%: SEE TABLE ON DRAWING SWD-07.
4. D (MINIMUM DEPTH REQUIRED): SEE TABLE ON DRAWING SWD-07.
5. ASSUMPTIONS MADE REGARDING STABLE SLOPES:

| | |
|---|---|
| EXCAVATION IN SOIL IN PLACE | 2:1 |
| PLACED ROCKFILL | 1.5:1 |
| PLACED TILL | 1.5:1 |

6. CHOSEN ROCKFILL IS MADE OF GRADED GENERAL ROCKFILL FOR TILL CUT-OFF PROTECTION
7. ALL MATERIAL USED FOR CONSTRUCTION SHALL BE NON AG, NON METAL LEACHING, NON ICE-RICH AND NON-SATURATED
8. UPSTREAM BERM NOT TO BE CONSTRUCTED AT THALWEG LOCATIONS AND WHERE CONCENTRATED INFLOWS FROM THE UPSTREAM SIDE INTO THE DIVERSION ARE EXPECTED (TO BE LOCATED IN THE FIELD)



**ISSUED FOR CONSTRUCTION**

PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

TITLE: **EASTERN DIVERSION (ED) TYPICAL CROSS-SECTIONS**

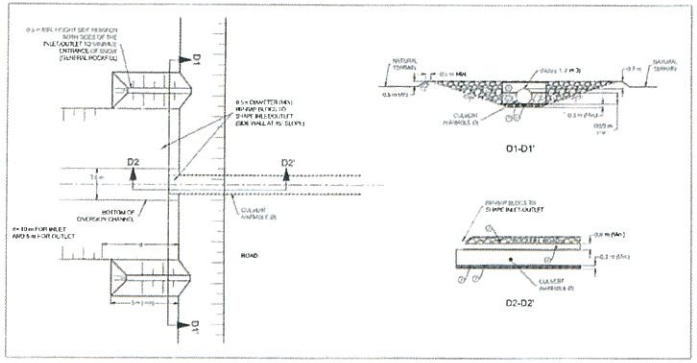
| | | | | | |
|---|---|---|---|---|---|
| PROJECT No | 12-1211-0010-3105 | | FILE No | 1211211010-3105-001 | |
| DESIGN | AG | MAY12 | SCALE | AS SHOWN | REV 0 |
| CADD | BG | MAY12 | | | |
| CHECK | AG | MAY12 | SWD-06 | | |
| REVIEW | RMDRW | MAY12 | | | |

Golder Associates

| REV | DATE | DES | REVISION DESCRIPTION | CADD | CHK | RVW |
|---|---|---|---|---|---|---|
| 2 | 24MAY12 | AG | ISSUED FOR CONSTRUCTION | BG | AG | |
| 1 | 12MAY12 | AG | ISSUED FOR CLIENT REVIEW | BG | AG | RMDRW |

DRAWING NO. | REFERENCES

REGISTERED PROFESSIONAL ENGINEER 24 July 2012 D.A. WALKER LICENSEE



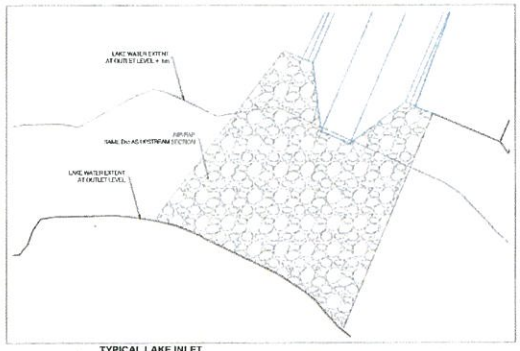

**D-01 TYPICAL CULVERT INLET/OUTLET**
SCALE 1:20

LEGEND

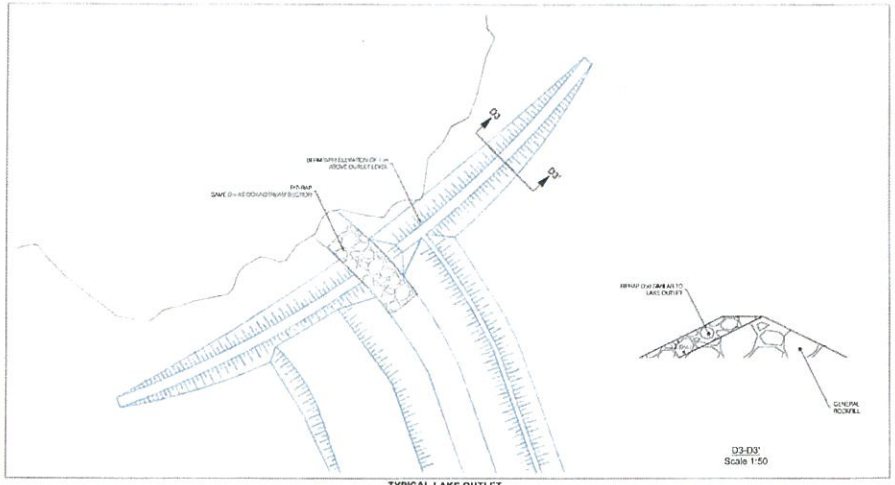
1. FOUNDATION LAYER COMPOSED OF GRANULAR MATERIAL, 5-20MM, OR AN AUTHORIZED EQUIVALENT MATERIAL, COMPACTED IN LAYERS NOT EXCEEDING 150mm
2. NON-COMPACTED FOUNDATION MATERIAL LAYER, 150mm THICK.
3. SIDE BACKFILL COMPOSED OF GRANULAR MATERIAL, 5-40MM, COMPACTED IN LAYERS NOT EXCEEDING 150mm.
4. PROTECTIVE LAYER COMPOSED OF GRANULAR MATERIAL 5-40mm, COMPACTED IN LAYERS NOT EXCEEDING 300MM.
5. SELECT ROCKFILL (PART OF THE ROAD DESIGN - BY OTHERS)

NOTES

1. THE CORRUGATED STEEL PIPE (CSP) MUST BE CONNECTED AT THE JOINTS USING THE APPROPRIATE CONNECTOR SLEEVES AS RECOMMENDED BY MANUFACTURER AND THE ENTIRETY OF THE JOINT MUST BE COVERED USING A STRIP OF GEOTEXTILE MATERIAL (AMITEX 150 OR EQUIVALENT) WITH MINIMUM LENGTH OF 1.3 TIMES THE CULVERT PERIMETER AND MINIMUM WIDTH OF 0.5 m. THE CONTRACTOR MUST ENSURE THAT THE GEOTEXTILE REMAINS IN DIRECT CONTACT WITH THE CULVERT JOINT DURING THE BACKFILLING PROCESS.
2. IN THE PROTECTIVE 300mm LAYER (5) THE EQUIPMENT USED TO COMPACT THE MATERIAL MUST NOT FALL DIRECTLY ABOVE THE PIPE.
3. THE GEOMETRY OF THE EXCAVATION SHOULD TAKE INTO ACCOUNT THE CHARACTERISTICS OF THE EXISTING BACKFILL AND SOIL MATERIAL OF THE ROAD. DEPENDING ON THE NATURE OF THE EXISTING SOIL MATERIAL, THE OWNER'S REPRESENTATIVE MAY DECIDE TO HAVE SOFTER SLOPE TRANSITIONS IN THE LONGITUDINAL DIRECTION OF THE ROAD IN ORDER TO LIMIT FUTURE DIFFERENTIAL MOVEMENTS OF THE ROAD DURING THE WINTER MONTHS, ARISING FROM SOIL GRAIN SIZE DIFFERENCES BETWEEN THE EXISTING SOIL MATERIAL AND THE BACKFILL MATERIAL.
4. ALL MATERIAL USED FOR CONSTRUCTION SHALL BE NON ACID, NON METAL LEACHING, NON ICE-RICH AND NON-CALCIFIED.




**D-03 TYPICAL LAKE INLET (WS22 LAKE, NP2 LAKE, NP1-N LAKE and THIRD PORTAGE LAKE)**
SCALE 1:20




**D-02 TYPICAL LAKE OUTLET (WS22 LAKE, NP2 LAKE and WS11 LAKE)**
SCALE 1:20

GENERAL SPECIFICATIONS - DESIGN AND CONSTRUCTION NOTES :

1. OBJECTIVE AND ASSUMPTIONS FOR THE SIZING AND DESIGN OF THE SURFACE WATER DIVERSIONS ARE DESCRIBED IN DETAIL IN THE DESIGN BASIS MEMORANDUM (GOLDER, 2012A) AND THE DETAILED DESIGN MEMORANDUM (GOLDER, 2012B)

2. HYDRAULIC SPECIFICATIONS/SIZING OF EACH DIVERSION SECTION

| | | | Eastern Diversion ED (sections) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Name | Unit | ED-1 | | | | | | ED-2 | | | | | | | | ED-3 | | | | | | | |
| Discharge | Q | m3/s | 0.3 | | | | | | 1.9 | | | | | | | | 2.3 | | | | | | | |
| approx. Chainage | start | m | 2230 | 1775 | 1480 | 1430 | 1305 | 600 | 590 | 290 | 275 | 155 | 50 | 10 | 0 | | | | | | | | | |
| | end | m | 1775 | 1725 | 1430 | 1305 | 600 | 590 | 275 | 155 | 50 | 10 | 0 | | | | | | | | | | | |
| Bed slope | Sb | % | 0.50% | 0.50% | 4.50% | 9.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | | | | | | | | | |
| Bed width | b | m | 0.5 | 0.5 | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | | | | |
| Side slope (H:V) | Sa | m/m | 2.0 | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | | | | |
| Depth | D | m | 1.18 | 1.18 | 1.28 | 1.29 | 1.19 | 1.09 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | | | | | | | | | |
| Rip-Rap D50 | D50 | mm | 150 | 150 | 150 | 250 | 150 | 250 | 250 | 250 | 150 | 250 | 150 | 250 | 150 | | | | | | | | | |

| | | | Western Diversion WD (sections) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Name | Unit | WD-1 | | | | | | WD-2 | | | | | | | | WD-3 | | | | | | | |
| Discharge | Q | m3/s | 0.3 | | | | | | 0.3 | | | | | | | | 4.6 | | | | | | | |
| approx. | start | m | 1200 | 1175 | 1050 | 330 | 320 | 315 | 145 | 135 | 105 | 70 | | | | | | | | | | | | |
| Chainage | end | m | 1175 | 1050 | 330 | 320 | 315 | 145 | 135 | 105 | 70 | 0 | | | | | | | | | | | | |
| Bed slope | Sb | % | 4.00% | 4.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | | | | | | | | | |
| Bed width | b | m | 0.5 | 0.5 | 0.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | | | | |
| Side slope (H:V) | Sa | m/m | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | | | | | | | |
| Depth | D | m | 1.09 | 1.09 | 1.09 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | | | | | | | | | |
| Rip-Rap D50 | D50 | mm | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | | | | | | | | | |

NOTES: - MINIMUM DIVERSION DEPTH D VARIES DEPENDING ON THE SLOPE, THE DESIGN FLOW AND THE TYPE OF MATERIAL. TRANSITIONS BETWEEN SECTIONS MUST BE GRADUAL OVER A 5 M LENGTH AT LEAST.
- SPECIFIC NOTES RELATIVE TO THE VARIOUS SECTIONS ARE INCLUDED ON THE LONG SECTION.
- EROSION CONTROL MATERIAL (RIP-RAP) SHALL BE NON ACID.

3. SPECIFICATIONS/DIMENSIONS FOR EACH ROAD CROSSING (CULVERT):

| Culvert | Description | Design Flow (m³/s) | Diameter (mm) | Slope (%) | Approximate Length (m) | Embedment Depth (m) | Control Type |
|---|---|---|---|---|---|---|---|
| WD | no embankment and no inlet/outlet | 4.6 | 1800 | 2.0 | 70.0 | 0.00 | inlet |
| ED | no embankment and no inlet/outlet | 2.9 | 1500 | 2.5 | 80.0 | 0.00 | inlet |

NOTE: SIZING SHOWN ABOVE ARE MEANT TO AVOID ANY HYDRAULIC HEAD ABOVE CULVERT ENTRANCE UNDER THE ASSUMPTION THAT THE CULVERT ARE FREE FROM ANYTHING THAT COULD MAKE A BARRIER TO THE FLOW (SEDIMENTS, SNOW, ICE...)

4. DIVERSIONS SHALL BE BUILT FROM DOWNSTREAM TO ALLOW FOR PROPER FUNCTION DURING CONSTRUCTION.

5. GEOTECHNICAL SUPERVISION WILL BE REQUIRED DURING CONSTRUCTION TO ENSURE STABILITY AND SAFETY OF SIDE SLOPES.

6. LAKE INLET CONFIGURATION AND PROTECTION SHOULD BE CONFIRMED PRIOR TO CONSTRUCTION AND MAY REQUIRE ADJUSTMENT DEPENDING ON SITE CONDITIONS.

7. INSTALLATION OF A GEOTEXTILE BENEATH THE EROSION PROTECTION LAYER (RIP-RAP) OF THE DIVERSIONS IS RECOMMENDED BY GOLDER TO LIMIT THE RISK OF MOVEMENT AND RANDOM SETTLEMENT OF THE RIP-RAP, TO EASE CONSTRUCTION SEQUENCE AND MINIMIZE THE COST OF CONSTRUCTION. AEM HAS REQUESTED TO REMOVE THE RECOMMENDED USE OF GEOTEXTILE IN THE DIVERSIONS DESIGN. THEREFORE, IT SHOULD BE NOTED THAT PERIODIC RESHAPING AND MAINTENANCE OF THE DIVERSIONS, INCLUDING THE ADDITION OF RIP-RAP MATERIAL AND CONTROL OF SUSPENDED SEDIMENTS, MAY BE REQUIRED DURING DIVERSION OPERATIONS.

**ISSUED FOR CONSTRUCTION**



PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
SURFACE WATER DIVERSIONS

TITLE: **SPECIFIC STRUCTURE DETAILS AND GENERAL SPECIFICATIONS**

| REV | DATE | DES | REVISION DESCRIPTION | CADD | CHK | RVW |
|---|---|---|---|---|---|---|
| 1 | 11-Jul-12 | AG | ISSUED FOR CONSTRUCTION | AG | MC | RMDRW |
| 0 | 04-Jul-12 | AG | ISSUED FOR CLIENT REVIEW | AG | AC | RMDRW |

STAMP: 24 July 2012

Golder Associates

| | | | |
|---|---|---|---|
| PROJECT No. | 12-1221-0030-3030 | FILE No. | 1212210030-3030-001 |
| DESIGN | AG | 8MAY12 | SCALE: AS SHOWN REV. 0 |
| CADD | RG | 8MAY12 | SWD-07 |
| CHECK | AG | 8MAY12 | |
| REVIEW | RMDRW | 9MAY12 | |

DRAWING NO. | REFERENCES