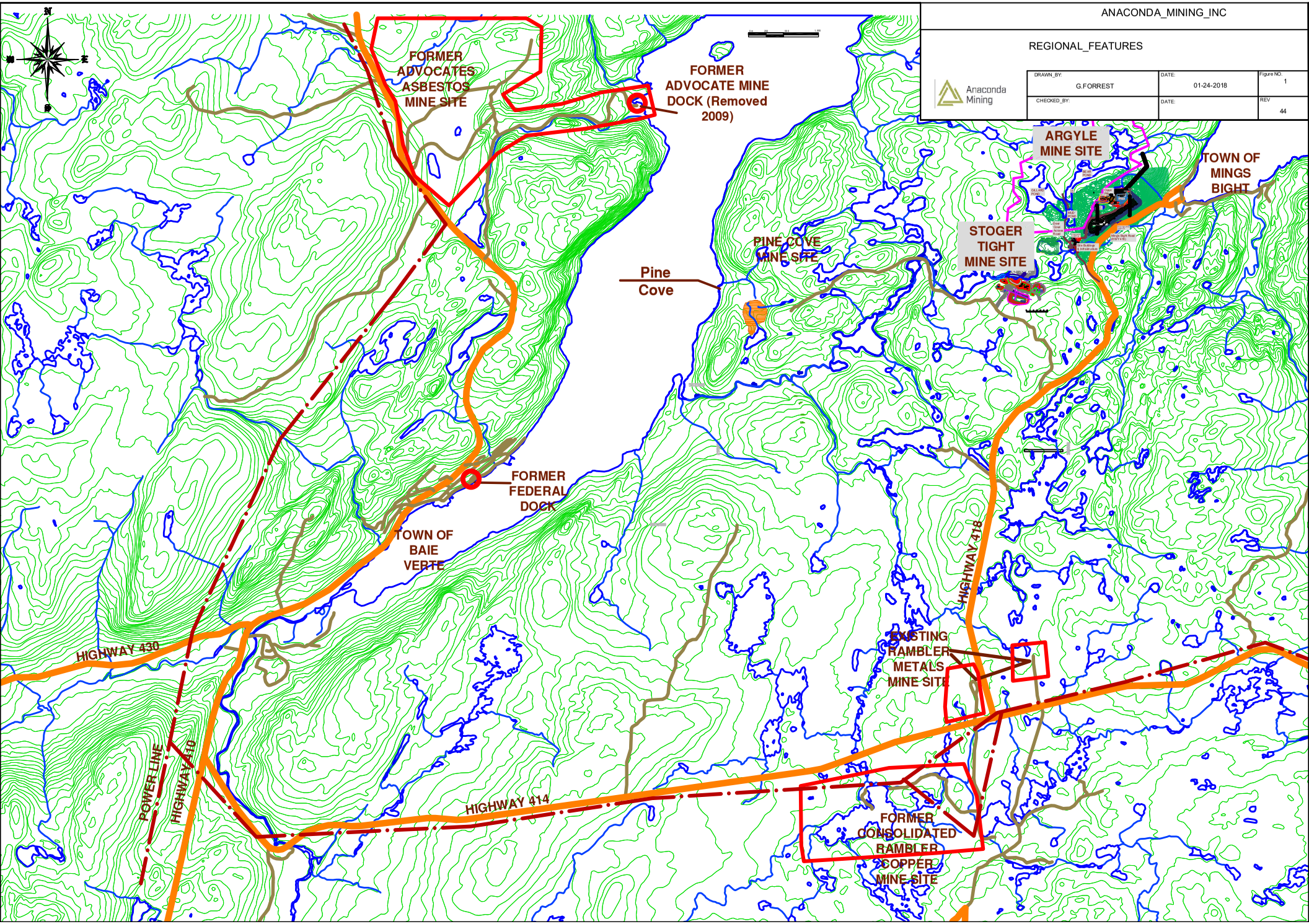
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REGIONAL_FEATURES
Anaconda Mining
DRAWN_BY: G.FORREST
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Figure NO. 1
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REV 44
FORMER ADVOCATES ASBESTOS MINE SITE
FORMER ADVOCATE MINE DOCK (Removed 2009)
ARGYLE MINE SITE
TOWN OF MINGS BIGHT
STOGER TIGHT MINE SITE
PINE COVE MINE SITE
Pine Cove
FORMER FEDERAL DOCK
TOWN OF BAIE VERTE
HIGHWAY 430
HIGHWAY 410
POWER LINE
HIGHWAY 414
HIGHWAY 418
EXISTING RAMBLER METALS MINE SITE
FORMER CONSOLIDATED RAMBLER COPPER MINE SITE

GEMTEC

Preliminary Baseline Studies
Anaconda Mining Inc.'s Argyle Property

Baie Verte, NL
January 30, 2018

Prepared for Anaconda Mining Inc.
Project No. 80016.09

January 30, 2018 File: 80016.09 – R01

Anaconda Mining Inc.
238 Highway 410
Baie Verte, NL
A0K 1B0

Attention: Gordana Slepcev, P.Eng., M.Sc.
Chief Operating Officer

Re: Preliminary Baseline Studies Final Report, Anaconda Mining Inc.'s Argyle Property, near Ming's Bight, Newfoundland and Labrador

Please find enclosed our Preliminary Baseline Studies Final Report in support of the development of Anaconda Mining Inc.'s proposed Argyle property located near Ming's Bight, Newfoundland and Labrador. The field components relative to this report were conducted in July and August, 2017.

If you have any questions please contact the undersigned at your convenience.

Sincerely,

Darrol Rice

Darrol Rice, B.Tech. (Env), P.Tech., EP, PMP
Senior Project Manager

Enclosures:

Preliminary Baseline Studies
Argyle Property near Ming's Bight,
Newfoundland & Labrador

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Newfoundland & Labrador

Executive Summary

Anaconda Mining Inc. (Anaconda) is proposing to develop a new gold mine on their Argyle Property (the Project) located near Ming's Bight, Newfoundland and Labrador (Figure 1). The Project is located approximately 10 kilometres (km) southwest of the community of Ming's Bight and approximately 10 km from their existing Pine Cove Mine and Mill operation.

GEMTEC Consulting Engineers and Scientists (GEMTEC) was retained by Anaconda to complete baseline ecological studies at this property. The field based investigations were carried out during the summer, 2017. Baseline studies included:

- Historic Resources Assessment;
- Wetlands delineation;
- A vegetation and flora survey;
- A wildlife and fauna survey;
- An aquatic habitat assessment; and
- A water quality sampling program.

The studies were completed to obtain preliminary information on the applicable Valued Ecosystem Components (VECs) located within the Mine Development Area (MDA) and this report provides a summary of those findings.

GEMTEC engaged Mr. Derrick Mitchell, a biologist with Boreal Environmental, to assist in planning and executing the ecological baseline studies in July and August, 2017.

Based on the findings of these studies, the following conclusions are presented:

- The Project is located within an area having low historic resource potential;
- A total of 6 wetlands were identified within the proposed MDA. The delineated wetlands ranged in size from approximately 0.03 hectares to 4.7 hectares; however, several wetlands extended beyond the MDA. In general, the encountered wetlands have high wetland functionality in native plant habitat;
- The concentration of aluminum (102 µg/L) in surface water sample SW-1 exceeded the Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CCME FWAL) limit of 100 µg/L. All other total metals and general chemistry parameters were below laboratory detection limits or below the CCME FWAL criteria;

- One rare vascular flora species was identified within the MDA: Common wintergreen *(Chimaphila umbellata)*;
- There is little or no viable fish habitat in the MDA; therefore the potential for fish to be present is very low; and
- A total of 20 bird species comprising of 89 individuals were documented during the Breeding Bird Survey. None of the species recorded are considered Species at Risk (SAR).

The statements made in this Executive Summary are intended to be read in conjunction with the entire body of this report, including all appendices.

This document presents the findings of the preliminary baseline studies and no comment is made with respect to the development, construction or operation phases of the proposed Project.

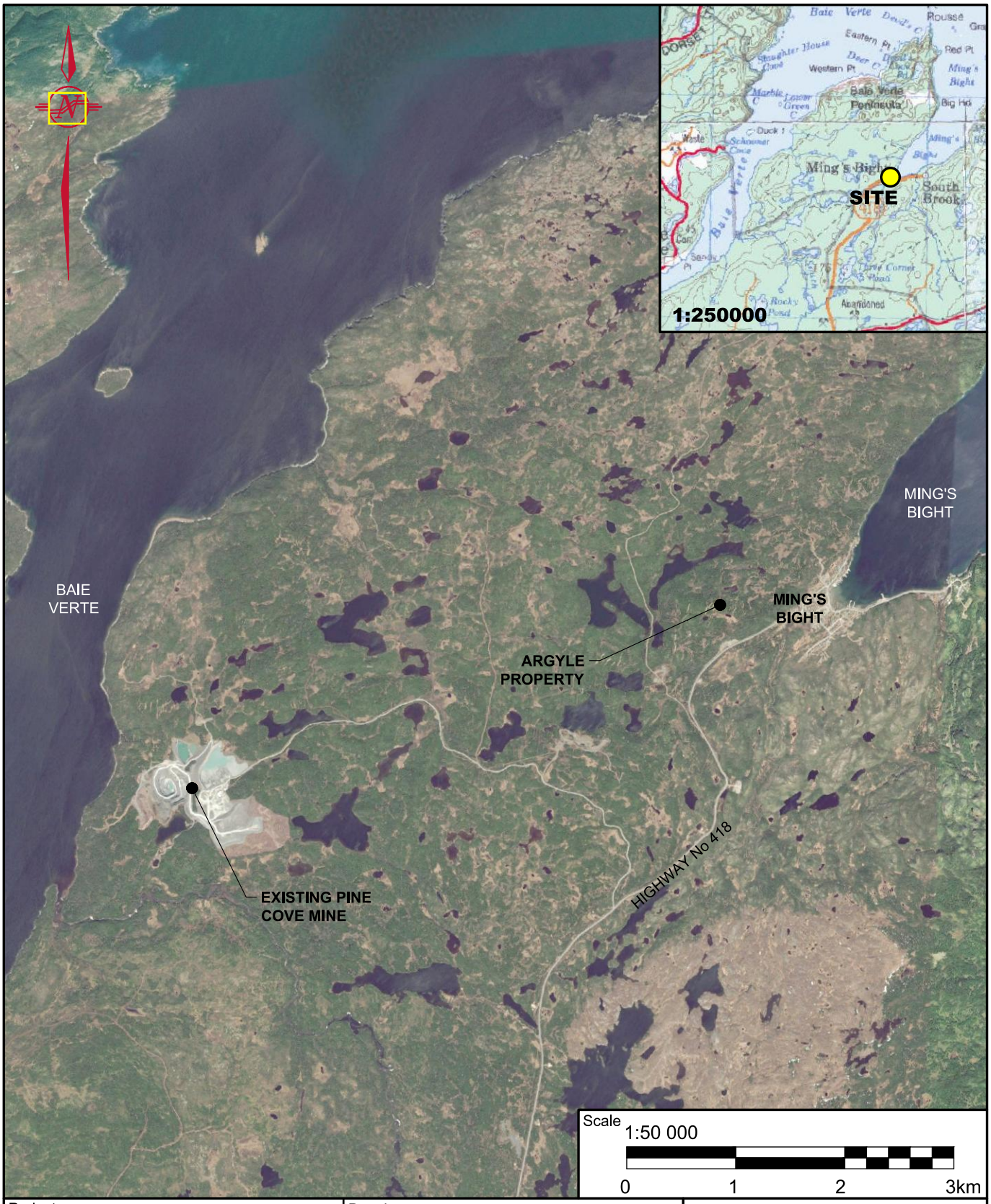
1.0 Introduction

Anaconda Mining Inc. (Anaconda) is proposing to develop a new gold mine on their Argyle Property (the Project) located near Ming's Bight, Newfoundland and Labrador (Figure 1). The Project is located approximately 10 kilometres (km) southwest of the community of Ming's Bight and approximately 10 km by road from their existing Pine Cove Mine and Mill operation.

GEMTEC's current understanding of the Project is presented as follows:

- Anaconda intends to commence mining activities within approximately two years (2019);
- Mining operations will be open pit;
- Ore will be transported and processed at Anaconda's existing Pine Cove mill;
- Based on ore processing taking place at Anaconda's existing Pine Cove mill, there will be no tailings generated at the Property. Tailings will be disposed of at Anaconda's existing Pine Cove facilities;
- The Project is in close proximity to Ming's Bight Protected Public Water Supply Area (PPWSA). A portion of an existing gravel access road runs through the PPWSA. Anaconda has indicated that no mining will take place directly in the watershed; however it is likely that regulator consultation be required to determine what studies, if any, are required. No studies associated with the PPWSA are included in this report;
- No existing waterbodies will be removed as the project footprint is developed;
- There will be waste rock generated from the mining operations which will require permanent surface dumps, and ore stockpiling areas on-site;
- Anaconda is planning to submit a Project Registration during winter 2018;
- It is understood that no federal environmental assessment review is required; and
- We understand that while an initial resource has been defined at Argyle, the Project scope and description has not been finalized and could possibly be phased to allow for early ore extraction and transport to the existing mill. Further or additional studies may be required as the proposed Project advances.

This Project will also include the transportation (truck haulage) of ore from the site to the existing Pine Cove Mill. Additionally, if the tailings from the processing of ore material from the Argyle deposit need to be deposited somewhere other than in the existing permitted tailings management facility (TMF), this change will likely be subject to a more extensive Environmental Assessment (EA) and permitting process. These potential requirements should be considered as the planning and design of the Project are advanced.



Project	Drawing
ARGYLE BASELINE STUDIES	SITE LOCATION PLAN

Drawn By	Date	File No.	Drawing No.	Revision No.
CHG	JAN 2018	800160901	FIGURE 1	0

GEMTEC
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2.0 Scope of Work and Methodology

GEMTEC was retained by Anaconda to carry out preliminary baseline studies in support of the Project development. Results of these studies will also inform a Registration document for the Project that will be submitted to the Newfoundland EA Division. Studies included:

- Historic Resources Assessment;
- Wetlands delineation and assessment;
- A vegetation and flora survey;
- A wildlife and fauna survey;
- A aquatic habitat visual assessment; and
- A surface water quality sampling program.

GEMTEC engaged Mr. Derrick Mitchell, a biologist with Boreal Environmental (Boreal), to assist in planning and executing the ecological component studies within the proposed mine development area (MDA) of the Project (Figure 2). GEMTEC and Boreal were on site in July and August, 2017. Due to the seasonal characteristics of several Value Ecosystem Components (VEC), two trips were required to collect all relevant information (Table 1). Details of each study are discussed below.

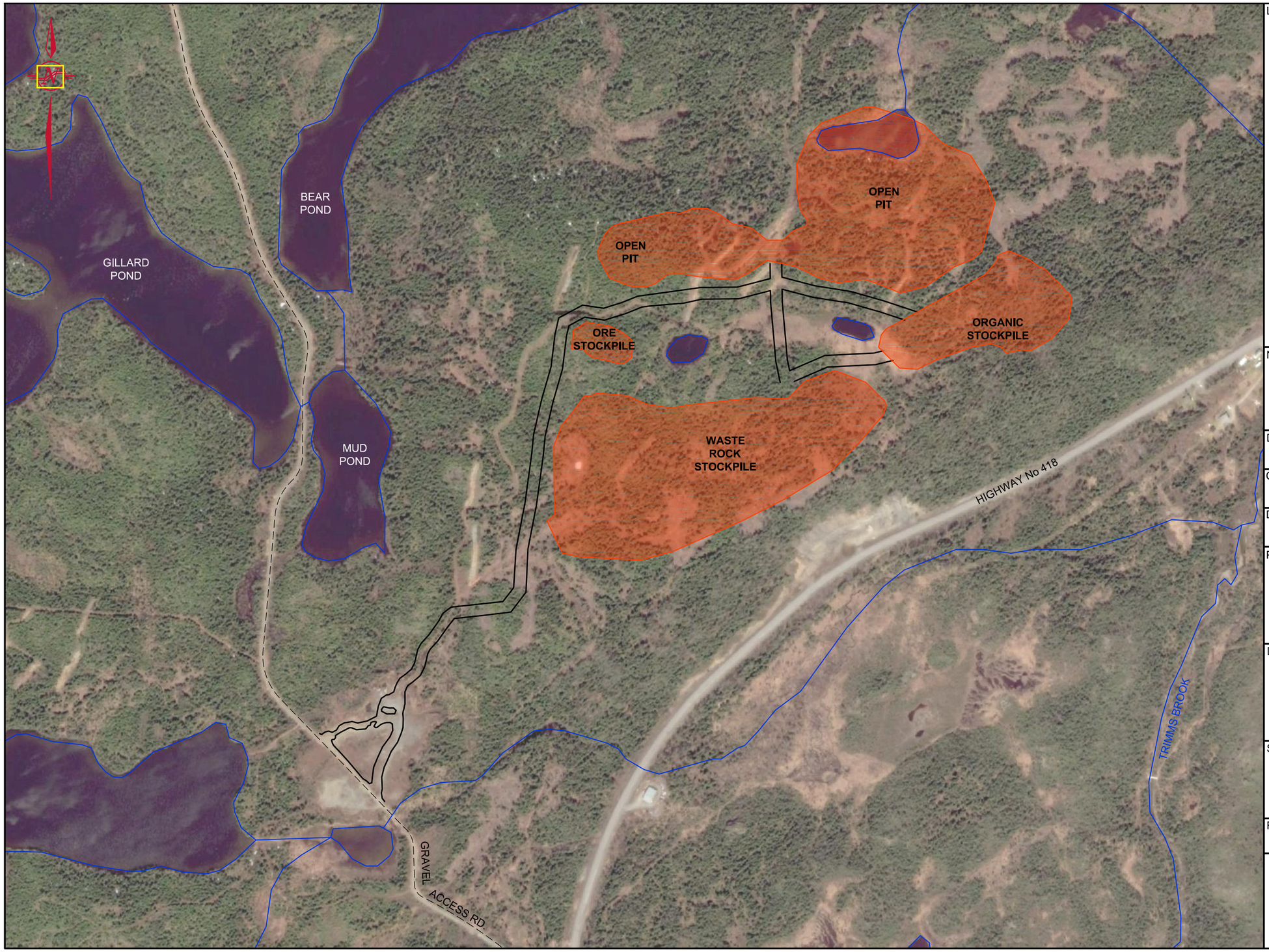
Table 1: Field Study Schedule

Site Visit Date	Field Component
July 5 to 7, 2017	• Breeding Bird Survey, Fauna Survey and Wetland Assessment, Water Quality Monitoring and Sampling, Aquatic Habitat Visual Inspection
August 10 to 12, 2017	• Fauna Survey and Wetland Assessment

The site-specific field study program was developed by referencing the standard methods outlined by:

- Bird Studies Canada (BSC); and
- Army Corps of Engineers in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North Central and Northeast Region.

These documents were used as guidelines to refine a field reconnaissance program to the site-specific conditions and to the scope of work for the proposed Project, while obtaining the required information for an EA Registration document.



Legend

- WATERCOURSE
- PROPOSED ROAD
- PROPOSED MINE DEVELOPMENT AREA

Note

1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL PHOTOGRAPH FROM 2015. SOURCE GOOGLE EARTH.

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CHG	DR
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Date: JANUARY 2018

Project: ARGYLE BASELINE STUDIES

Drawing: PROPOSED MINE DEVELOPMENT AREA

Scale: 1:5000

0 100 200 300m

File No.	Drawing	Revision No.
800160901	FIGURE 2	0

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2.1 Historic Resource Assessment

GEMTEC consulted with a Provincial archaeologist to determine if the site/location has the potential for culturally significant sites to be located within or nearby or if there are any archaeological sites in the area. The Project site is considered to be situated in an area of low archaeological potential and as such there are no concerns.

2.2 Wetland Assessment

A wetland assessment was conducted within the MDA and included:

- Boundary delineation of any wetlands encountered; and
- Identification of wetland characteristics of each wetland.

2.2.1 Methodology

The boundaries and characteristics of each wetland encountered during the 2017 field study program were identified. Wetland boundaries outside of the MDA were delineated using aerial photo interpretation techniques and it should be noted that photo interpreted boundaries are approximate and are used to illustrate the extent of wetlands potentially affected by the development of the mine.

There is no specific protocol or methodology for delineating wetlands in Newfoundland and Labrador. There is, however, an accepted industry standard described by the Army Corps of Engineers in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. This protocol is used for wetland boundary determination throughout North America and more regionally in the Maritime provinces.

The wetland delineation was conducted using a modified version of the methodology outlined in the Corps of Engineers, *Wetlands Delineation Manual* (Environmental Laboratory 1987). The Corp of Engineers methodology typically assesses three parameters; vegetation, hydrology and soils. Only two parameters, vegetation and hydrology, were used in this assessment, with the rationale being that hydric soils are likely to be present if hydrophytic vegetation and saturated conditions exist.

Wetland conditions were identified using the following criteria:

- A majority of dominant vegetation species are wetland associated species; and
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season.

The location of wetland boundaries inside the MDA were recorded using a Trimble Nomad field computer and Garmin GLO GPS receiver with a stated accuracy of +/- 3 m.

The Canadian Wetland Classification System was used to classify wetlands as either fen, swamp and/or shallow water (CWCS 1997).

2.2.2 Wetland Assessment Results

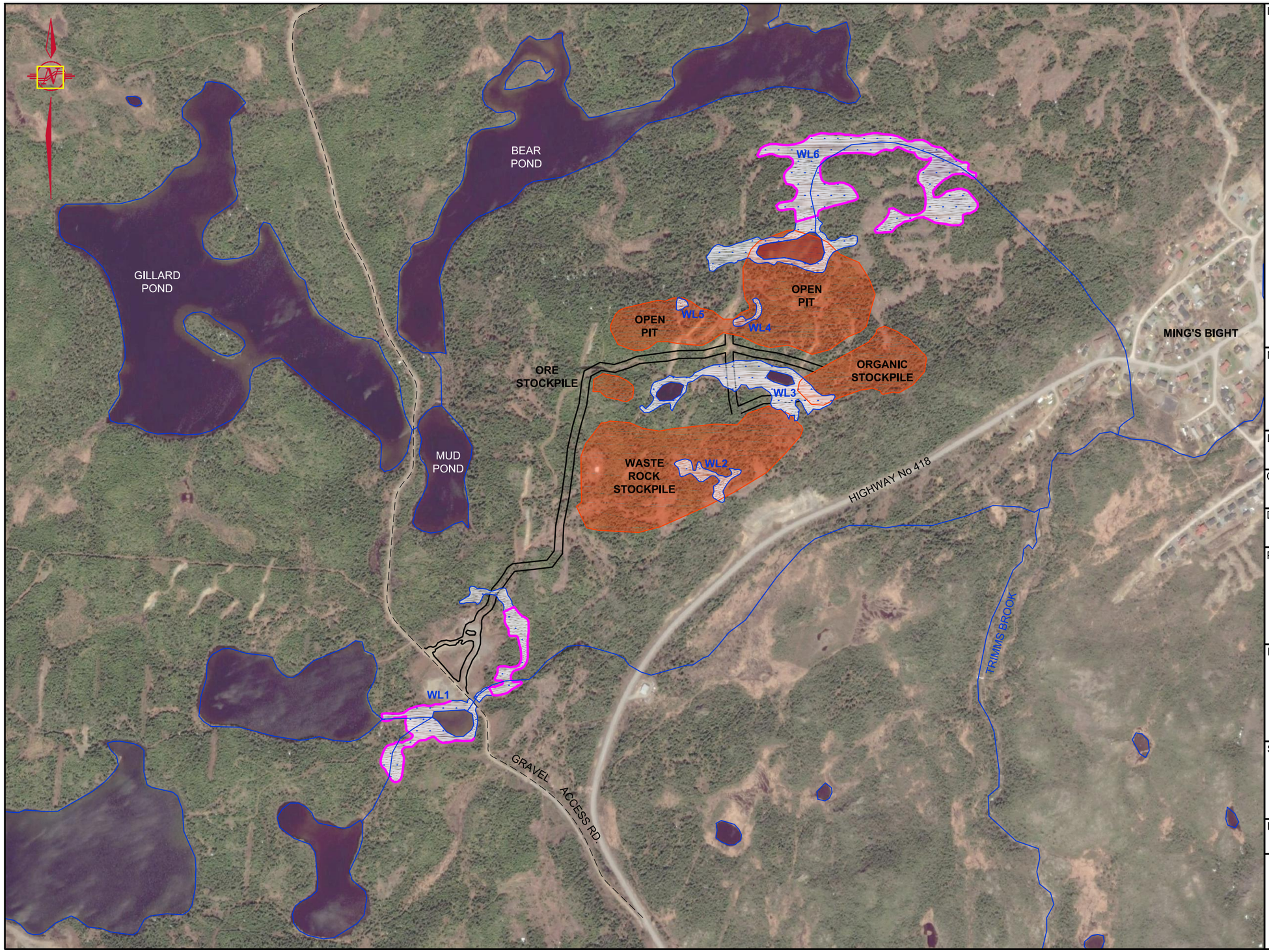
A total of six wetlands were identified within the MDA during the field studies program. The delineated wetlands (WL) ranged in size from approximately 0.03 hectares (ha) (WL5) to 4.7 ha (WL6). However, several wetlands, WL1 and WL6, continued beyond the boundary of the MDA (Table 2). Wetland locations are depicted on Figure 3 and site photos are presented in Appendix A.

In general, WLs 3, 4, 5, and 6 are topographically defined and located in a basin or at the toe of slope landscape position. Only WL 1 has a channel with flowing surface water which discharges from the wetland down a steep gradient. WL2 and WL6 are headwater wetlands and provide the source water for watercourses that discharge from them. A watercourse that is part of the provincial inventory is shown to be discharging from WL6, while the one discharging from WL 2 is unmapped. The wetlands and hydrological connections are presented in Figure 3.

Table 2: Summary of Delineated Wetlands and Functional Assessments

Wetland ID	Wetland Size within MDA (hectares)	Wetland Classification and Characteristics
1	2.0	WL1 is a wetland complex made up of shallow water basin, riparian swamp and drainageway swamp. It is bisected by an access road at the outlet of the shallow water portion of WL1. WL1 drains via an unmapped watercourse towards Route 418 south of the MDA. WL1 is fed by an unnamed pond located to the west (Figure 3). The portion east of the access road is riparian forest dominated by Green alder (Alnus viridis) and Squashberry (Viburnum edule). The western portion of the wetland is a sparsely vegetated shallow water wetland with a cobble/gravel substrate. Shoreline and aquatic vegetation consists of Water lobelia (Lobelia dortmanna), Roundleaf sundew (Drosera rotundifolia), Beaked sedge (Carex rostrata), Slender sedge (Carex lasiocarpa) and Blue-joint reedgrass (Calamagrostis canadensis). The drainageway swamp component is dominated by Yellow sedge (Carex flava), Star sedge (Carex echinata), Green alder, Balsam fir (Abies balsamea), and Black spruce (Picea mariana) (Photo 1 and 2)
2	0.3	WL2 is a sloping spring fen dominated by star sedge (Carex echinata), tawny cotton-grass (Eriophorum virginicum), deergrass (Trichophorum cespitosum), and alpine cotton-grass (Trichophorum alpinum) (Photo 3 and 4). WL2 has no obvious inlet and is likely influenced by groundwater discharging from a steep slope transition occurring at the middle to upper slope landscape position. A small intermittent watercourse discharges from the southern end of WL2 and down a steep slope.
3	1.6	WL3 is a minerotrophic sedge dominated basin fen with two open water features. These open features have no inlet or channelized

Wetland ID	Wetland Size within MDA (hectares)	Wetland Classification and Characteristics
		outlet. WL3 drains via a diffuse seep at the southern end of the wetland. Groundwater is likely the primary source of water based on the pH of the open water feature, i.e., greater than 7. WL3 is dominated by star sedge (Carex echinata), Tawny cotton-grass (Eriophorum virginicum), Deergrass (Trichophorum cespitosum), and Alpine cotton-grass (Trichophorum alpinum) (Photo 5 and 6).
4	0.08	WL4 is a small drainageway swamp dominated by Shore sedge (Carex lenticularis), Purple avens (Geum rivale), Squashberry and Alderleaf buckthorn (Rhamnus alnifolia) (Photo 7 and 8). WL4 has no inlet and no obvious outlet. There may be an interaction with the shallow groundwater aquifer that discharges to WL6 downslope.
5	0.03	WL5 is a very small basin swamp dominated by Alderleaf buckthorn, Golden groundsel (Packera aurea), and Bristly-stalked sedge (Carex leptalea) (Photo 9).
6	4.7	WL6 is the largest wetland encountered within the MDA but the majority of WL6 lies outside of the MDA. WL 6 is a minerotrophic sedge dominated basin fen with a relatively large open water feature. WL6 also receives groundwater as its primary source of water based on the pH of the open water, i.e., greater than 7. WL 6 is dominated by slender sedge, bog buckbean (Menyanthes trifoliata) and alpine cotton-grass (Photo 10 and 11 in Appendix A)



Legend

- WATERCOURSE
- PROPOSED ROAD
- INTERPRETED WETLAND
- PROPOSED MINE DEVELOPMENT AREA
- WETLANDS

Note

1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL PHOTOGRAPH FROM 2015. SOURCE GOOGLE EARTH.

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Date: JANUARY 2018

Project: ARGYLE BASELINE STUDIES

Drawing: WETLAND DELINEATIONS

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2.3 Vegetation and Plant Survey

2.3.1 Ecoregion Description

Although the MDA lies in a transitional area between the North Shore Ecoregion and the North Central Subregion, the MDA displays vegetative characteristics consistent with the North Shore Ecoregion.

The North Shore Ecoregion represents a narrow coastal zone extending from Bonavista Bay to the Baie Verte Peninsula. The summers are relatively dry and warm and soil moisture is low during this time. In general, black spruce and balsam fir forests are the most prevalent forest type forming a continuous forest cover except where barrens dominate on the coastal headlands. Midslopes are dominated by the Hylocomium-Balsam Fir type, or by the Black Spruce-Feathermoss type dry outcrops and steep slopes with a south aspect. Trembling Aspen rarely forms pure stands except on richer warmer microsites. The landforms are similar to those of the Central Newfoundland Subregion and are characterized by undulating topography (Fisheries and Land Resources 2017).

Forested Areas

The MDA is dominated by Hylocomium-Balsam Fir forest type on mesic sites and the Black Spruce-Feathermoss type on drier sites. Forest types are in various stages of development based on the disturbance regime and specific site factors. Although there are some small remnant patches of old forest, most of the MDA was harvested over the past 30 years. More recent forest clearing has occurred as a result of exploration activities. Richer sites located in mid-slope or in terraced positions tend to be dominated by small stands of trembling aspen *(Populus tremuloides).* The understory of both coniferous forest types are dominated by bunchberry *(Cornus canadensis)*, twinflower *(Linnaea borealis)*, creeping snowberry *(Gaultheria hispidula)*, and clinton lily *(Clintonia borealis)*. Representative habitat photographs are provided in Appendix B, Photos 1 and 2.

Disturbed Areas

Many areas within the MDA have been disturbed by exploration activities and access trails. Cleared areas are dominated by early successional species including pearly everlasting (Anaphalis margaritacea), wild raspberry (Rubus idaeus), flat bunchberry, topped fragrant goldenrod *(Euthamia graminifolia)*, fireweed (Chamerion angustifolium), and green alder. Representative photographs are provided in Appendix B, Photo 3.

Methodology

The scope of work carried out for the vegetation and flora survey within the MDA included:

- A desktop Species at Risk (SAR) Study;

- Identification of all encountered vascular vegetation within the MDA; and
- Identification of all encountered flora (vascular) within the MDA.

A desktop study for SAR and areas of concern was conducted prior to the site visit. The SAR screening was conducted by obtaining data from the Atlantic Canada Conservation Data Centre (ACCDC) and was limited to a 5 km radius of the MDA. This database search provided the following:

- Reported observations of rare and endangered flora;
- Expert Opinion Maps information to identify species that have not been reported but are expected, based upon estimates of habitat and wildlife distribution; and
- Locations of any Special Areas such as the following:
    - Managed areas with some level of protection;
    - Significant ecological areas of interest;
    - National Defense areas; and
    - First Nations areas.

The species listed within the ACCDC report were referenced to rankings outlined by the *Committee on the Status of Endangered Wildlife in Canada* (COSEWIC), the *Species at Risk Act* (*SARA*), and the *Newfoundland and Labrador Endangered Species Act* (*NLESA*). The ACCDC report, mapping and habitat comparison tables are attached as Appendix C.

SARA provides protection for flora species against extirpation, extinction or endangerment from human activities. Currently, only the species listed in Schedule 1 of *SARA* are protected federally. Provisions to protect and recover a species come into effect once it has been listed in Schedule 1 of *SARA*.

The *NLESA* provides another level of legislative protection for SAR. Different levels of protection are afforded for species listed within these acts depending on the species rarity ranking. All species identified ranking S1 or S2 by the ACCDC are considered rare for the purpose of this report.

The vegetation and flora surveys were conducted during multiple stages of the flowering season to ensure identification of both the early and late flowering plants. The field biologist (Derrick Mitchell) dedicated approximately 40 hours to the vegetation and plant survey on two separate site visits. The site was traversed on foot and focused on unique habitats (*i.e.,* rock outcrops, mature forest, watercourses and wetlands) in a random meandering fashion. In general, these habitats have an elevated potential for the occurrence of rare species. Consideration was given to the mature coniferous forest, the preferred habitat for boreal felt lichen (*Erioderma pedicellatum),* which is listed as a species of 'Special Concern' by both, *COSEWIC* and *SARA*, and 'Vulnerable by the *NLESA*. Mountain holly fern *(Polystichum scopulinum)* was also listed in

the ACCDC report as potentially occurring in the region. This species is listed as 'Threatened' by both *COSEWIC* and *SARA*. The locations of all plants were recorded using a handheld GPS unit and photos were taken. An inventory of all plant species encountered was recorded during field studies.

2.3.2 Vegetation Survey Results

A complete inventory of plant species encountered within the MDA is presented in Appendix D. The locations of encountered rare flora are presented in Figure 4.

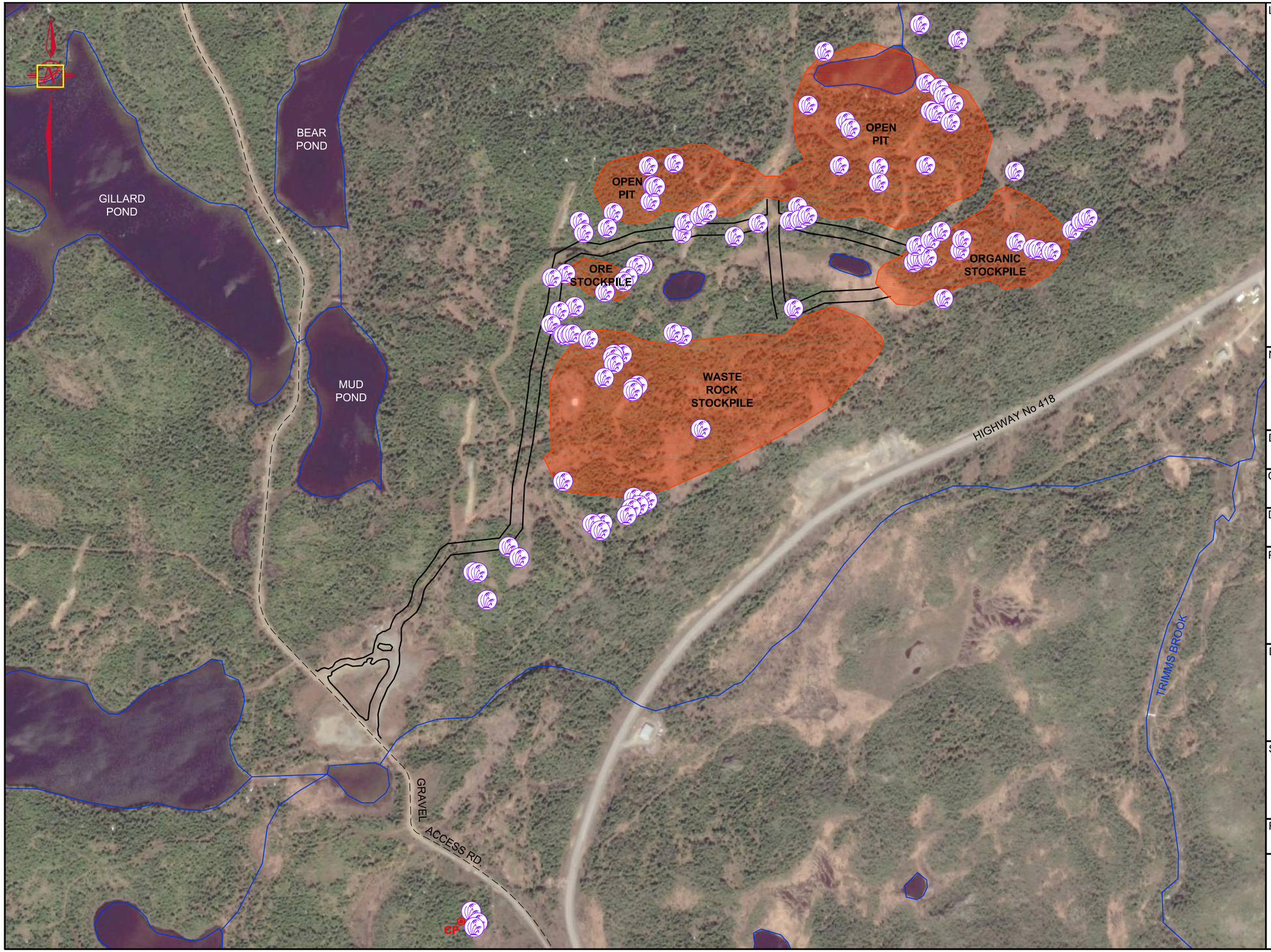
Common wintergreen *(Chimaphila umbellata),* an S2 plant species as per ACCDC, was the only rare plant species identified during field studies. This plant species tends to occur in small openings in crest of slope or hilltop landscape positions with a southern aspect. Naturally it occurs on dry (i.e., xeric) and thin soils in mature black spruce stands that have begun to break up due to old age or natural disturbances that have created small openings in the canopy (Photo 1 and 2 in Appendix E). In addition, field observations indicate that it is encouraged by low impact forest clearing activities in suitable habitat where the ground is not disturbed such as winter firewood harvesting and when there is snow pack.

Approximately 5,650 common wintergreen plants were identified within 100 different patches inside and outside of the MDA. Within the MDA, which includes the proposed road Right of Way (RoW), there were approximately 2,750 plants in 11 distinct patches identified. Some patches were distinct and separated from others, whereas other patches were clustered where suitable habitat was abundant. To ensure that the MDA and area immediately adjacent were not unique with respect to the abundance of common wintergreen, a control area that was predicted to have suitable habitat approximately 900 m from the MDA was surveyed (Figure 4). Immediately upon arrival at this site, approximately 200 individual plants in three patches were identified. Due to the number of plants identified in and outside of the MDA, common wintergreen is assumed to be regionally abundant. All locations of common wintergreen can be found in Appendix F.

Mountain holly fern were not found during the survey.

2.3.3 Non-Vascular Species at Risk

Boreal felt lichen, a SAR identified by the ACCDC as having the potential to occur in this region, was not found in the MDA. Boral felt lichen prefers mature forest with an abundance of moisture-loving species such as *Sphagnum* moss species (i.e., mesic to hydric sites). Mature forested swamps are were not present within the MDA and mature upland areas of Spruce / Fir tended to be located on dry hilltops and steep slopes with a southern aspect and thin soils. Understory vegetation in these stands tends to be sparse and the forest floor was blanketed with feather mosses (*e.g., Pleurozium schreberi* and *Hylocomium splendens*). The MDA tends to have a southern aspect and / or is located in a hilltop position which does not favour lichen development. The potential for Boreal felt lichen to occur in the MDA is low due to these site specific factors.



Legend

- CHIMAPHYLLA UMBELLATA (COMMON WINTERGREEN)
- CONTROL POINT
- WATERCOURSE
- PROPOSED ROAD
- PROPOSED MINE DEVELOPMENT AREA

Note

1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL PHOTOGRAPH FROM 2015. SOURCE GOOGLE EARTH.

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Date: JANUARY 2018

Project: ARGYLE BASELINE STUDIES

Drawing: RARE FLORA LOCATIONS

Scale: 1:5000

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File No.	Drawing	Revision No.
800160901	FIGURE 4	0

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2.4 Wildlife and Fauna Survey

A wildlife and fauna survey was conducted within the MDA and included:

- A desktop SAR Study;
- A breeding bird survey;
- General wildlife observations during field exercises; and
- Field survey for SAR (July and August).

The wildlife and fauna survey did not include the trapping, tracking or collection of any wildlife and / or specimens.

2.4.1 Methodology

SARA provides protection to fauna species against extirpation, extinction or endangerment from human activities. Currently, only the species listed in Schedule 1 of *SARA* are protected federally. Provisions to protect and recover a species come into effect once it has been listed in Schedule 1 of *SARA*. The federal *Migratory Birds Convention Act* (*MBCA*) provides overarching protection for individuals and populations of birds and their nests, including songbirds, waterfowl and seabirds, against harm or destruction. The *MBCA* and associated regulations are administered by ECCC through the Canadian Wildlife Service (CWS).

The following sections describe the field studies undertaken to identify wildlife and potential SAR and their habitat that may be present within the MDA.

2.4.2 Breeding Bird Survey

Breeding bird surveys were conducted as per the methods outlined by Bird Studies Canada. To ensure representation of habitat types, preliminary site selection for the bird point count locations were identified based on the following:

- Forest species composition; and
- Development stage within the MDA.

Aerial photography was used to determine the above mentioned during the planning stage and point locations were adjusted based on actual site conditions.

A single round of breeding bird surveys was conducted on the morning of July 6, 2017 from 05:35 - 07:25. Each point count location was surveyed for a period of 10 minutes. The breeding status of each species was determined using the criteria outlined by Bird Studies Canada. Data collected for each bird detected included: number, species, behavior, and location in relation to the survey point. Weather parameters (*i.e.,* wind speed, wind direction, sky condition and temperature) were also recorded at each point count location.

Species observed or heard singing in suitable nesting habitat were classified as possible breeders if they exhibited the following behaviours:

- Courtship behaviour between a male and female;
- Birds visiting a probable nest site;
- Birds displaying agitated behaviour; or
- Male and female observed together in suitable nesting habitat.

Species were confirmed as breeding if any of the following items or activities were observed:

- Nest building or adults carrying nesting material;
- Distraction display or injury feigning;
- Recently fledged young;
- Occupied nest located; or
- Adult observed carrying food or fecal sac for young.

Incidental bird observations / singing were also recorded in conjunction with wetland and flora field studies. This ensured that the bird species diversity within the MDA was captured.

2.4.3 Breeding Bird Survey Results

The ACCDC report and a summary table outlining the species ranking (Table C1) and a summary table of the preferred habitat for each ACCDC listed species (Table C2) are presented in Appendix C.

A total of 20 bird species comprising of 89 individual records were documented during the survey (Table 3) and the breeding bird survey locations are presented in Figure 5. The most numerous species recorded overall, in descending order, are:

- White-winged Crossbill *(Loxia leucoptera);*
- Fox Sparrow *(Passerella iliaca);*
- Northern Waterthrush *(Parkesia noveboracensis)*;
- Ruby-crowned Kinglet (*Regulus calendula*);
- Yellow-rumped Warbler (*Setophaga coronate*); and
- Boreal Chickadee (*Poecile hudsonicus*).

The observed abundance of these species would be expected given the development stage and species composition of the area within the MDA as these species are characteristic of the forest

and wetland habitats that are found within the MDA. No bird SAR were recorded during the breeding bird surveys. Point data specific to bird locations are included in Appendix G.

No raptor nests were noted in the MDA but an Osprey, (*Pandion haliaetus*), was observed carrying a fish and displaying agitated behaviour several hundred meters north of the MDA.

Table 3: Bird Species recorded within the MDA - July 6, 2017

Common Name	Latin Name	S-Rank*	Highest breeding status†	Number Recorded
Turdus migratorius	American Robin	S5B,S5M	PO	4
Picoides dorsalis	American tree-toed Woodpecker	S5	PO	1
Dendroica virens	Black-throated Green Warbler	S5B,S5M	PO	2
Vireo solitarius	Blue-headed Vireo	S3B,SUM	PO	3
Poecile hudsonicus	Boreal Chickadee	S4	PO	5
Junco hyemalis	Dark-eyed Junco	S5	PO	1
Picoides pubescens	Downy Woodpecker	S4	PO	1
Passerella iliaca	Fox Sparrow	S5	PO	9
Perisoreus canadensis	Gray Jay	S5	CO	3
Picoides villosus	Hairy Woodpecker	S4	CO	3
Catharus guttatus	Hermit Thrush	S5B,S5M	PO	2
Setophaga magnolia	Magnolia Warbler	S4B,SUM	PO	4
Parkesia noveboracensis	Northern Waterthrush	S5B,S5M	CO	8
Pandion haliaetus	Osprey	S4, SUM	CO	1
Regulus calendula	Ruby-crowned Kinglet	S5	PO	6
Catharus ustulatus	Swainson's Thrush	S5B,S5M	PO	1
Zonotrichia albicollis	White-throated Sparrow	S5B,S5M	PO	4
Loxia leucoptera	White-winged Crossbill	S5	PO	21
Empidonax flaviventris	Yellow-bellied Flycatcher	S5B,S5M	PO	4
Setophaga coronata	Yellow-rumped Warbler	S5B,S5M	CO	6
Total				**89**

† Breeding Status Codes:
OB = observed
PO = possible breeder
PR = probable breeder
CO = confirmed breeder

Table 4 summarizes the habitat requirements of SAR bird species identified by the ACCDC as potentially occurring within the MDA. Table 4 also indicates the likelihood of occurrence for these species based on field observations and observed habitat within the MDA.

Table 4: Summary of Birds Species at Risk

Species	Scientific Name	Habitat Summary	Habitat Present	Likelihood of Occurrence
Barrow's Goldeneye	*Bucephala islandica*	Data indicate that it breeds only in Canada with the only confirmed breeding records are from Quebec. Small numbers of this population winter in the Maritime Provinces and along the northern Atlantic coastline in the United States. In Quebec, the eastern population inhabits the balsam fir-white birch forest regions of the province. More specifically, birds appear to be restricted to small, high elevation lakes north of the St. Lawrence Estuary and Gulf. During the non-breeding season, the species spends time in the coastal waters of the Estuary and Gulf.	No	NA
Ivory Gull	*Pagophila eburnea*	In Canada, the species breeds exclusively in Nunavut. Wintering occasionally along the eastern coasts of Newfoundland and Labrador, particularly the Great Northern Peninsula of Newfoundland. Outside the breeding season, Ivory Gulls live near the edges of pack ice or drift ice.	No	NA
Red Crossbill	*Loxia curvirostra percna*	Red Crossbills are highly specialized for conifer habitats. Unlogged or mature forests that produce abundant cones are this bird's preferred habitat. Habitats that furnish the Red Crossbill percna subspecies with conifer seeds are large, mature black spruce and balsam fir stands and, on smaller scales throughout the island, red pine, white pine, and white spruce stands. In addition to foraging in these stands, the bird also roosts and nests there; however, the foraging sites can be distant from the roosting and nesting sites. Because this subspecies is hard to identify in the field, it is not certain that all of the Red Crossbills observed in Newfoundland have, in fact, been of the rare percna subspecies.	Yes	Moderate
Rusty Blackbird	*Euphagus carolinus*	The Rusty Blackbird nests in the boreal forest and favours the shores of wetlands such as slow-moving streams, peat bogs, marshes, swamps, beaver ponds and pasture edges. In wooded areas, the Rusty Blackbird only rarely enters the forest interior. During the winter, the Rusty Blackbird mainly frequents damp forests and, to a lesser extent, cultivated fields.	Yes	Low

Note: These were identified by ACCDC as potentially occurring within the MDA and the likelihood of occurrence is based on field observations and habitat suitability.

2.4.4 Other Wildlife Surveys

Little brown bat (*Myotis lucifugus*), a *SAR* protected under *SARA*, is likely to occur within the MDA. Little brown bat was given an emergency listing of "Endangered" by SARA in 2014 because of rapid population declines in Canada due to a deadly wildlife disease known as White-nose Syndrome (WNS) (Environment Canada 2014).

Wildlife Survey Methods

Baseline wildlife surveys occurred concurrently with bird, wetland and vegetation surveys in early July and August 2017. During these surveys all habitat types were traversed in the MDA.

Evidence of wildlife, including small mammals, furbearers, black bear (*Ursus americanus*), moose (*Alces alces*), and amphibians were recorded if and when encountered. Evidence of the presence of these animals consisted of observations of tracks, scat, auditory detections, etc.

Wildlife Survey Results

A variety of wildlife species was detected on the trails and forests within the MDA, including mammals, and amphibians. Mammal species detected during the surveys included moose, black bear, beaver (*Castor canadensis*), red fox (*Vulpes vulpes)*, red squirrel (*Tamiasciurus hudsonicus*), and snowshoe hare *(Lepus americanus)*. These species were detected from scat and tracks, except for red squirrel, which was directly observed throughout the MDA. Moose was the most commonly detected mammal species in the MDA. Other mammals that may be found in the area but were not detected on surveys include beaver (*Castor canadensis*), American marten (*Martes americana*), American mink (*Neovison vison*), ermine (*Mustela erminea*), coyote *(Canis latrans)*, little brown bat (*Myotis lucifugus*), deermouse (*Peromyscus maniculatus)*, masked shrew *(Sorex cinereus)*, and red backed vole *(Myodes rutilus).*

Green frog *(Lithobates clamitans)* was the only amphibian species detected during surveys. However, American toad (*Anaxyrus americanus*), wood frog (*Lithobates sylvaticus*), and mink frogs *(Lithobates septentrionalis)* are known to occur on the island and are likely present within the MDA.

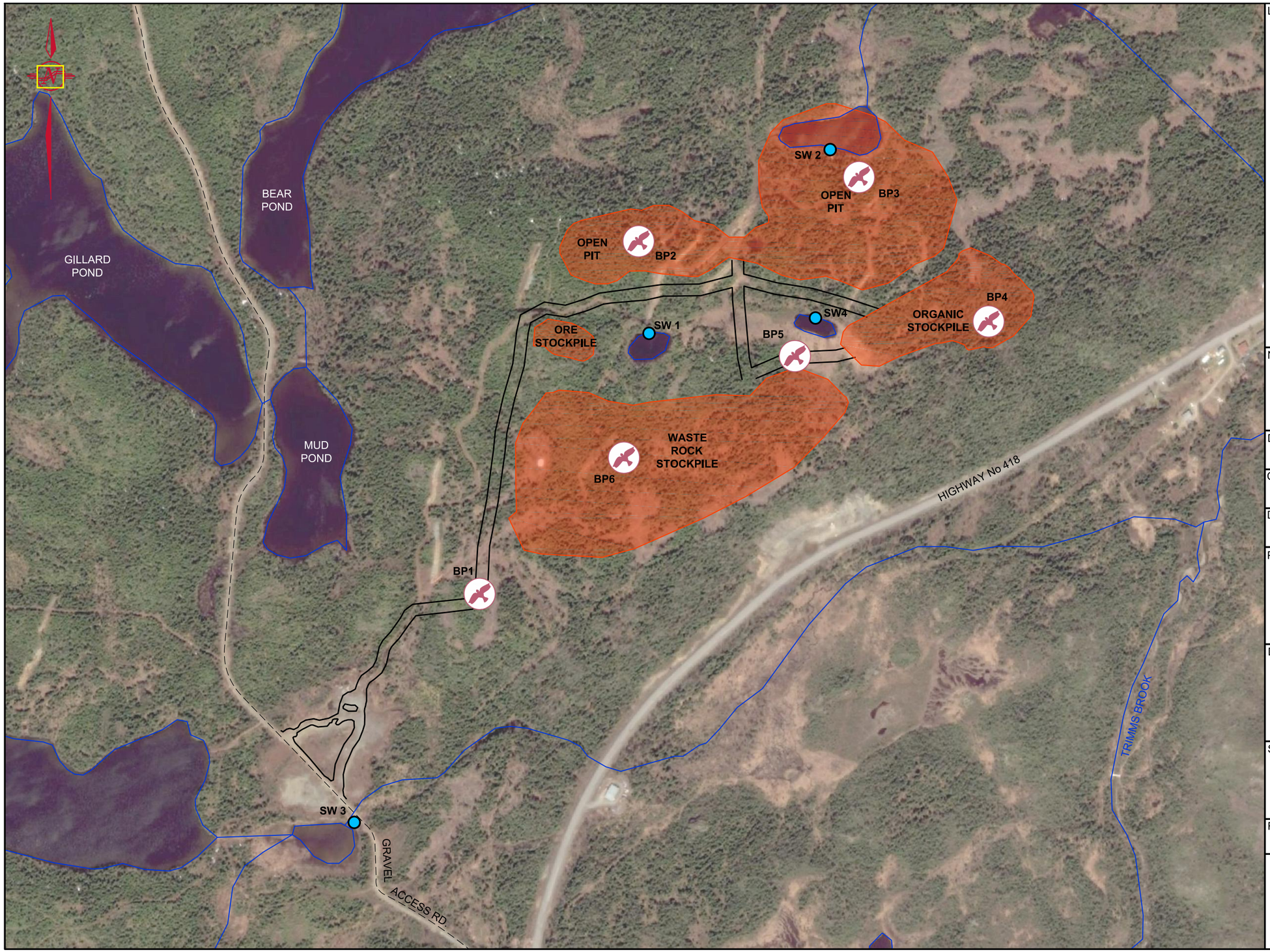
In general, the MDA appears to have a relatively low diversity and abundance of mammal and amphibian species. No evidence of SAR was detected in the MDA during surveys. However, it is probable that little brown bat, a federally Endangered species, is using the area.

Table 5 summarizes the habitat requirements of SAR wildlife species identified by the ACCDC as potentially occurring within the MDA. Table 5 also indicates the likelihood of occurrence for these species based on field observations and observed habitat within the MDA.

Table 5: Summary of Wildlife Species at Risk

Species	Scientific Name	Habitat Summary	Habitat Present	Likelihood of Occurrence
Newfoundland Marten	*Martes americana atrata*	The atrata subspecies of the American Marten is found in Canada, on the island of Newfoundland and in northern Quebec and Labrador. The Newfoundland population occurs only on the island of Newfoundland. The Newfoundland population of the American Marten is currently found in three main forest patches in western Newfoundland (Little Grand Lake, Red Indian Lake and Main River) and on the east coast of Newfoundland (Terra Nova National Park of Canada). Smaller populations occur in peripheral areas near St. George's and Lobster House Hill. Newfoundland Marten prefer mature (old growth) coniferous and mixed-wood forests and coniferous forests of varying ages. Martens require dense overhead cover, coarse woody debris, shrubs, and trees with low-hanging branches.	Yes	Low - Moderate
Polar Bear	*Ursus maritimus*	In Canada, the species is found in ice-covered regions from Yukon and the Bering Sea in the west to Newfoundland and Labrador in the east and from northern Ellesmere Island south to James Bay. The bears are found mainly in the coastal regions of the Arctic Ocean and in the channels between the islands. The Polar Bear frequents the southern edge of the multi-year pack ice of the Arctic Ocean (the ice-covered waters surrounding the North Pole). It is commonly found in coastal areas and in the channels between the islands and archipelagos of the Arctic.	Yes	Low

Note: These were identified by ACCDC as potentially occurring within the MDA and the likelihood of occurrence is based on field observations and habitat suitability.



Legend

- BIRD POINT (BP) COUNT LOCATION
- SURFACE WATER
- WATERCOURSE
- PROPOSED ROAD
- PROPOSED MINE DEVELOPMENT AREA

Note

1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL PHOTOGRAPH FROM 2015. SOURCE GOOGLE EARTH.

Drawn By	Checked By
CHG	DR
Calculations By	**Checked By**
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Date: JANUARY 2018

Project: ARGYLE BASELINE STUDIES

Drawing: BIRD POINT COUNT AND SURFACE WATER SAMPLE LOCATIONS

Scale: 1:5000

0 100 200 300m

File No.	Drawing	Revision No.
800160901	FIGURE 5	0

GEMTEC
CONSULTING ENGINEERS AND SCIENTISTS

N:\DRAWINGS\80000\80016.09\800160901.DWG

2.5 Aquatic Habitat Assessment

A visual/qualitative assessment of the potential for fish and fish habitat was carried out to determine if the aquatic habitats present could potentially support fish populations. The visual assessment noted waterbody type, flow regime, substrate type, and accessibility from downstream waters that could support fish populations. Assessments were made from shorelines of any accessible waterbodies.

2.5.1 Wetland and Surface Water Features

There are several surface water features within the MDA (Figure 3). Wetland 3 and 6 contain ponded surface water features, however, both are groundwater-fed fens without inflows or outflows, making them unsuitable as fish habitat. Wetland 4 also contains a very small ephemeral pond that does not have an inlet or outlet. The substrate in all ponds consists of peaty muck. An ephemeral drainage was identified at the outlet of Wetland 2. This drainage flowed over a very steep slope and was deemed incapable of supporting fish. As mentioned previously, there is a mapped watercourse that appears as part of the provincial watercourse inventory flowing through and discharging from WL6. No obvious evidence of this watercourse was observed within the MDA. A watercourse may be present further down gradient; however this area was not investigated as it is well outside the MDA and scope of study.

2.5.2 Wetland 1 and Unnamed Tributary

Wetland 1 was classified as a wetland complex and is connected to a lake to the west (Figure 3). A significant portion of this wetland consists of a shallow pond with a gravel/cobble substrate and the maximum depth is unknown, but expected to be less than 2 m based on the surrounding geomorphology and landscape position. The pond was sparsely vegetated along the margins with Slender sedge *(Carex lasiocarpa)*, Water lobelia *(Lobelia dortmanna)* and pondweed *(Potamogeton spp.)*. The outlet of Wetland 1 consists of a stream channel with a gravel/cobble substrate with a gentle channel gradient within the MDA and increases significantly as it flows east down a steep hillside toward Route 418. Wetland 1 appears to provide aquatic pond habitats capable of supporting fish. The unnamed watercourse flowing east may support fish in the upper reaches; however, fish passages may be impeded due to steep channel gradient.

Banded Kill fish (*Fundulus diaphanus),* a SAR fish species identified by the ACCDC as potentially occurring in the MDA is unlikely to inhabit the Wetland 1 pond because it cannot use inland waters where there are barriers to migration such as steep gradients like those observed along the unnamed tributary discharging from Wetland 1.

2.6 Surface Water Quality Monitoring and Sampling

To determine baseline conditions with respect to water quality across the site, field water quality measurements were collected at four locations (SW-1 to SW-4) to evaluate general property conditions using a Horiba multi-parameter water quality meter. Those measurements included:

- pH;

- temperature;
- conductivity;
- dissolved oxygen;
- turbidity; and
- TDS.

In addition to collecting in-situ measurements, surface water samples were also collected at each of the four locations on July 7, 2017 and submitted for laboratory analysis of general chemistry and total metals. One duplicate sample (SW4A) was collected at location SW4 for quality assurance, quality control purposes. All samples were collected in clean laboratory-supplied bottles and submitted to AGAT laboratories in St. John's for analysis.

Surface water quality monitoring and sampling locations are presented in Table 6.

Table 6: Surface Water Quality Monitoring and Sampling Locations

Station ID	Northing	Easting
SW-1	567363	5536339
SW-2	567596	5536575
SW-3	566984	5535709
SW-4	567577	5536358

The Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (FWAL) provide applicable criteria for assessing water quality.

2.6.1 Surface Water Quality Monitoring and Sampling Results

Field parameters were measured at the time of sample collection and results are presented in Table 7.

Table 7: Field Water Quality Monitoring Results

Parameter	SW-1	SW-2	SW-3	SW-4
pH (pH units)	7.5	7.67	7.31	7.09
Temperature (°C)	18.7	19.5	18.74	19.9
Conductivity (µS/cm)	63.6	80.2	51.7	51.6
Dissolved Oxygen (mg/L)	8.89	8.18	8.81	9.25
Turbidity (NTU)	0.91	1.75	0.41	0.71
TDS (g/L)	47	58	38	37

Field parameters can be summarized as follows:

- Water temperatures ranged from 18.7 to 19.9 C;
- Field pH ranged from 7.09 to 7.67
- Dissolved Oxygen ranged from 8.18 mg/L to 9.25 mg/L; and
- Conductivity ranged from 51.6 µS/cm to 80.2 µS/cm.

In addition to the field monitoring, surface water samples were collected at each of the four locations and submitted for laboratory analysis of general chemistry and total metals. One duplicate sample (SW4A) was collected at location SW4 for quality assurance, quality control purposes. The surface water laboratory test results are presented in Table H1 and H2 in Appendix H. Laboratory certificates of analysis are included in Appendix I.

Parameters outside the CCME FWAL guidelines are as follows:

- Aluminum concentrations of 102 µg/L exceeded the guideline limit of 100 µg/L in SW-1.

3.0 Conclusions

Based on the findings of these studies, the following conclusions are presented:

- The Project is located within an area having low historic resource potential;
- A total of 6 wetlands were identified within the proposed MDA. The delineated wetlands ranged in size from approximately 0.03 hectares to 4.7 hectares; however, several wetlands extended beyond the MDA. In general, the encountered wetlands have high wetland functionality in native plant habitat;
- The concentration of aluminum (102 µg/L) in surface water sample SW-1 exceeded the Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CCME FWAL) limit of 100 µg/L. All other total metals and general chemistry were below laboratory detection limits or below the CCME FWAL criteria;
- One rare vascular flora species was identified within the MDA: Common wintergreen *(Chimaphila umbellata)*;
- There is little or no viable fish habitat in the MDA; therefore the potential for fish to be present is very low; and
- A total of 20 bird species comprising of 89 individuals were documented during the Breeding Bird Survey. None of the species recorded are considered SAR.

4.0 Closure

This report has been prepared for the sole benefit of our client, Anaconda Mining Inc. The report may not be relied upon by any other person or entity without the express written consent of GEMTEC Consulting Engineers and Scientists and our client, Anaconda Mining Inc.

Any use that a third party makes of this report, or any reliance or decisions made based on it, is the responsibility of such third parties. GEMTEC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The information presented within this report represents the best judgment of the trained professional and technical staff based on current standards, site and project information known at the time and project area conditions observed by staff at the time the work was performed.

Should additional information become available, GEMTEC Limited requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

5.0 References

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US Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)

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Appendix A

Wetland Photos

Photo 1: Wetland 1, viewed west from access road (July 5, 2017).

Photo 2: Wetland 1, viewed east from access road (July 5, 2017).

Photo 3: Wetland 2, viewed southwest (July 5, 2017).

Photo 4: Wetland 2, viewed south (July 5, 2017).

Photo 5: Wetland 3, viewed west showing ponded water (July 5, 2017).

Photo 6: Wetland 3, viewed east showing (July 5, 2017).

Photo 7: Wetland 4, viewed east showing ponded water (July 5, 2017).

Photo 8: Wetland 4, viewed north (July 5, 2017).

Photo 9: Wetland 5, viewed north (July 5, 2017).

Photo 10: Wetland 6, viewed northeast showing ponded water (July 5, 2017).

Photo 11: Wetland 6, viewed south showing ponded water (July 5, 2017).

Appendix B

Habitat Photos

Photo 1: Mature balsam fir/black spruce habitat (July 7, 2017).

Photo 2: Young balsam fir/black spruce habitat (July 7, 2017).

Photo 3: Disturbed area (July 7, 2017).

Appendix C

ACCDC Info

Office 365 Outlook GEMTEC Darrol Rice

New | Reply all | Delete Archive Junk | Sweep Move to Categories Undo

RE: Data Request

DA Durocher, Adam <AdamDurocher@gov.nl.ca> Reply all |
Thu 5/18, 5:35 PM
Darrol Rice

You forwarded this message on 5/24/2017 9:21 PM

Download

Hi Darrol,
A ached are the species at risk data request results for your site at the Argyle Property outside Ming's Bight, Newfoundland and Labrador.

Summary: Within your study area, there were no rare animal or rare plant records found. **In the case of zero result data requests, there is no charge for the work.**

Secondly, a new addi on to our standard data requests is the use of Expert Opinion Maps. These maps are the result of our work with species-specific experts to gather sugges ons about loca ons where species at risk - either provincially, SARA or COSEWIC listed - may be found. While we don't have observa ons in our database for these species within your study area, our Expert Opinion Maps suggest that Banded Killifish, Ivory Gulls, Mountain Holly Fern, Red Crossbills and Rusty Blackbirds are *possible*, while Polar Bears in the spring & summer, Boreal Felt Lichen and Newfoundland Marten are *possible, but unlikely* in your area. Your area is also said to be within the Barrow's Goldeneye's *range*.

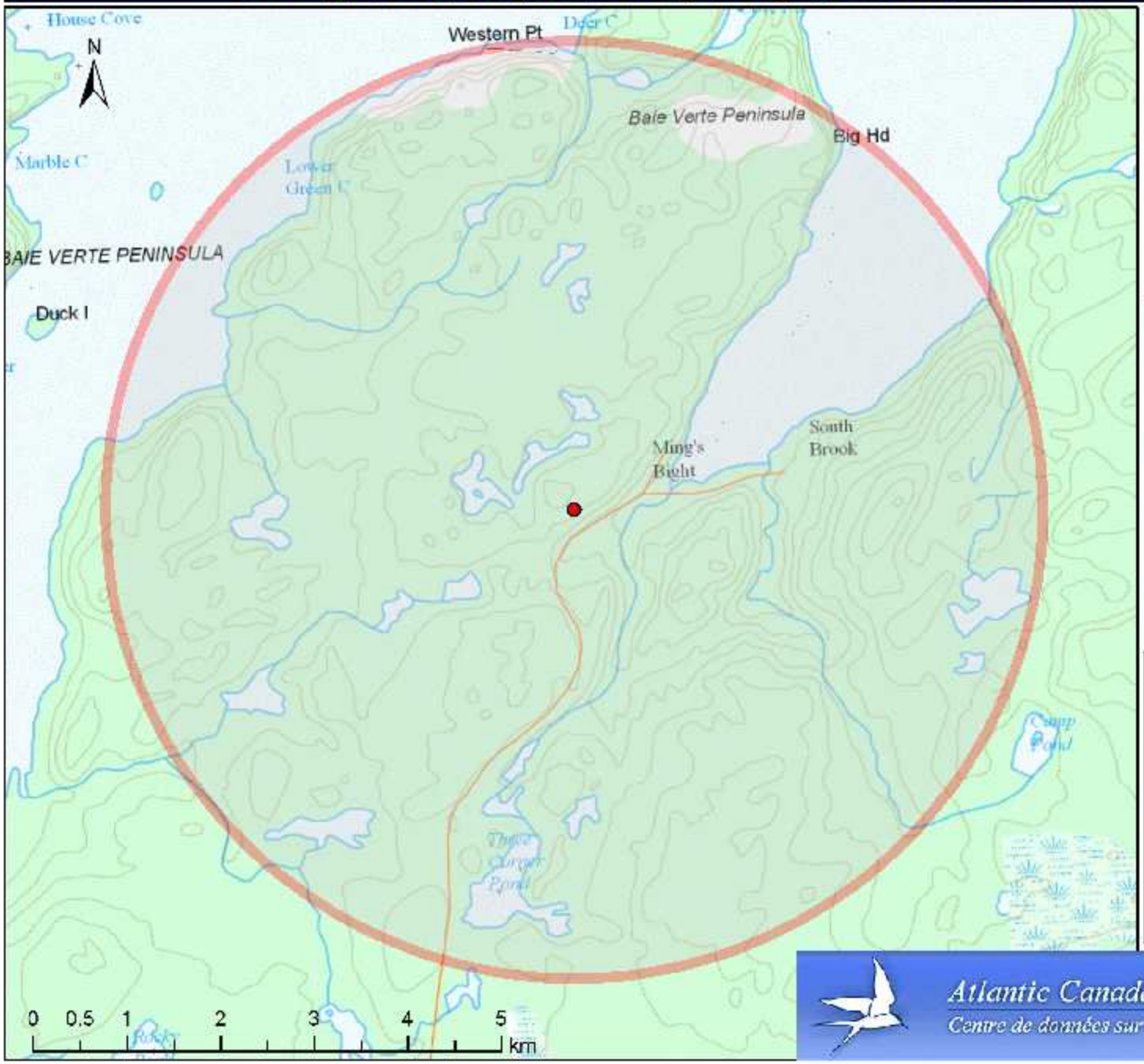
For more informa on, including a map absent of rare fauna/flora loca ons for your area, please refer to the following a ached document:
Map.jpg - shows the loca on of the 5 km bu□er around your site outside Ming's Bight.

Please do not hesitate to contact me if you have any ques ons.

Adam Durocher
Data Manager
Atlan c Canada Conserva on Data Centre

Adam 1 of 16

GIS Scan of Rare and Provincially/Federally Listed Species for Argyle Property near Ming's Bight, Newfoundland and Labrador



Legend

- Point of Interest (POI)
- 5 km Buffer Around POI

Atlantic Canada Conservation Data Centre
May 18, 2017
For: GEMTEC Ltd.
Data Request: RQ0616

Datum: Transverse Mercator NAD83
Note: Interpretations of this map should always be conducted in relation with data provided in spreadsheets and any other communications.

Atlantic Canada Conservation Data Centre
Centre de données sur la conservation du Canada Atlantique

GEMTEC
Consulting Engineers and Scientists

Client: Anaconda Mining Inc.
Project Number: 80016.09
Site: Argyle Property

TABLE C1: SPECIES STATUS

Common Name	Scientific Name	COSEWIC	SARA	NFLD SAR
Flora				
Mountain Holly Fern	*Polystichum scopulinum*	Threatened	Threatened	-
Boreal Felt Lichen	*Erioderma pedicellatum*	Special Concern	Special Concern	Vulnerable
Fauna				
Banded Killfish	*Fundulus diaphanus*	Special Concern	Special Concern	Vulnerable
Ivory Gull	*Pagophila eburnea*	Endangered	Endangered	Endangered
Red Crossbill	*Loxia curvirostra percna*	Threatened	Endangered	Endangered
Rusty Blackbird	*Euphagus carolinus*	Special Concern	Special Concern	Vulnerable
Polar Bear	*Ursus maritimus*	Special Concern	Special Concern	Vulnerable
Newfoundland Marten	*Martes americana atrata*	Threatened	Threatened	Threatened
Barrow's Goldeneye	*Bucephala islandica*	Special Concern	Special Concern	Vulnerable

TABLE C2: SPECIES HABITAT

Common Name	Scientific Name	Preferred Habitat
Flora		
Mountain Holly Fern	*Polystichum scopulinum*	In North America, Mountain Holly Fern grows in a specialized habitat consisting of shallow soil with a high concentration of heavy metals over a substrate of rocks containing iron and magnesium silicate (ultramafic rocks), mainly olivine and serpentine. The population on the island of Newfoundland was recorded in 1950 from the Humber West area (North Arm Mountain) in the western part of the island and occurred on the southerly slopes of a serpentine ridge.
Boreal Felt Lichen	*Erioderma pedicellatum*	Currently believed to exist only in Canada with two disjunct populations: the boreal population (the island of Newfoundland) and the Atlantic population (Nova Scotia and New Brunswick). The boreal population of the lichen is known from a total of 94 existing and historical sites scattered across the western and southern regions of the island of Newfoundland. Typical habitat for the Boreal Felt Lichen is northerly exposed forested slopes where cool and moist conditions prevail throughout most of the year. These mature forest sites are also rich in moisture-loving species such as sphagnum mosses and Cinnamon Fern. In well-lit forests, the Boreal Felt Lichen is found predominantly on tree trunks' whereas in more shaded habitats it is found mostly on branches.
Fauna		
Banded Killfish	*Fundulus diaphanus*	There are seven known sites for the Newfoundland population of Banded Killifish. The majority of these sites are coastal, in the southwestern portion of the island, although one site is inland, in the Indian Bay watershed of northeastern Newfoundland. Banded Killifish in Newfoundland tend to frequent quiet areas of clear lakes and ponds with a muddy or sandy bottom. For spawning, they depend on warm water where there is abundant submerged aquatic vegetation and considerable detritus. Although this type of habitat is abundant in Newfoundland watersheds, the species occurs only in very restricted areas of one or two of the lakes in the watersheds it occupies. It cannot use inland waters where there are barriers to migration, such as rivers with steep gradients; however, the Banded Killifish does not occur in habitats that meet the understood criteria and that appear to be accessible to existing populations.
Barrow's Goldeneye	*Bucephala islandica*	Data indicate that it breeds only in Canada with the only confirmed breeding records are from Quebec. Small numbers of this population winter in the Maritime Provinces and along the northern Atlantic coastline in the United States. In Quebec, the eastern population inhabits the balsam fir-white birch forest regions of the province. More specifically, birds appear to be restricted to small, high elevation lakes north of the St. Lawrence Estuary and Gulf. During the non-breeding season, the species spends time in the coastal waters of the Estuary and Gulf.
Ivory Gull	*Pagophila eburnea*	In Canada, the species breeds exclusively in Nunavut. Wintering occasionally along the eastern coasts of Newfoundland and Labrador, particularly the Great Northern Peninsula of Newfoundland. Outside the breeding season, Ivory Gulls live near the edges of pack ice or drift ice.
Newfoundland Marten	*Martes americana atrata*	The atrata subspecies of the American Marten is found in Canada, on the island of Newfoundland and in northern Quebec and Labrador. The Newfoundland population occurs only on the island of Newfoundland. The Newfoundland population of the American Marten is currently found in three main forest patches in western Newfoundland (Little Grand Lake, Red Indian Lake and Main River) and on the east coast of Newfoundland (Terra Nova National Park of Canada). Smaller populations occur in peripheral areas near St. George's and Lobster House Hill. Newfoundland Marten prefer mature (old growth) coniferous and mixed-wood forests and coniferous forests of varying ages. Martens require dense overhead cover, coarse woody debris, shrubs, and trees with low-hanging branches.
Polar Bear	*Ursus maritimus*	In Canada, the species is found in ice-covered regions from Yukon and the Bering Sea in the west to Newfoundland and Labrador in the east and from northern Ellesmere Island south to James Bay. The bears are found mainly in the coastal regions of the Arctic Ocean and in the channels between the islands. The Polar Bear frequents the southern edge of the multi-year pack ice of the Arctic Ocean (the ice-covered waters surrounding the North Pole). It is commonly found in coastal areas and in the channels between the islands and archipelagos of the Arctic.
Red Crossbill	*Loxia curvirostra percna*	Red Crossbills are highly specialized for conifer habitats. Unlogged or mature forests that produce abundant cones are this bird's preferred habitat. Habitats that furnish the Red Crossbill percna subspecies with conifer seeds are large, mature black spruce and balsam fir stands and, on smaller scales throughout the island, red pine, white pine, and white spruce stands. In addition to foraging in these stands, the bird also roosts and nests there; however, the foraging sites can be distant from the roosting and nesting sites. Because this subspecies is hard to identify in the field, it is not certain that all of the Red Crossbills observed in Newfoundland have in fact been of the rare percna subspecies.
Rusty Blackbird	*Euphagus carolinus*	The Rusty Blackbird nests in the boreal forest and favours the shores of wetlands such as slow-moving streams, peat bogs, marshes, swamps, beaver ponds and pasture edges. In wooded areas, the Rusty Blackbird only rarely enters the forest interior. During the winter, the Rusty Blackbird mainly frequents damp forests and, to a lesser extent, cultivated fields.

Appendix D

Plant Inventory

Scientific Name	Common Name	SRank
Abies balsamea	Balsam Fir	S5
Acer spicatum	Mountain Maple	S5
Achillea millefolium	Common Yarrow	SNA
Alnus incana	Speckled Alder	S5
Amelanchier bartramiana	Bartram Shadbush	S5
Anaphalis margaritacea	Pearly Everlasting	S5
Aralia hispida	Bristly Sarsaparilla	S3S4
Aralia nudicaulis	Wild Sarsaparilla	S5
Arethusa bulbosa	Swamp-Pink	S4S5
Athyrium filix-femina	Lady-Fern	S5
Betula cordifolia	Mountain paper birch	S4S5
Calamagrostis canadensis	Blue-Joint Reedgrass	S5
Carex bigelowii	Bigelow Sedge	S3S4
Carex brunnescens	Brownish Sedge	S5
Carex canescens	Hoary Sedge	S5
Carex castanea	Chestnut-Colored Sedge	S3S4
Carex disperma	Softleaf Sedge	S4S5
Carex echinata	Little Prickly Sedge	S5
Carex exilis	Coast Sedge	S5
Carex flava	Yellow Sedge	S4S5
Carex lasiocarpa	Slender Sedge	S5
Carex lenticularis	Shore Sedge	S4
Carex leptalea	Bristly-Stalk Sedge	S4S5
Carex leptonervia	Finely-Nerved Sedge	S4S5
Carex limosa	Mud Sedge	S5
Carex magellanica	A Sedge	S5
Carex michauxiana	Michaux Sedge	S4S5

Scientific Name	Common Name	SRank
Carex nigra	Black Sedge	S5
Carex oligosperma	Few-Seeded Sedge	S5
Carex pallescens	Pale Sedge	S3
Carex rostrata	Beaked Sedge	S3S4
Carex trisperma	Three-Seed Sedge	S5
Carex viridula	Little Green Sedge	S5
Chamaedaphne calyculata	Leatherleaf	S5
Chamerion angustifolium	Fireweed	S5
Chimaphila umbellata	Common Wintergreen	S2
Circaea alpina	Small Enchanter's Nightshade	S5
Clintonia borealis	Clinton Lily	S5
Corallorhiza maculata	Spotted Coralroot	S3S4
Cornus canadensis	Dwarf Dogwood	S5
Danthonia spicata	Poverty Oat-Grass	S5
Dasiphora fruticosa	Golden-Hardhack	S4S5
Doellingeria umbellata	Parasol White-Top	S5
Drosera intermedia	Spoon-Leaved Sundew	S4S5
Drosera rotundifolia	Roundleaf Sundew	S5
Dryopteris carthusiana	Spinulose Shield Fern	S4
Dryopteris cristata	Crested Wood Fern	S3S4
Dryopteris expansa	Spreading Woodfern	S3S4
Dryopteris intermedia	Glandular Wood Fern	S5
Empetrum nigrum	Black Crowberry	S5
Epilobium ciliatum	Hairy Willow-Herb	S5
Epilobium leptophyllum	Linear-Leaved Willow-Herb	S3
Equisetum arvense	Field Horsetail	S5
Equisetum sylvaticum	Woodland Horsetail	S5

Scientific Name	Common Name	SRank
Eriocaulon aquaticum	Seven-Angled Pipewort	S5
Eriophorum russeolum	Russet Cotton-Grass	S3
Eriophorum vaginatum	Tussock Cotton-Grass	S5
Eriophorum virginicum	Tawny Cotton-Grass	S4S5
Euphrasia nemorosa	Common Eyebright	S4S5
Eurybia radula	Rough-Leaved Aster	S5
Euthamia graminifolia	Flat-Top Fragrant-Golden-Rod	S5
Gaultheria hispidula	Creeping Snowberry	S5
Geum rivale	Purple Avens	S4S5
Glyceria canadensis	Canada Manna-Grass	S5
Glyceria striata	Fowl Manna-Grass	S5
Gymnocarpium dryopteris	Northern Oak Fern	S5
Hypericum perforatum	A St. John's-Wort	SNA
Ilex mucronata	Mountain holly	S5
Iris versicolor	Blueflag	S5
Juncus articulatus	Jointed Rush	S5
Juncus effusus	Soft Rush	S5
Juniperus communis	Ground Juniper	S5
Kalmia angustifolia	Sheep-Laurel	S5
Kalmia polifolia	Pale Laurel	S5
Larix laricina	American Larch	S5
Leontodon autumnalis	Autumn Hawkbit	SNA
Leucanthemum vulgare	Oxeye Daisy	SNA
Linnaea borealis	Twinflower	S5
Lobelia dortmanna	Water Lobelia	S5
Lonicera villosa	Mountain Fly-Honeysuckle	S5
Lupinus polyphyllus	Lupine	SNA

Scientific Name	Common Name	SRank
Lycopodium annotinum	Stiff Clubmoss	S5
Lysimachia terrestris	Swamp Loosestrife	S5
Maianthemum canadense	Wild Lily-of-The-Valley	S5
Maianthemum trifolium	Three-Leaf Solomon's-Plume	S5
Malaxis unifolia	Green Adder's-Mouth	S3
Menyanthes trifoliata	Bog Buckbean	S5
Mitella nuda	Naked Bishop's-Cap	S5
Moneses uniflora	One-Flower Wintergreen	S5
Monotropa uniflora	Indian-Pipe	S5
Myrica gale	Sweet Bayberry	S5
Neottia cordata		S5
Nuphar variegata	Yellow Cowlily	S5
Oclemena nemoralis	Bog Aster	S5
Orthilia secunda	One-Side Wintergreen	S5
Osmundastrum cinnamomeum	Cinnamon fern	S5
Packera aurea	Golden Groundsel	S3S4
Phleum pratense	Meadow Timothy	SNA
Picea mariana	Black Spruce	S5
Platanthera clavellata	Club-Spur Orchid	S5
Platanthera dilatata	Leafy White Orchis	S5
Platanthera psycodes	Small Purple Fringed Orchid	S4S5
Pogonia ophioglossoides	Snakemouth	S4
Populus tremuloides	Quaking Aspen	S4S5
Potamogeton epihydrus	Nuttall Pondweed	S4S5
Potentilla anserina	Silverweed	S5
Potentilla norvegica	Norwegian Cinquefoil	S4S5
Prunella vulgaris	Self-Heal	S3S5

Scientific Name	Common Name	SRank
Prunus pensylvanica	Fire Cherry	S4S5
Pteridium aquilinum	Bracken fern	S4S5
Pyrola asarifolia	Pink Wintergreen	S4
Pyrola chlorantha	Greenish-Flowered Wintergreen	S3S4
Pyrola minor	Lesser Wintergreen	S4
Ranunculus acris	Tall Butter-Cup	SNA
Ranunculus repens	Creeping Butter-Cup	SNA
Rhamnus alnifolia	Alderleaf Buckthorn	S5
Rhinanthus minor	Little Yellow-Rattle	S3
Rhododendron canadense	Rhodora	S5
Rhododendron groenlandicum	Labrador tea	S5
Rhynchospora alba	White Beakrush	S4S5
Ribes glandulosum	Skunk Currant	S5
Ribes lacustre	Bristly Black Currant	S4
Ribes triste	Swamp Red Currant	S4
Rosa nitida	Shining Rose	S4S5
Rubus arcticus	Northern Blackberry	S3S4
Rubus chamaemorus	Cloudberry	S5
Rubus idaeus	Red Raspberry	S5
Rubus pubescens	Dwarf Red Raspberry	S5
Salix discolor	Pussy Willow	S5
Salix humilis	Prairie Willow	S5
Salix pyrifolia	Balsam Willow	S4
Sanguisorba canadensis	Canada Burnet	S5
Sarracenia purpurea	Northern Pitcher-Plant	S5
Scirpus atrocinctus	Black-Girdle Bulrush	S5
Scirpus microcarpus	Small-Fruit Bulrush	S4S5

Scientific Name	Common Name	SRank
Solidago macrophylla	Large-Leaf Goldenrod	S5
Solidago rugosa	Rough-Leaf Goldenrod	S5
Solidago uliginosa	Bog Goldenrod	S5
Sorbus decora	Northern Mountain-Ash	S5
Sparganium fluctuans	Floating Bur-Reed	S2S3
Spiranthes romanzoffiana	Hooded Ladies'-Tresses	S4S5
Streptopus lanceolatus	Rosy Twistedstalk	S4
Symphyotrichum puniceum	Swamp Aster	S5
Taraxacum officinale	Common Dandelion	SNA
Taxus canadensis	Canadian Yew	S3S4
Thalictrum pubescens	Tall Meadow-Rue	S5
Thelypteris palustris	Marsh Fern	S3S4
Triadenum fraseri	Marsh St. John's-Wort	S5
Trichophorum alpinum	Alpine Cotton-Grass	S4S5
Trichophorum cespitosum	deergrass	S5
Trientalis borealis	Northern Starflower	S5
Trifolium hybridum	Alsike Clover	SNA
Trifolium repens	White Clover	SNA
Triglochin maritima	Common Bog Arrow-Grass	S5
Tussilago farfara	Colt's-foot	SNA
Utricularia intermedia	Flatleaf Bladderwort	S5
Vaccinium angustifolium	Late Lowbush Blueberry	S5
Vaccinium oxycoccos	Small Cranberry	S5
Vaccinium vitis-idaea	Mountain Cranberry	S5
Viburnum edule	Squashberry	S5

Appendix E

Rare Plant Photos

Photo 1: Common wintergreen *(Chimaphila umbellata)* in flower (Aug 10, 2017).

Photo 2: Common wintergreen *(Chimaphila umbellata)* habitat (Aug 10, 2017).

Appendix F

Rare Plant Locations (Common Wintergreen)

Scientific Name	Common Name	No. Plants	Area (m^2)	Location*	
				x	y
Chimaphila umbellata	Common wintergreen	40	5	300330.8	5537632.2
Chimaphila umbellata	Common wintergreen	50	25	300325.8	5537647.2
Chimaphila umbellata	Common wintergreen	4	4	300369.3	5537657.8
Chimaphila umbellata	Common wintergreen	100	100	300360.9	5537638.0
Chimaphila umbellata	Common wintergreen	50	25	300416.8	5537671.4
Chimaphila umbellata	Common wintergreen	15	1	300423.7	5537690.3
Chimaphila umbellata	Common wintergreen	2	1	300422.4	5537690.7
Chimaphila umbellata	Common wintergreen	7	1	300415.1	5537717.0
Chimaphila umbellata	Common wintergreen	3	1	300420.5	5537692.0
Chimaphila umbellata	Common wintergreen	4	2	300447.9	5537720.6
Chimaphila umbellata	Common wintergreen	80	45	300489.8	5537657.0
Chimaphila umbellata	Common wintergreen	35	4	300480.2	5537651.3
Chimaphila umbellata	Common wintergreen	36	4	300406.2	5537590.1
Chimaphila umbellata	Common wintergreen	42	9	300402.5	5537591.1
Chimaphila umbellata	Common wintergreen	75	25	300397.2	5537588.9
Chimaphila umbellata	Common wintergreen	6	2	300386.8	5537574.9
Chimaphila umbellata	Common wintergreen	2	1	300380.9	5537568.4
Chimaphila umbellata	Common wintergreen	3	1	300356.8	5537555.6
Chimaphila umbellata	Common wintergreen	22	4	300317.8	5537537.3
Chimaphila umbellata	Common wintergreen	43	9	300298.2	5537531.9
Chimaphila umbellata	Common wintergreen	60	6	300287.0	5537515.1
Chimaphila umbellata	Common wintergreen	2	1	300301.9	5537501.7
Chimaphila umbellata	Common wintergreen	22	1	300303.2	5537500.8
Chimaphila umbellata	Common wintergreen	25	1	300308.2	5537501.2
Chimaphila umbellata	Common wintergreen	33	2	300314.1	5537502.1
Chimaphila umbellata	Common wintergreen	100	4	300335.2	5537495.2
Chimaphila umbellata	Common wintergreen	22	1	300378.2	5537475.5

Scientific Name	Common Name	No. Plants	Area (m^2)	Location*	
				x	y
Chimaphila umbellata	Common wintergreen	33	2	300367.3	5537475.2
Chimaphila umbellata	Common wintergreen	50	4	300365.8	5537471.5
Chimaphila umbellata	Common wintergreen	100	9	300367.2	5537463.2
Chimaphila umbellata	Common wintergreen	200	400	300354.4	5537445.2
Chimaphila umbellata	Common wintergreen	16	16	300182.6	5537197.9
Chimaphila umbellata	Common wintergreen	200	150	300188.7	5537196.9
Chimaphila umbellata	Common wintergreen	16	1	300228.6	5537229.7
Chimaphila umbellata	Common wintergreen	200	100	300299.8	5537313.0
Chimaphila umbellata	Common wintergreen	17	1	300391.3	5537427.9
Chimaphila umbellata	Common wintergreen	34	1	300391.1	5537431.5
Chimaphila umbellata	Common wintergreen	25	2	300397.9	5537435.2
Chimaphila umbellata	Common wintergreen	18	4	300444.2	5537502.3
Chimaphila umbellata	Common wintergreen	28	16	300456.0	5537497.9
Chimaphila umbellata	Common wintergreen	17	1	300754.6	5537588.4
Chimaphila umbellata	Common wintergreen	50	5	300757.8	5537609.8
Chimaphila umbellata	Common wintergreen	23	4	300790.1	5537628.1
Chimaphila umbellata	Common wintergreen	30	4	300776.6	5537616.8
Chimaphila umbellata	Common wintergreen	7	4	300886.0	5537703.9
Chimaphila umbellata	Common wintergreen	100	100	300817.0	5537617.3
Chimaphila umbellata	Common wintergreen	21	1	300771.8	5537713.3
Chimaphila umbellata	Common wintergreen	11	1	300784.5	5537780.2
Chimaphila umbellata	Common wintergreen	31	4	300808.9	5537792.4
Chimaphila umbellata	Common wintergreen	28	1	300804.5	5537768.3
Chimaphila umbellata	Common wintergreen	8	1	300785.3	5537780.0
Chimaphila umbellata	Common wintergreen	10	1	300778.9	5537783.3
Chimaphila umbellata	Common wintergreen	14	1	300711.1	5537712.0
Chimaphila umbellata	Common wintergreen	26	2	300711.0	5537691.4

Scientific Name	Common Name	No. Plants	Area (m^2)	Location*	
				x	y
Chimaphila umbellata	Common wintergreen	75	4	300619.2	5537650.3
Chimaphila umbellata	Common wintergreen	17	25	300289.1	5537574.5
Chimaphila umbellata	Common wintergreen	75	4	300306.8	5537579.9
Chimaphila umbellata	Common wintergreen	40	6	300456.7	5537629.7
Chimaphila umbellata	Common wintergreen	40	6	300460.0	5537643.9
Chimaphila umbellata	Common wintergreen	50	6	300524.5	5537624.9
Chimaphila umbellata	Common wintergreen	100	25	300555.3	5537641.6
Chimaphila umbellata	Common wintergreen	300	25	300595.2	5537643.9
Chimaphila umbellata	Common wintergreen	100	10	300608.5	5537645.1
Chimaphila umbellata	Common wintergreen	50	5	300606.3	5537662.2
Chimaphila umbellata	Common wintergreen	23	2	300660.8	5537714.3
Chimaphila umbellata	Common wintergreen	20	1	300675.6	5537761.5
Chimaphila umbellata	Common wintergreen	150	30	300668.9	5537771.1
Chimaphila umbellata	Common wintergreen	7	1	300795.7	5537802.6
Chimaphila umbellata	Common wintergreen	17	1	300790.3	5537812.2
Chimaphila umbellata	Common wintergreen	11	4	300773.1	5537819.3
Chimaphila umbellata	Common wintergreen	100	5	300815.2	5537874.6
Chimaphila umbellata	Common wintergreen	75	1	300766.7	5537894.4
Chimaphila umbellata	Common wintergreen	50	2	300643.0	5537861.5
Chimaphila umbellata	Common wintergreen	2	1	300621.5	5537792.6
Chimaphila umbellata	Common wintergreen	100	6	300200.3	5537161.4
Chimaphila umbellata	Common wintergreen	11	1	300242.0	5537215.2
Chimaphila umbellata	Common wintergreen	50	30	300336.6	5537257.8
Chimaphila umbellata	Common wintergreen	200	25	300347.1	5537248.8
Chimaphila umbellata	Common wintergreen	200	25	300350.2	5537258.5
Chimaphila umbellata	Common wintergreen	20	25	300390.2	5537291.0
Chimaphila umbellata	Common wintergreen	50	20	300387.2	5537276.9

Scientific Name	Common Name	No. Plants	Area (m^2)	Location*	
				x	y
Chimaphila umbellata	Common wintergreen	500	150	300381.1	5537268.0
Chimaphila umbellata	Common wintergreen	100	6	300397.1	5537280.6
Chimaphila umbellata	Common wintergreen	75	6	300408.2	5537286.9
Chimaphila umbellata	Common wintergreen	100	4	300478.0	5537377.6
Chimaphila umbellata	Common wintergreen	75	4	300792.1	5537541.4
Chimaphila umbellata	Common wintergreen	6	1	300886.5	5537613.3
Chimaphila umbellata	Common wintergreen	20	4	300908.4	5537604.0
Chimaphila umbellata	Common wintergreen	50	4	300915.2	5537602.6
Chimaphila umbellata	Common wintergreen	35	2	300931.8	5537599.9
Chimaphila umbellata	Common wintergreen	20	4	300958.9	5537627.4
Chimaphila umbellata	Common wintergreen	75	15	300970.8	5537638.0
Chimaphila umbellata	Common wintergreen	25	4	300979.6	5537642.9
Chimaphila umbellata	Common wintergreen	22	2	300814.3	5537602.9
Chimaphila umbellata	Common wintergreen	2	1	300772.4	5537594.2
Chimaphila umbellata	Common wintergreen	20	1	300758.8	5537593.3
Chimaphila umbellata	Common wintergreen	200	25	300599.3	5537531.3
Chimaphila umbellata	Common wintergreen	50	2	300174.4	5536761.2
Chimaphila umbellata	Common wintergreen	100	16	300178.0	5536740.7
Chimaphila umbellata	Common wintergreen	45	2	300182.6	5536746.6

*Coordinate system: NAD1983 CSRS MTM 2

Appendix G

Bird Point Survey Data

Date	Point	Time (am)	Bird Codes	Common Name	Scientific Name	Bearing (°)	Distance (m)	Breeding Code	Number
06-Jul-17	PT1	5:35	DOWO	Downy Woodpecker	Picoides pubescens	20	50	S	1
06-Jul-17	PT1	5:35	FOSP	Fox Sparrow	Passerella iliaca	250	75	S	1
06-Jul-17	PT1	5:35	FOSP	Fox Sparrow	Passerella iliaca	120	75	S	1
06-Jul-17	PT1	5:35	NOTH	Northern Waterthrush	Parkesia noveboracensis	325	50	S	1
06-Jul-17	PT1	5:35	RCKI	Ruby-crowned Kinglet	Regulus calendula	280	100	S	1
06-Jul-17	PT1	5:35	WTSP	White-throated Sparrow	Zonotrichia albicollis	335	40	S	1
06-Jul-17	PT1	5:35	YBFL	Yellow-bellied Flycatcher	Empidonax flaviventris	70	20	X	1
06-Jul-17	PT2	5:50	FOSP	Fox Sparrow	Passerella iliaca	75	100	S	1
06-Jul-17	PT2	5:50	HETH	Hermit Thrush	Catharus guttatus	90	125	S	1
06-Jul-17	PT2	5:50	MAWA	Magnolia Warbler	Setophaga magnolia	140	75	S	1
06-Jul-17	PT2	5:50	WTSP	White-throated Sparrow	Zonotrichia albicollis	45	50	S	1
06-Jul-17	PT2	5:50	YBFL	Yellow-bellied Flycatcher	Empidonax flaviventris	200	50	S	1
06-Jul-17	PT2	5:50	YRWA	Yellow-rumped Warbler	Setophaga coronata	175	100	S	1
06-Jul-17	PT3	6:11	AMRO	American Robin	Turdus migratorius	200	200	S	1
06-Jul-17	PT3	6:11	BHVI	Blue-headed Vireo	Vireo solitarius	275	40	S	1
06-Jul-17	PT3	6:11	FOSP	Fox Sparrow	Passerella iliaca	300	100	S	1
06-Jul-17	PT3	6:11	NOTH	Northern Waterthrush	Parkesia noveboracensis	255	50	S	1
06-Jul-17	PT3	6:11	SWTH	Swainson's Thrush	Catharus ustulatus	20	75	S	1
06-Jul-17	PT3	6:11	YRWA	Yellow-rumped Warbler	Setophaga coronata	300	75	S	1
06-Jul-17	PT4	6:27	AMRO	American Robin	Turdus migratorius	360	50	S	1

Date	Point	Time (am)	Bird Codes	Common Name	Scientific Name	Bearing (°)	Distance (m)	Breeding Code	Number
06-Jul-17	PT4	6:27	BHVI	Blue-headed Vireo	Vireo solitarius	360	50	S	1
06-Jul-17	PT4	6:27	BOCH	Boreal Chickadee	Poecile hudsonicus	90	50	S	1
06-Jul-17	PT4	6:27	BTNW	Black-throated Green Warbler	Dendroica virens	270	75	S	1
06-Jul-17	PT4	6:27	GRJA	Gray Jay	Perisoreus canadensis	360	5	FY	1
06-Jul-17	PT4	6:27	YRWA	Yellow-rumped Warbler	Setophaga coronata	180	100	S	1
06-Jul-17	PT5	6:47	AMRO	American Robin	Turdus migratorius	180	75	S	1
06-Jul-17	PT5	6:47	NOTH	Northern Waterthrush	Parkesia noveboracensis	360	125	S	1
06-Jul-17	PT5	6:47	NOTH	Northern Waterthrush	Parkesia noveboracensis	90	25	S	1
06-Jul-17	PT5	6:47	RCKI	Ruby-crowned Kinglet	Regulus calendula	220	75	S	1
06-Jul-17	PT5	6:47	WTSP	White-throated Sparrow	Zonotrichia albicollis	45	100	S	1
06-Jul-17	PT6	7:15	FOSP	Fox Sparrow	Passerella iliaca	50	50	S	1
06-Jul-17	PT6	7:15	GRJA	Gray Jay	Perisoreus canadensis	180	100	S	1
06-Jul-17	PT6	7:15	HAWO	Hairy Woodpecker	Picoides villosus	90	175	S	1
06-Jul-17	PT6	7:15	NOTH	Northern Waterthrush	Parkesia noveboracensis	40	30	S	1
06-Jul-17	PT6	7:15	RCKI	Ruby-crowned Kinglet	Regulus calendula	270	200	S	1
06-Jul-17	PT6	7:15	RCKI	Ruby-crowned Kinglet	Regulus calendula	340	150	S	1
06-Jul-17	PT6	7:15	WTSP	White-throated Sparrow	Zonotrichia albicollis	10	150	S	1
06-Jul-17	PT6	7:15	YRWA	Yellow-rumped Warbler	Setophaga coronata	280	75	S	1
Incidental			AMRO	American Robin	Turdus migratorius	-	-	X	1
Incidental			ATTW	American tree-toed Woodpecker	Picoides dorsalis	-	-	S	1

Date	Point	Time (am)	Bird Codes	Common Name	Scientific Name	Bearing (°)	Distance (m)	Breeding Code	Number
Incidental			BHVI	Blue-headed Vireo	Vireo solitarius	-	-	S	1
Incidental			BOCH	Boreal Chickadee	Poecile hudsonicus	-	-	S	4
Incidental			BTNW	Black-throated Green Warbler	Dendroica virens	-	-	S	1
Incidental			DEJU	Dark-eyed Junco	Junco hyemalis	-	-	X	1
Incidental			FOSP	Fox Sparrow	Passerella iliaca	-	-	S	**1**
Incidental			FOSP	Fox Sparrow	Passerella iliaca	-	-	S	1
Incidental			FOSP	Fox Sparrow	Passerella iliaca	-	-	S	1
Incidental			FOSP	Fox Sparrow	Passerella iliaca	-	-	S	1
Incidental			GRJA	Gray Jay	Perisoreus canadensis	-	-	X	1
Incidental			HAWO	Hairy Woodpecker	Picoides villosus	-	-	P	2
Incidental			HETH	Hermit Thrush	Catharus guttatus	-	-	X	1
Incidental			MAWA	Magnolia Warbler	Setophaga magnolia	-	-	S	1
Incidental			MAWA	Magnolia Warbler	Setophaga magnolia	-	-	S	1
Incidental			MAWA	Magnolia Warbler	Setophaga magnolia	-	-	S	1
Incidental			NOTH	Northern Waterthrush	Parkesia noveboracensis	-	-	S	1
Incidental			NOTH	Northern Waterthrush	Parkesia noveboracensis	-	-	S	1
Incidental			NOTH	Northern Waterthrush	Parkesia noveboracensis	-	-	A	1
Incidental			OSPR	Osprey	Pandion haliaetus	-	-	CF	1
Incidental			RCKI	Ruby-crowned Kinglet	Regulus calendula	-	-	S	1
Incidental			RCKI	Ruby-crowned Kinglet	Regulus calendula	-	-	X	1

Date	Point	Time (am)	Bird Codes	Common Name	Scientific Name	Bearing (°)	Distance (m)	Breeding Code	Number
Incidental			WWCR	White-winged Crossbill	Loxia leucoptera	-	-	X	1
Incidental			WWCR	White-winged Crossbill	Loxia leucoptera	-	-	FO	20
Incidental			YBFL	Yellow-bellied Flycatcher	Empidonax flaviventris	-	-	S	1
Incidental			YBFL	Yellow-bellied Flycatcher	Empidonax flaviventris	-	-	S	1
Incidental			YRWA	Yellow-rumped Warbler	Setophaga coronata	-	-	P	2

S Singing
X Observed in breeding season – no breeding evidence
FY Fledged Young
P Pair Observed
A Agitated Behaviour
CF Carrying Food
FO Fly Over

Appendix H

Analytical Data

Table H1: General Chemistry, Surface Water

Sample Station:	Units	CCME FWAL[1]	RDL[2]	SW-1	SW-2	SW-3	SW-4	SW-4A (DUP)
Date Sampled:				July 7/2017	July 7/2017	July 7/2017	July 7/2017	July 7/2017
Alkalinity	mg/L	-	5	30	39	24	20	21
Ammonia	mg/L	Fact Sheet[3]	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Calcium	mg/L	-	0.1	8.9	12.8	7.5	6.9	6.7
Chloride	mg/L	640[4], 120[4]	1	4	4	4	5	5
Conductivity	µS/cm	-	1	74	94	62	58	59
Fluoride	mg/L	0.12	0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Magnesium	mg/L	-	0.1	1.9	1.9	1.7	1.1	1.1
Nitrate + Nitrite	mg/L	-	0.05	0.07	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	550[4], 13[4]	0.05	0.07	<0.05	<0.05	<0.05	<0.05
Nitrite	mg/L	0.06	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Phosphate	mg/L	-	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH		6.5-9.0	-	7.44	7.34	7.31	7.36	7.40
Phosphorous	mg/L	Fact Sheet	0.02	0.03	0.03	0.03	0.03	0.02
Potassium	mg/L	-	0.1	0.1	0.2	0.1	0.1	0.2
r-Silica	mg/L	-	0.5	<0.5	0.60	<0.5	<0.5	<0.5
Sodium	mg/L	-	0.1	3.7	4.3	3.8	3.9	3.8
Sulphate	mg/L	-	2	<2	<2	<2	<2	<2
Total Organic Carbon	mg/L	-	0.5	10.3	12.5	11.5	6.9	6.9
Turbidity	NTU	Narrative	0.1	2.9	1.9	1.7	1.7	1.3
Calculated Parameters								
Bicarbonate Alkalinity	mg/L	-	5	30	39	24	20	21
Carbonate Alkalinity	mg/L	-	10	<10	<10	<10	<10	<10
Hydroxide	mg/L	-	5	<5	<5	<5	<5	<5
Cation sum	meq/L	-	-	0.78	1.00	0.70	0.62	0.60
Anion sum	meq/L	-	-	0.72	0.89	0.59	0.54	0.56
% difference	%	-	-	4.1	5.6	7.9	6.5	3.7
Hardness	mg/L	-	-	30.0	39.8	25.7	21.8	21.3
Saturation pH (@ 20C)	-	-	-	9.12	8.86	9.28	9.39	9.39
Saturation pH (@ 4C)	-	-	-	9.44	9.18	9.60	9.71	9.71
Langelier Index (@ 20C)	-	-	-	-1.68	-1.52	-1.97	-2.03	-1.99
Langelier Index (@ 4C)	-	-	-	-2.00	-1.84	-2.29	-2.35	-2.31
True Color	TCU	Narrative	5	58	51	53	18	13
Kjeldahl Nitrogen	mg/L	-	0.4	1.1	0.6	0.6	1	0.6
Total Dissolved Solids	mg/L	-	1	37	47	32	29	30
Total Suspended Solids	mg/L	Narrative	5	<5	<5	<5	<5	<5

Collection of samples conducted by GEMTEC Ltd and analysis provided by AGAT Laboratories.

Notes:

1. CCME FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life Summary Table (CCME, 2015).
2. RDL = Reported Detection Limit.
3. Guideline is pH and temperature-dependent.
4. Short-Term Exposure, Long-Term Exposure.

DUP - Field duplicate taken at SW4.

"-" = None established/ not measured.

Results that exceed the guideline are bold and shaded.

Table H2: Total Metals, Surface Water

Sample Station:	Units	CCME FWAL[1]	RDL[2]	SW-1	SW-2	SW-3	SW-4	SW-4A (DUP)
Date Sampled:				07-Jul-17	07-Jul-17	07-Jul-17	07-Jul-17	07-Jul-17
Aluminium	µg/L	100 [3]	5	**102**	57	79	38	39
Antimony	µg/L		2	<2	<2	<2	<2	<2
Arsenic	µg/L	5	2	2	<2	<2	<2	<2
Barium	µg/L		5	<5	<5	<5	<5	<5
Beryllium	µg/L		2	<2	<2	<2	<2	<2
Bismuth	µg/L		2	<2	<2	<2	<2	<2
Boron	µg/L	29000[7], 1500[7]	5	<5	<5	<5	<5	<5
Cadmium	µg/L	1.0 [7], 0.09 [7]	0.017	<0.017	<0.017	<0.017	<0.017	<0.017
Chromium	µg/L		1	1	1	1	<1	<1
Cobalt	µg/L		1	<1	<1	<1	<1	<1
Copper	µg/L	2 [4]	1	<1	<1	<1	1	<1
Iron	µg/L	300	50	84	97	116	114	108
Lead	µg/L	1 [5]	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese	µg/L		2	<2	4	3	7	6
Mercury	µg/L	0.026	0.026	<0.026	<0.026	<0.026	<0.026	<0.026
Molybdenum	µg/L	73	2	<2	<2	<2	<2	<2
Nickel	µg/L	25 [6]	2	<2	<2	<2	<2	<2
Selenium	µg/L	1	1	<1	<1	<1	<1	<1
Silver	µg/L	0.25	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Strontium	µg/L		5	20.0	25	18	11	11
Thallium	µg/L	0.8	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L		2	<2	<2	<2	<2	<2
Titanium	µg/L		2	<2	<2	<2	<2	<2
Uranium	µg/L	33[7], 15[7]	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	µg/L		2	<2	<2	<2	<2	<2
Zinc	µg/L	30	5	<5	<5	<5	<5	<5

Collection of samples conducted by GEMTEC Ltd and analysis provided by AGAT Laboratories

Notes:

1- CCME FWAL = CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life Summary Table (CCME, 2015).

2.- RDL = Reported Detection Limit.

3 - Aluminum guideline = 5 µg/L at pH<6.5, or 100 µg/L at pH>=6.5

4 - Copper guideline [µg/L], for water hardness between 82 and 180 mg/L as CaCO3; If water hardness is <82, guideline = 2; If water hardness is >180, guideline = 4; If water hardness is unknown, guideline = 2

5 - Lead guideline [µg/L], for water hardness between 60 and 180 mg/L as CaCO3; If water hardness is less than 60, guideline = 1; If water hardness is greater than 180, guideline = 7; If water hardness is unknown, guideline = 1

6 - Nickel guideline [µg/L], for water hardness between 0 and 60 as CaCO3, guideline = 25. Long Term Exposure

7 -Short-Term Exposure, Long-Term Exposure.

DUP - Field duplicate taken at SW4.

Results that exceed the guideline are bold and shaded.

Appendix I

Laboratory Certificates of Analysis

AGAT Laboratories

11 Morris Drive, Unit 122
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FAX (902)468-8924
http://www.agatlabs.com

CLIENT NAME: GEMTEC LIMITED
10 Maverick Place
Paradise, NL A1L 1Y8
709722-2275

ATTENTION TO: Darrol Rice

PROJECT: 80016.09

AGAT WORK ORDER: 17X235130

WATER ANALYSIS REVIEWED BY: Laura Baker, Inorganics Data Reporter

DATE REPORTED: Jul 18, 2017

PAGES (INCLUDING COVER): 9

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (902) 468-8718

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories
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Certificate of Analysis

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

CLIENT NAME: GEMTEC LIMITED

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

Mercury Analysis in Water (Total)

DATE RECEIVED: 2017-07-10

DATE REPORTED: 2017-07-18

		SAMPLE DESCRIPTION:		SW-1	SW-2	SW-3	SW-4	SW-4A
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2017-07-07	2017-07-07	2017-07-07	2017-07-07	2017-07-07
Parameter	Unit	G / S	RDL	8539235	8539238	8539240	8539241	8539243
Total Mercury	ug/L		0.026	<0.026	<0.026	<0.026	<0.026	<0.026

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

CLIENT NAME: GEMTEC LIMITED

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2017-07-10

DATE REPORTED: 2017-07-18

		SAMPLE DESCRIPTION:		SW-1	SW-2	SW-3	SW-4	SW-4A
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2017-07-07	2017-07-07	2017-07-07	2017-07-07	2017-07-07
Parameter	Unit	G / S	RDL	8539235	8539238	8539240	8539241	8539243
pH				7.44	7.34	7.31	7.36	7.40
Reactive Silica as SiO2	mg/L		0.5	<0.5	0.6	<0.5	<0.5	<0.5
Chloride	mg/L		1	4	4	4	5	5
Fluoride	mg/L		0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L		2	<2	<2	<2	<2	<2
Alkalinity	mg/L		5	30	39	24	20	21
True Color	TCU		5	58	51	53	18	13
Turbidity	NTU		0.1	2.9	1.9	1.7	1.7	1.3
Electrical Conductivity	umho/cm		1	74	94	62	58	59
Nitrate + Nitrite as N	mg/L		0.05	0.07	<0.05	<0.05	<0.05	<0.05
Nitrate as N	mg/L		0.05	0.07	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	mg/L		0.5	10.3	12.5	11.5	6.9	6.9
Ortho-Phosphate as P	mg/L		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Sodium	mg/L		0.1	3.7	4.3	3.8	3.9	3.8
Total Potassium	mg/L		0.1	0.1	0.2	0.1	0.1	0.2
Total Calcium	mg/L		0.1	8.9	12.8	7.5	6.9	6.7
Total Magnesium	mg/L		0.1	1.9	1.9	1.7	1.1	1.1
Bicarb. Alkalinity (as CaCO3)	mg/L		5	30	39	24	20	21
Carb. Alkalinity (as CaCO3)	mg/L		10	<10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5
Calculated TDS	mg/L		1	37	47	32	29	30
Hardness	mg/L			30.0	39.8	25.7	21.8	21.3
Langelier Index (@20C)	NA			-1.68	-1.52	-1.97	-2.03	-1.99
Langelier Index (@ 4C)	NA			-2.00	-1.84	-2.29	-2.35	-2.31
Saturation pH (@ 20C)	NA			9.12	8.86	9.28	9.39	9.39
Saturation pH (@ 4C)	NA			9.44	9.18	9.60	9.71	9.71
Anion Sum	me/L			0.72	0.89	0.59	0.54	0.56
Cation sum	me/L			0.78	1.00	0.70	0.62	0.60

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

CLIENT NAME: GEMTEC LIMITED

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2017-07-10

DATE REPORTED: 2017-07-18

		SAMPLE DESCRIPTION:		SW-1	SW-2	SW-3	SW-4	SW-4A
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2017-07-07	2017-07-07	2017-07-07	2017-07-07	2017-07-07
Parameter	Unit	G / S	RDL	8539235	8539238	8539240	8539241	8539243
% Difference/ Ion Balance (NS)	%			4.1	5.6	7.9	6.5	3.7
Total Aluminum	ug/L		5	102	57	79	38	39
Total Antimony	ug/L		2	<2	<2	<2	<2	<2
Total Arsenic	ug/L		2	2	<2	<2	<2	<2
Total Barium	ug/L		5	<5	<5	<5	<5	<5
Total Beryllium	ug/L		2	<2	<2	<2	<2	<2
Total Bismuth	ug/L		2	<2	<2	<2	<2	<2
Total Boron	ug/L		5	<5	<5	<5	<5	<5
Total Cadmium	ug/L		0.017	<0.017	<0.017	<0.017	<0.017	<0.017
Total Chromium	ug/L		1	1	1	1	<1	<1
Total Cobalt	ug/L		1	<1	<1	<1	<1	<1
Total Copper	ug/L		1	<1	<1	<1	1	<1
Total Iron	ug/L		50	84	97	116	114	108
Total Lead	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Manganese	ug/L		2	<2	4	3	7	6
Total Molybdenum	ug/L		2	<2	<2	<2	<2	<2
Total Nickel	ug/L		2	<2	<2	<2	<2	<2
Total Phosphorous	mg/L		0.02	0.03	0.03	0.03	0.03	0.02
Total Selenium	ug/L		1	<1	<1	<1	<1	<1
Total Silver	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Strontium	ug/L		5	20	25	18	11	11
Total Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin	ug/L		2	<2	<2	<2	<2	<2
Total Titanium	ug/L		2	<2	<2	<2	<2	<2
Total Uranium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Vanadium	ug/L		2	<2	<2	<2	<2	<2
Total Zinc	ug/L		5	<5	<5	<5	<5	<5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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Quality Assurance

CLIENT NAME: GEMTEC LIMITED

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Jul 18, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Standard Water Analysis + Total Metals															
pH	8539994		8.03	8.02	0.1%	<	106%	80%	120%	NA	80%	120%	NA	80%	120%
Reactive Silica as SiO2	1	8537124	4.5	4.7	4.3%	< 0.5	106%	80%	120%		80%	120%	90%	80%	120%
Chloride	8539235	8539235	4	4	NA	< 1	91%	80%	120%	NA	80%	120%	95%	80%	120%
Fluoride	8539235	8539235	<0.12	<0.12	NA	< 0.12	91%	80%	120%	NA	80%	120%	119%	80%	120%
Sulphate	8539235	8539235	<2	<2	NA	< 2	108%	80%	120%	NA	80%	120%	98%	80%	120%
Alkalinity	8539994		126	126	0.0%	< 5	89%	80%	120%	NA	80%	120%	NA	80%	120%
True Color	1	8539243	12	13	NA	< 5	80%	80%	120%						
Turbidity	1	8539243	1.1	1.3	16.7%	< 0.1	103%	80%	120%						
Electrical Conductivity	8539994		289	288	0.4%	< 1	100%	80%	120%	NA	80%	120%	NA	80%	120%
Nitrate as N	8539235	8539235	0.07	<0.05	NA	< 0.05	93%	80%	120%	NA	80%	120%	86%	80%	120%
Nitrite as N	8539235	8539235	<0.05	<0.05	NA	< 0.05	97%	80%	120%	NA	80%	120%	99%	80%	120%
Ammonia as N	1	8537124	<0.03	<0.03	NA	< 0.03	109%	80%	120%		80%	120%	106%	80%	120%
Total Organic Carbon	1	8529409	5.3	5.3	0.0%	< 0.5	105%	80%	120%		80%	120%	98%	80%	120%
Ortho-Phosphate as P	1	8537124	<0.01	<0.01	NA	< 0.01	102%	80%	120%		80%	120%	99%	80%	120%
Total Sodium	8540966		65.3	72.0	9.8%	< 0.1	107%	80%	120%	105%	80%	120%	NA	70%	130%
Total Potassium	8540966		<0.1	<0.1	NA	< 0.1	104%	80%	120%	101%	80%	120%	91%	70%	130%
Total Calcium	8540966		0.2	<0.1	NA	< 0.1	98%	80%	120%	96%	80%	120%	83%	70%	130%
Total Magnesium	8540966		<0.1	<0.1	NA	< 0.1	104%	80%	120%	103%	80%	120%	99%	80%	120%
Bicarb. Alkalinity (as CaCO3)	8539994		126	126	0.0%	< 5	NA	80%	120%	NA	80%	120%	NA	80%	120%
Carb. Alkalinity (as CaCO3)	8539994		<10	<10	NA	< 10	NA	80%	120%	NA	80%	120%	NA	80%	120%
Hydroxide	8539994		<5	<5	NA	< 5	NA	80%	120%	NA	80%	120%	NA	80%	120%
Total Aluminum	8540966		<5	<5	NA	< 5	103%	80%	120%	103%	80%	120%	93%	70%	130%
Total Antimony	8540966		<2	<2	NA	< 2	93%	80%	120%	86%	80%	120%	90%	70%	130%
Total Arsenic	8540966		<2	<2	NA	< 2	98%	80%	120%	94%	80%	120%	97%	70%	130%
Total Barium	8540966		<5	<5	NA	< 5	96%	80%	120%	93%	80%	120%	95%	70%	130%
Total Beryllium	8540966		<2	<2	NA	< 2	106%	80%	120%	103%	80%	120%	106%	70%	130%
Total Bismuth	8540966		<2	<2	NA	< 2	101%	80%	120%	103%	80%	120%	102%	70%	130%
Total Boron	8540966		16	16	NA	< 5	101%	80%	120%	95%	80%	120%	115%	70%	130%
Total Cadmium	8540966		<0.017	<0.017	NA	< 0.017	97%	80%	120%	96%	80%	120%	95%	70%	130%
Total Chromium	8540966		<1	<1	NA	< 1	101%	80%	120%	97%	80%	120%	107%	70%	130%
Total Cobalt	8540966		<1	<1	NA	< 1	100%	80%	120%	97%	80%	120%	113%	70%	130%
Total Copper	8540966		13	12	10.0%	< 1	99%	80%	120%	98%	80%	120%	NA	70%	130%
Total Iron	8540966		57	56	NA	< 50	96%	80%	120%	93%	80%	120%	110%	70%	130%
Total Lead	8540966		1.0	<0.5	NA	< 0.5	107%	80%	120%	102%	80%	120%	100%	70%	130%
Total Manganese	8540966		2	<2	NA	< 2	95%	80%	120%	94%	80%	120%	102%	70%	130%
Total Molybdenum	8540966		<2	<2	NA	< 2	93%	80%	120%	91%	80%	120%	104%	70%	130%
Total Nickel	8540966		<2	<2	NA	< 2	102%	80%	120%	96%	80%	120%	110%	70%	130%
Total Phosphorous	8540966		<0.02	<0.02	NA	< 0.02	117%	80%	120%	105%	80%	120%	99%	70%	130%
Total Selenium	8540966		<1	<1	NA	< 1	102%	80%	120%	94%	80%	120%	83%	70%	130%

AGAT Laboratories

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Quality Assurance

CLIENT NAME: GEMTEC LIMITED

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date: Jul 18, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Total Silver	8540966		<0.1	<0.1	NA	< 0.1	90%	80%	120%	95%	80%	120%	103%	70%	130%
Total Strontium	8540966		<5	<5	NA	< 5	92%	80%	120%	89%	80%	120%	100%	70%	130%
Total Thallium	8540966		<0.1	<0.1	NA	< 0.1	105%	80%	120%	105%	80%	120%	110%	70%	130%
Total Tin	8540966		<2	<2	NA	< 2	97%	80%	120%	95%	80%	120%	96%	70%	130%
Total Titanium	8540966		<2	<2	NA	< 2	104%	80%	120%	102%	80%	120%	92%	70%	130%
Total Uranium	8540966		<0.1	<0.1	NA	< 0.1	99%	80%	120%	98%	80%	120%	111%	70%	130%
Total Vanadium	8540966		<2	<2	NA	< 2	95%	80%	120%	93%	80%	120%	110%	70%	130%
Total Zinc	8540966		22	22	NA	< 5	101%	80%	120%	97%	80%	120%	105%	70%	130%

Comments: If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: GEMTEC LIMITED

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Total Mercury	MET-121-6100 & MET-121-6107	SM 3112 B	CV/AA
pH	INOR-121-6001	SM 4500 H+B	PC TITRATE
Reactive Silica as SiO2	INORG-121-6028	SM 4110 B	COLORIMETER
Chloride	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Fluoride	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Alkalinity	INORG-121-6001	SM 2320 B	
True Color	INORG-121-6014	EPA 110.2	NEPHELOMETER
Turbidity	INORG-121-6022	SM 2130 B	NEPHELOMETER
Electrical Conductivity	INOR-121-6001	SM 2510 B	PC TITRATE
Nitrate + Nitrite as N	INORG-121-6005	SM 4110 B	CALCULATION
Nitrate as N	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INORG-121-6005	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INORG-121-6003	SM 4500-NH3 G	COLORIMETER
Total Organic Carbon	INORG-121-6026	SM 5310 B	TOC ANALYZER
Ortho-Phosphate as P	INORG-121-6005	SM 4110 B	COLORIMETER
Total Sodium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Potassium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Calcium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Magnesium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Bicarb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC TITRATE
Carb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC TITRATE
Hydroxide	INORG-121-6001	SM 2320 B	PC-TITRATE
Calculated TDS	CALCULATION	SM 1030E	CALCULATION
Hardness	CALCULATION	SM 2340B	CALCULATION
Langelier Index (@20C)	CALCULATION	CALCULATION	CALCULATION
Langelier Index (@ 4C)	CALCULATION	CALCULATION	CALCULATION
Saturation pH (@ 20C)	CALCULATION	CALCULATION	CALCULATION
Saturation pH (@ 4C)	CALCULATION	CALCULATION	CALCULATION
Anion Sum	CALCULATION	SM 1030E	CALCULATION
Cation sum	CALCULATION	SM 1030E	CALCULATION
% Difference/ Ion Balance (NS)	CALCULATION	SM 1030E	CALCULATION
Total Aluminum	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Antimony	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Arsenic	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Barium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Beryllium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Bismuth	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Boron	MET121-6104 & MET-121-6105	SM 3125	ICP-MS

AGAT Laboratories

11 Morris Drive, Unit 122
Dartmouth, Nova Scotia
CANADA B3B 1M2
TEL (902)468-8718
FAX (902)468-8924
http://www.agatlabs.com

Method Summary

CLIENT NAME: GEMTEC LIMITED

AGAT WORK ORDER: 17X235130

PROJECT: 80016.09

ATTENTION TO: Darrol Rice

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Cadmium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Chromium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Cobalt	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Copper	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Iron	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Lead	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Manganese	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Molybdenum	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Nickel	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Phosphorous	MET-121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Selenium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Silver	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Strontium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Thallium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Tin	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Titanium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Uranium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Vanadium	MET121-6104 & MET-121-6105	SM 3125	ICP-MS
Total Zinc	MET121-6104 & MET-121-6105	SM 3125	ICP-MS

AGAT Laboratories

Unit 122 • 11 Morris Drive
Dartmouth, NS
B3B 1M2

webearth.agatlabs.com • www.agatlabscom

P: 902.468.8718 • F: 902.468.8924

Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☐ Good ☐ Poor (see notes)
Arrival Temperature: 7.8
Hold Time:
AGAT Job Number: 17T235130

Notes:

Report Information

Company: Gemtec
Contact: Darrol Rice
Address: 10 Maverick Place
Paradise, NL
Phone: 722-2275 Fax:
Client Project #: 80016.09
AGAT Quotation:
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Darrol Rice
   Email: darrol.rice@gemtec.ca
2. Name:
   Email:

Report Format

☐ Single Sample per page
☐ Multiple Samples per page
☐ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☑ 5 to 7 working days

Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days

Date Required:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☑ Do not list Guidelines on Report

☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube

☐ CCME
☐ Industrial
☐ Commercial
☐ Res/Park
☐ Agricultural
☑ FWAL
☐ Sediment

☐ CDWQ
☐ NSESQ-Cont. Sites
☐ HRM 101
☐ Storm Water
☐ Waste Water
☐ Other

Drinking Water Sample: ☐ Yes ☑ No
Reg. No.:

Invoice To Same Yes ☑ / No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/Credit Card#:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment
SW-1	July 7, 2017	SW	3	
SW-2	↓	↓	↓	
SW-3				
SW-4				
SW-4A				

Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	pH	☐ TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☑ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other:	Other:	Hazardous (Y/N)
	X	X	X																			

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time
Darrol Rice	July 10/17	Justin	July 10/17
Samples Relinquished By (Sign):	Date/Time	Samples Received By (Sign):	Date/Time
Darrol Rice	July 10/17		10:25 am

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page ☐ of ☐

N°: 053113

GEMTEC
Consulting Engineers and Scientists

GEMTEC Limited
10 Maverick Place
Paradise, NL
A1L 0J1

tel: 877.243.6832
nl@gemtec.ca
www.gemtec.ca

August 3, 2018 File: 80016.09

Anaconda Mining Inc.
238 Highway 410
Baie Verte, NL
A0K 1B0

Attention: Jordan Cramm
Mine and Engineering Superintendent

Re: Additional Plant Survey Relative to Requirements of an Environmental Preview Report, Argyle Project, Baie Verte Peninsula, NL

1.0 Background

Anaconda Mining Inc. (Anaconda) is proposing to develop a new gold mine on their Argyle Property (the Project) located near Ming's Bight, Newfoundland and Labrador (Figure 1). The Project is located approximately 10 kilometres (km) southwest of the community of Ming's Bight and approximately 10 km by road from their existing Pine Cove Mine and Mill operation.

GEMTEC Consulting Engineers and Scientists (GEMTEC) was retained by Anaconda to complete Preliminary Baseline Ecological Studies at this property to support an Environmental Registration. The initial field based investigations were carried out during the summer 2017 and all findings and conclusions were provided in GEMTEC's report entitled, *Preliminary Baseline Studies, Anaconda Mining Inc.'s, Argyle Property,* dated June 30, 2018.

Anaconda submitted a Registration document to the Environmental Assessment Division (EAD) of the Newfoundland and Labrador (NL) Department of Municipal Affairs and Environment (DMAE) as part of the approval process to proceed with project development. GEMTEC's Preliminary Baseline Study Report was included in the Registration document for environmental assessment (EA) review and underwent review by various government departments and agencies during the EA review process. Based on the findings of the Preliminary Baseline Study Report, the Wildlife Division (WD) requested that additional surveys for common wintergreen (*Chimaphila umbellate)* be carried out as this species, found within the proposed project development area, is currently ranked as S2.

Anaconda retained GEMTEC to carry out the requested field studies as identified by the WD during the initial EA review of the Argyle Project.

The objective of this field work was to obtain additional information on the population and distribution of previously identified common wintergreen plants in the vicinity of the proposed project area. This information will assist the Minister of the DMAE in determining whether the proposed Project could have significant adverse environmental effects.

2.0 Scope of Work and Methodology

Between July 21-23, 2018, Mr. Derrick Mitchell, a biologist with Boreal Environmental, and Darrol Rice of GEMTEC, surveyed the area surrounding the proposed Argyle mining site for common wintergreen *(Chimaphila umbellata)* in accordance with the recommendations made by the WD. Sampling points for common wintergreen were required to be at least 500 m from the boundary of the proposed Project area and spaced a minimum of 500 m apart.

3.0 Results

Previous surveys conducted during summer 2017 indicated that common wintergreen was abundant throughout the proposed Project area (Figure 2). It was noted during the 2017 fieldwork that common wintergreen was most abundantly located in upper slope positions where there were small, natural or manmade, openings in the forest canopy. It appears, therefore, that low intensity disturbance, where forest soils are not heavily disturbed, seems to encourage the germination and development of common wintergreen. In this area, low intensity disturbance occurs primarily in areas of domestic firewood harvesting. Firewood harvesting occurs primarily during the winter when the ground is frozen, so there is little disturbance to the organic soil horizon, i.e., the duff layer, or to the common wintergreen seed bank.

Based on the 2017 observations relative to habitat preference, the 2018 sites were selected based on ease of access and the site characteristics, i.e., suitable habitat. When the 500 m Project boundary separation requirement was met, it generally did not take more than a few minutes of searching to locate significant patches, i.e., patches containing more than 100 plants, of common wintergreen (Figure 2). In addition, significant patches were noted while traversing the site to meet the 500 m separation boundary requirement. These frequent occurrences demonstrate that the common wintergreen plant is very common throughout the area.

In all, 21 patches of common wintergreen were located with nine (9) individual patches or aggregated patches meeting the 500 m boundary separation requirement (Table 1). Approximately 4,100 plants were found within these 21 patches and the patch size ranged from 1-100 m^2. Patch size was highly dependent on the size of the forest opening or the amount of sunlight penetrating the tree canopy.

4.0 Conclusions

The 2018 fieldwork indicates that common wintergreen is as abundant in the areas surveyed outside the Project footprint as it is within the Project footprint. Field surveys targeted areas with

suitable habitat in proximity to the proposed Project area, i.e., >500 m, and extended for approximately 1,200 m from the proposed Project boundary. Within the patches located, topographic position and penetration of sunlight to the forest floor appear to be factors determining the presence and abundance of common wintergreen. The landscape surrounding the Project footprint is similar, both topographically and vegetatively, thus creating an abundance of suitable habitat for common wintergreen to flourish.

5.0 Closure

This report has been prepared for the sole benefit of our client, Anaconda. The report may not be relied upon by any other person or entity without the express written consent of GEMTEC and our client, Anaconda.

Any use that a third party makes of this report, or any reliance or decisions made based on it, is the responsibility of such third parties. GEMTEC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The information presented within this report represents the best judgment of the trained professional and technical staff based on current standards, site and project information known at the time and project area conditions observed by staff at the time the work was performed.

Should additional information become available, GEMTEC requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

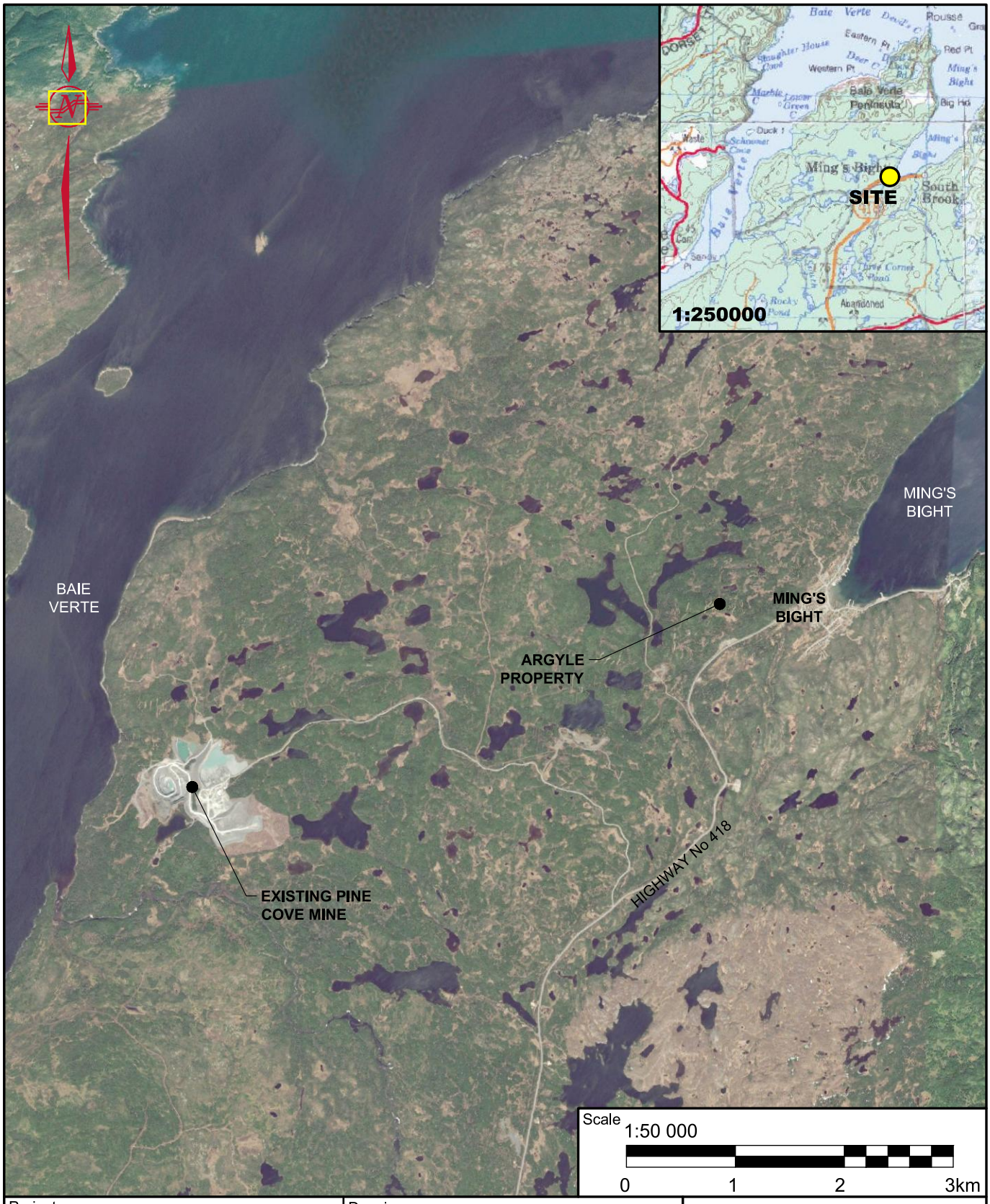
Please do not hesitate to contact the undersigned at your convenience if you have any questions.

Sincerely,

Darrol Rice, B.Tech. Env., P.Tech., EP, PMP
Senior Project Manager
GEMTEC Consulting Engineers and Scientists

Attachments:

Figures 1 and 2
Table 1
Photos

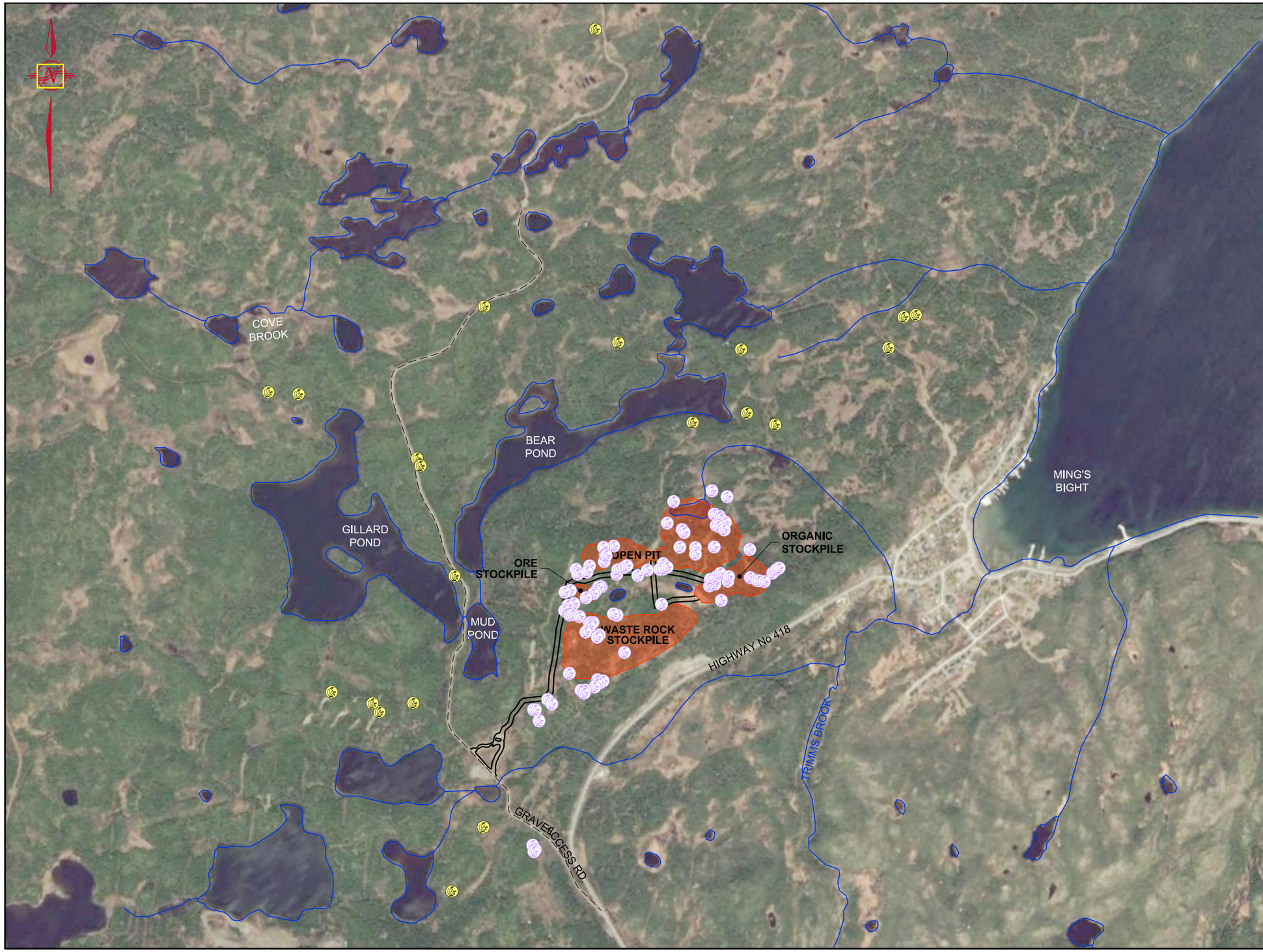


Project	Drawing
ARGYLE BASELINE STUDIES	SITE LOCATION PLAN

Drawn By	Date	File No.	Drawing No.	Revision No.
CHG	JULY 2018	800160902	FIGURE 1	0

GEMTEC
CONSULTING ENGINEERS AND SCIENTISTS

N:\DRAWINGS\80000\80016.09\800160902.DWG



Legend

- CHIMAPHYLLA UMBELLATA 2017 (COMMON WINTERGREEN)
- CHIMAPHYLLA UMBELLATA 2018 (COMMON WINTERGREEN)
- WATERCOURSE
- PROPOSED ROAD
- PROPOSED MINE DEVELOPMENT AREA

Note

1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL PHOTOGRAPH FROM 2015. SOURCE GOOGLE EARTH.

Drawn By	Checked By
CHG	DR
Calculations By	**Checked By**
---	----

Date: JULY 2018

Project: ARGYLE BASELINE STUDIES

Drawing: RARE FLORA LOCATIONS

Scale: 1:12500

0 250 500 750m

File No.	Drawing	Revision No.
800160902	FIGURE 2	0

GEMTEC
CONSULTING ENGINEERS AND SCIENTISTS

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Table 1: Common Wintergreen Patch Locations, Estimated Population and Patch Size

Scientific Name	Common Name	No. Plants	Area (m^2)	Location*	
				x	y
Chimaphila umbellata	Common wintergreen	7	3	301341.24	5538346.34
Chimaphila umbellata	Common wintergreen	200	30	301430.77	5538451.41
Chimaphila umbellata	Common wintergreen	200	12	301391.30	5538445.54
Chimaphila umbellata	Common wintergreen	200	30	299440.17	5538223.01
Chimaphila umbellata	Common wintergreen	150	30	299342.78	5538230.89
Chimaphila umbellata	Common wintergreen	300	75	300471.24	5538375.52
Chimaphila umbellata	Common wintergreen	28	4	299795.63	5537223.75
Chimaphila umbellata	Common wintergreen	200	12	299664.66	5537224.48
Chimaphila umbellata	Common wintergreen	400	35	299686.70	5537196.42
Chimaphila umbellata	Common wintergreen	47	12	299829.35	5537987.32
Chimaphila umbellata	Common wintergreen	75	3	299818.59	5538011.15
Chimaphila umbellata	Common wintergreen	16	3	299934.35	5537631.40
Chimaphila umbellata	Common wintergreen	500	100	300016.40	5536821.18
Chimaphila umbellata	Common wintergreen	300	40	299912.13	5536616.32
Chimaphila umbellata	Common wintergreen	300	60	300040.70	5538497.11
Chimaphila umbellata	Common wintergreen	12	1	300411.16	5539384.20
Chimaphila umbellata	Common wintergreen	150	24	300707.39	5538114.62
Chimaphila umbellata	Common wintergreen	500	75	300882.53	5538142.74
Chimaphila umbellata	Common wintergreen	150	12	300866.57	5538348.14
Chimaphila umbellata	Common wintergreen	300	27	300973.18	5538104.27
Chimaphila umbellata	Common wintergreen	43	3	299533.62	5537262.61

Photo 1: Common wintergreen *(Chimaphila umbellata)* in flower

Photo 2: Common wintergreen *(Chimaphila umbellata)* habitat

Photo 3: Common wintergreen *(Chimaphila umbellata)* habitat

Photo 4: Common wintergreen *(Chimaphila umbellata)* habitat

BEST MANAGEMENT PLAN
ARGYLE GOLD PROJECT
ANACONDA MINING INC.

Table of Contents

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Revisions

Document Version	Developer	Date
1 - Original	G. Forrest	August 23, 2018

1. Executive Summary

Located near the Town of Ming's Bight, NL ('the Town'), Anaconda Mining Inc. ('Anaconda') intends on developing the Argyle Gold Project ('Project). This project will consist of the development and operation of an open pit mine, with the ore material being transported to the Pine Cove Mill via a network of access roads. The current schedule has open pit mining operations beginning in Q3 2019 (July-August-September 2019), and lasting approximately two years, with potential expansion as exploration activities and permitting continue. Refer to Appendix A for the proposed Site Plan for the Project.

Activities associated with Argyle will include drilling, blasting, loading and hauling of ore and waste rock material. All ore material will be transported to the Pine Cove Mill for processing and tailings storage. Due to the proximity of the operation and the Town, the generation of noise, dust, vibrations and blasting overpressure is of the utmost concern to Anaconda. Anaconda intends on continuing operations in the area and will work with the Town to ensure all concerns are addressed, and that all potential impacts to residents and the environment are minimized or eliminated.

Due to the proximity of nearby residential dwellings and structures, this Best Management Plan (BMP) was developed by Anaconda to act as a manual to address aspects of the operation relating to the management and monitoring of drilling and blasting activities, noise, fugitive dust, site reclamation after operations cease and contingency plans for Argyle. To support the monitoring aspect of these activities, a monitoring system will be implemented to measure dust, noise and vibration. Baseline measurements of these activities are currently being measured around the Town. Additionally, these aspects are being monitored at Stog'er Tight operations (approximately one kilometer from the Argyle open pits) to better understand the current outputs and measurements. This will allow Anaconda to adjust activities and have operations within threshold limits for Argyle. This BMP is intended to be a working document which may undergo periodic revisions in order to address changes in the operation and planning, while maintaining the

objectives of the document are consistently achieved. Revised documents will be made available to the public and all interested parties.

2. Purpose and Scope

Anaconda developed this BMP in order to identify preventative or mitigative measures to minimize potential impacts of the operation to residents and land users, as well as nearby dwellings and structures. The following sections of this BMP provide descriptions of the operation and strategies to be utilized to eliminate, mitigate and monitor noise, fugitive dust emissions, ground vibrations, fly-rock mitigations and contingency plans to address potential unforeseen events. All of these aspects are considered to be the primary potential issues of concern for the Town and residents of the Town.

The Argyle Project is divided into several phases:

- Construction – site clearing, tree cutting, initial blasting, road development, partial construction of the Environmental Control Berm (ECB - protective berm/barrier between the Project and the Town to reduce noise, dust, and vibrations felt in the Town);
- Operations – open pit mining, blasting, ore haulage to Pine Cove, progressive rehabilitation; and
- Closure – final site reclamation (abiding by an approved 'Rehabilitation and Closure Plan' by Department of Natural Resources).

The primary impacts to local residents, structures, and the environment (including the Town's Protected Public Water Supply Area ('PPWSA')) that originate from blasting and general site operations are considered to be:

- Vibrations (ground vibration) and Overpressure (airblast);
- Noise;
- Fly-rock; and
- Dust Emissions (generally referred to as fugitive dust).

3. Blasting and Vibration

3.1 Open Pit Blasting

The open pit will be sequenced and developed using a conventional bench design, ensuring pit wall stability while facilitating open pit access. Blasting will be carried out using conventional mining explosive agents. Emulsion explosives will be pumped into drill holes to ensure safe and controlled blasting operations. Packaged product will be utilized during pre-shear blasting activities, which is undertaken to develop a clean final wall of the open pit for safety precautions.

Proposed blasting times will be from 10:00 to 11:00 and/or 15:30 to 16:30 during the months of March to October, and 10:00 to 11:00 and/or 14:30 to 15:30 during the months of November to April. Activating a blast will only be carried out in accordance with applicable legislative requirements, only when all appropriate safety measures are in place, and when weather conditions are suitable. As experience is gained with initial blasting at Argyle, blasting times may be modified.

During initial blasting, smaller blasts will be carried out with resulting vibration, overpressure levels, fly-rock and fugitive dust will be monitored in order to determine safe blast design parameters going forward. The burden and explosive charge spacing will be calculated using the blast hole diameter to determine the appropriate blast pattern for efficient fracturing while minimizing the potential for excessive overpressure and vibration. Anticipated vibration levels will be pre-calculated to ensure that blasts do not generate ground vibrations or overpressure above the threshold limits. Anaconda will implement mitigation measures to ensure vibrations and noise levels are minimized. Analyses and data logging is currently being carried out at Anaconda's Stog'er Tight operations to gain perspective on the effect various blasting parameters have on noise and vibrations at various distance from the blast. This information will be used to plan for the Project, in an effort to ensure blasting activities are below threshold limits at the beginning of construction and development and throughout the life of the Project.

3.2 Safety Precautions

3.2.1 Blasting Notification Procedures

3.2.2.1 Mine Site Personnel

Blast notifications will be distributed electronically to Anaconda and contractor personnel, as well as any appropriate external contacts (including those residents who wish to receive notifications) at various intervals including a 24-Hour Notice and a 3-Hour Notice. Information about the blast will also be displayed on Notice Boards around the Argyle site, on the Anaconda website, and on an electronic Public Blast Notification Board that will be stationed near the Town Hall in Ming's Bight.

Blast notifications will contain information including, but not limited to, the following:

- Date and Time of the proposed blast;
- Title of the blast;
- Name of the blaster;
- Road closures; and
- Mine Superintendent and Site Supervisor contact information.

A blasting checklist will be filled in by the Mine Superintendent, Site Supervisor, or an assigned designate prior to all blasting activities. This checklist will include pre-blast checks and weather/climatic information.

3.2.2.2 General Public

Anaconda will make every possible effort to ensure that the general public is given advance notice of blasting activities at Argyle. A list of contacts wishing to be notified electronically (email) will be established, with an active sign-up sheet posted at the Town Hall and in the Town store. Residents wishing to receive blast notifications will also be able to register on the Anaconda website. The electronic Public Blast Notification Board will be updated as required, as well, to provide the most up to date information.

3.2.2 Pre-Blast Warning Procedures

As per mining regulations, pre-blast sirens will be utilized to warn the general public of blasting activities. The siren will be audible in the vicinity of the open pit, the Argyle site, and within the Town to warn employees and the general public that blasting activities are in progress. The warning sirens will be activated prior to any blasts as follows:

- Warning #1 – 15-minute blast warning prior to any blast. This warning will last for 15 seconds;
- Warning #2 – 2-minute blast warning prior to any blast. This warning will last for 30 seconds. If for any reason the blast is not initialized within 5 minutes of Warning #2, the blast will be aborted. If the blast is aborted, for any reason, the Pre-Blast Warning Procedures will restart.

3.2.3 Blast Guard Personnel

Blast guard personnel will be stationed at necessary locations around the Argyle site and the Town, if required, when blasting activities are ongoing. The following procedures will be followed:

- Prior to the Warning #1, blast guard personnel will be at their required stations a safe distance from the blasting location. These stations are shown in Figure 1, at either end of Route 418 along the 500 m blast radius (Numbered Station 3 and Station 5). The safe distance from the blast is shown in Figure 1 as a red circle, and is referred to as the Blast Radius;
- Guard personnel will be positioned outside of their vehicles and will be equipped with a two-way radio and a red STOP sign. The Pit Superintendent or Site Supervisor will be notified when each guard personnel are in their respective designated location;
- Guard personnel will restrict all access beyond their stationed position unless permission has been granted by the Pit Superintendent, Site Supervisor, Blasting Contractor, or an assigned designate (i.e. in the case of an emergency);

- Under no circumstance is a guard personnel permitted to leave their designated position; and
- Following the blast, guard personnel will remain at their station until notice is provided by the Pit Superintendent, Site Supervisor, Blasting Contractor, or an assigned designate, at which time they may grant access beyond their station and leave their post.

3.3 Ground Vibration

Ground vibrations are associated with different types of elastic waves propagating through the ground. The intensity of ground vibration is an elastic effect measured in units of peak particle velocity which is defined as the speed of excitation of particles within the ground. The detonation of an explosive to break down rock will produce a very rapid and drastic increase in volume due to the conversion of the explosive from a solid to a gaseous state. For the purpose of the BMP, peak particle velocity is measured in millimetres per second (mm/s). (Goldcorp, 2012)

The intensity of ground vibration from open pit blasting is site-specific, and is dependent on the areas geological conditions, ground relief, distance from the blast, blasting design and techniques, and the quantity of explosives used. Anaconda will incorporate appropriate designs and techniques to ensure ground vibrations are minimized during blasting activities to within acceptable threshold limits.

3.3.1 Pre-Blast Surveys

Anaconda may retain a professional blasting consultant to conduct a pre-blast survey to identify pre-existing conditions affecting particular infrastructure, dwellings, and buildings in the vicinity of the Argyle site. Where inspections are conducted, any pre-existing structural or cosmetic irregularities will be recorded and discussed with the property owners in order to differentiate between pre-blasting conditions and subsequent effects that may be caused by nearby blasting activities.

It is anticipated that any building, dwelling, or infrastructure within 50 m of the 500 m blast radius will be recommended for a Pre-Blast Survey inspection. This will be further delineated prior to the beginning of construction and operations.

3.3.2 Ground Vibration Monitoring

Ground vibration monitoring instrumentation will be included as part of the monitoring system throughout construction and operations of the Argyle project. Proposed monitoring locations are shown in Figure 1.

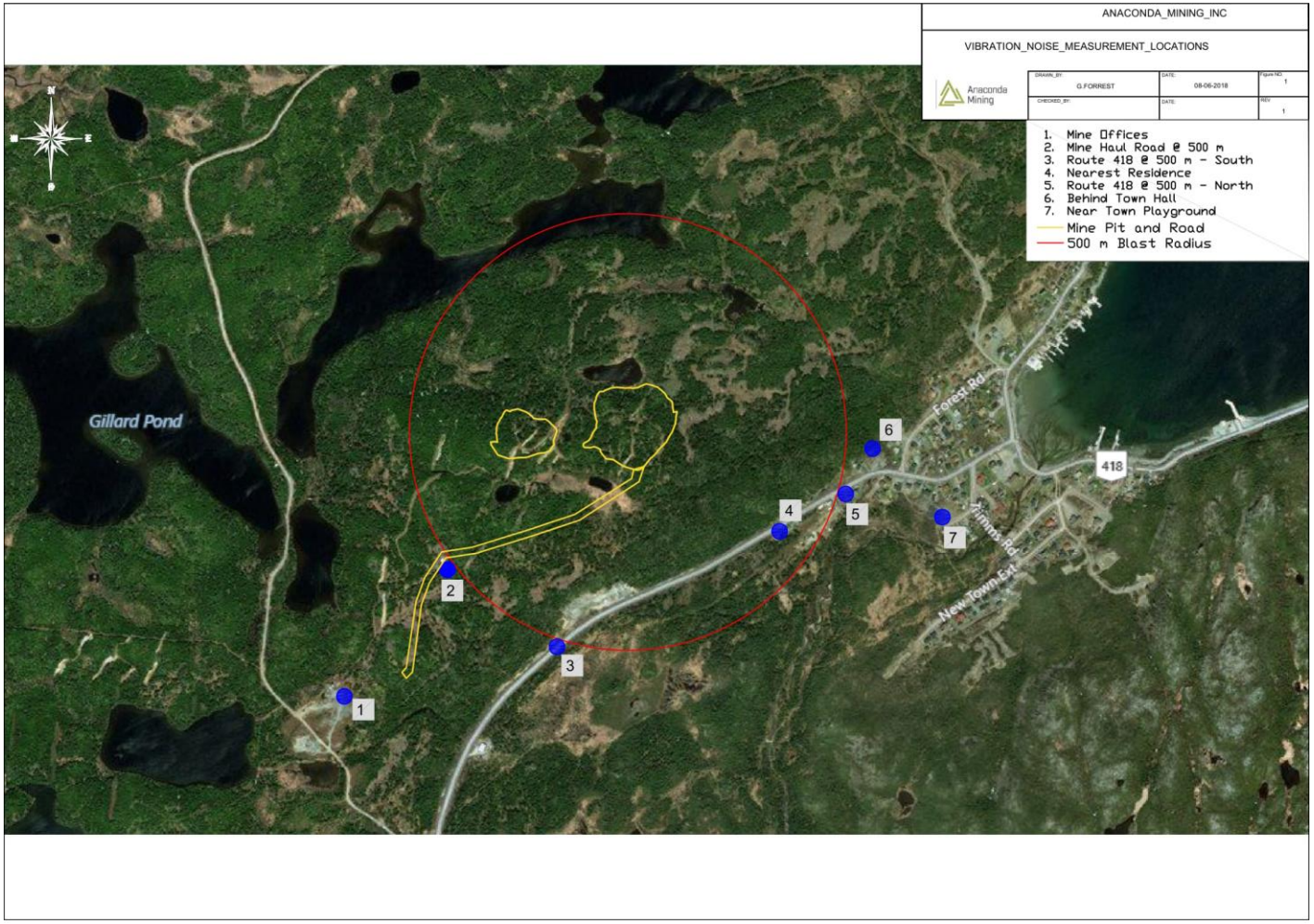


Figure 1 – Measurement/Monitoring Locations for Noise, Airblast, and Ground Vibrations

There will be designated ground vibration monitoring sites that will be used to measure vibrations and air blast for every blast, as well as being used for gathering data on other construction and operational activities. Reports summarizing the data will be made available to the public upon request. Data reports will be generated on a weekly and monthly basis. Anaconda will also have the option of monitoring various locations other than the designated stations with additional seismographs.

The proposed threshold limit for ground vibrations was determined through consultation with the blasting contractor and referencing the limits used at Goldcorp's Hollinger Pit (which utilizes a limit of 12.5 mm/s). The criterion is listed in Table 1 and will be utilized throughout construction and operations at Argyle. Refer to Appendix B for the maximum allowable peak particle velocity (ppv) for structures and infrastructure. Monitoring of the ground vibrations will be carried out to enable Anaconda to react to and mitigate ground vibrations, as required, to remain below the threshold limit. If a measurement exceeds the threshold limit at any time, the particular activity causing the ground vibrations will be evaluated to determine appropriate mitigation measures. For blasting, the blast design will be assessed and adjusted to prevent reoccurrence. Adjustments may include, but are not limited to, the size of the blast, hole diameter, spacing, timing of the blast, bench height, burden, and the explosive quantities.

Table 1 - Proposed Threshold Limit for Ground Vibrations

Parameter	Upper Limit Peak Particle Velocity [mm/s]
Maximum Ground vibration at 500 m, or at any building, dwelling, or infrastructure within 500 m of the blast	12.5

3.4 Airblast Overpressure

Airblast overpressure consists of sound waves which are inaudible to the human ear. The magnitude of airblast overpressure is influenced by a number of factors, including the following:

- Stemming – including premature ejection of the stemming material from the blast holes, or insufficient stemming, resulting in excessive loss of explosive gases and energy;
- Face bursting – explosive releases of energy within the rock mass;
- Climatic conditions – including wind direction, cloud cover, ceiling elevation, etc.; and
- Pre-Shear Blasting – technique used to create a clean, safe wall and bench profile along the outer, final wall of the open pit.

During blasting, sound monitoring of the inaudible spectrum frequency will be carried out in the Town along with the ground vibration monitoring instruments. The proposed monitoring locations are shown in Figure 1. Anaconda will also have the ability to monitor additional areas.

The proposed threshold limit for monitoring the magnitude of airblast overpressure from blasting activities is listed in Table 2. Refer to Appendix A for Human and Structural Response to various airblast levels. The limit was determined by referencing the BMP used for Goldcorp's Hollinger Pit. This threshold limit will be in effect throughout construction and operations activities. If the threshold limit is reached at any time, the blast causing the airblast overpressure will be evaluated to determine appropriate mitigation measures. Adjustments may include, but are not limited to, the size of the blast, hole diameter, spacing, timing of the blast, bench height, burden, explosive quantities and the usage of blast mats.

Table 2 - Proposed Threshold Limit for Airblast Overpressure

Parameter	Upper Limit [dB]
Sound (Airblast Overpressure) at 500 m, or at any building, dwelling, or infrastructure within 500 m of the blast	128

3.5 Vibration Mitigation

Mitigation measures which will be implemented to minimize ground vibration and airblast overpressure generated by blasting activities at Argyle are discussed in Table 3.

Table 3 - Vibration Mitigation Parameters and Measures

Parameter	Description and Mitigation
Blast Hole Diameter	Hole diameter will have a direct impact on the quantity of explosives used. Hole diameter will range from 3.5" to 4" holes. Smaller holes will result in less explosives, less noise, ground vibrations, and airblast overpressure.
Spacing Design	Spacing of the blast holes will have a similar impact on the noise, ground vibrations, and airblast overpressure as the blast hole diameter. The spacing will be adjusted, as required, to remain below the threshold limits for each parameter.
Stemming Design	Stemming is a process involving filling a blast hole with a clean aggregate above the explosive agent to contain explosive gases and energy. Proper stemming will reduce airblast overpressure and flyrock generated from blasts. Stemming quantity will be adjusted, if required, to remain below the threshold limits for each parameter.
Weather Monitoring	When feasible, blasting activities will only occur under favorable weather conditions. Mine planning will be undertaken with weather conditions in mind to limit any risks associated with blasting. Airblast overpressure, noise, and ground vibration data will be correlated with the weather parameters for each blast for future reference. Weather parameters include cloud ceiling height, storm activity, humidity, temperature, wind speed, and wind direction.
Environmental Control Berm	The Environmental Control Berm (ECB) will be a berm constructed of waste rock between the Argyle site and the Town. The berm will be constructed around the perimeter of the site, with the intention of deflecting noise, airblast overpressure, and preventing fugitive dust from leaving the site. The berm will be constructed in stages and will advance as mining operations continue to supply waste material for construction. The ECB will be included within the progressive rehabilitation program.

3.6 Feedback Procedure

Several methods of communication will be available for the public to provide feedback (See Section 7.1). If public feedback is received and/or ground vibrations or airblast overpressure threshold limits have been exceeded, the following steps will be taken:

- Mine Superintendent or Site Supervisor will confirm that threshold limits for ground vibrations and/or airblast overpressure were exceeded;
- If the feedback is blasting related, the Mine Superintendent or Site Supervisor will investigate the incident as soon as possible and identify the likely source or cause of exceedance. The event will be recorded, and engineering/technical services will be notified for follow-up action to prevent reoccurrence;
- The Mine Superintendent or Site Supervisor will ensure appropriate actions are taken to reduce the ground vibrations and/or airblast overpressure to prevent reoccurrence;
- Documentation will be completed to identify the source and describe the event, along with mitigation measures. This document will be filed as an internal Incident Report/Investigation; and
- Written feedback will be given to the complainant(s) regarding the incident/event and mitigation measures implemented within two (2) business days.

3.7 Reporting

A summary of the ground vibration and airblast overpressure monitoring program will be compiled and made publicly available on a weekly and monthly basis.

4. Noise

Noise sources from both construction and operational phases of the Argyle project are primarily associated with drilling, blasting and trucking (material haulage). It is anticipated that heavy equipment will be the primary source of noise. Blasting is likely to create the highest measured levels of noise but is for very short periods of time. Anaconda will implement several measures to mitigate and minimize the noise generate from the project that is audible in the Town and likely to cause disruptions. This includes, but is not limited to, the following:

- Development of the Environmental Control Berm;
- Monitoring noise levels within the Argyle site boundaries, as well as within the Town;
- Monitoring activities that generate consistent noise approaching the threshold limits;
- Identifying potential issues prior to reaching the threshold limits and implementing mitigation measures;
- Operating only between the hours of 6:30 and 19:00; and
- Documenting all activities and noise generation levels, as well as mitigation methods utilized to reduce the noise and the associated impacts for records.

The primary mitigation method for noise minimization will be the Environmental Control Berm (ECB). This berm will be constructed of waste rock and is intended to absorb/deflect noise generated on-site and prevent it from leaving the Argyle site or being directed towards the Town. The ECB will be progressively constructed from north to south as waste rock is removed from the open pits, as it will be constructed primarily of waste rock. See Appendix A for the location of the ECB, and Appendix C for cross sections of the proposed berm.

Baseline noise monitoring is currently being carried out to determine ambient noise levels both at Argyle and within the Town at various locations. Additional monitoring will take place prior to both construction activities and operational activities commencing. The following sections outline further mitigation methods to be implemented at Argyle.

4.1 Monitoring Program

4.1.1 Training

Appropriate training will be carried out to ensure that the noise monitoring program is efficiently and effectively conducted throughout construction and operational activities. Training will include, but is not limited to, the following:

- Training on the use of portable noise monitoring equipment for key on-site personnel;
- Recognition of when or how noise generation may become problematic;
- Identifying noise sources and implementing appropriate effective mitigation measures; and
- Properly documenting and reporting events related to noise, including the source identification, mitigation measures implemented, and the end results.

4.1.2 Monitoring Methods

Anaconda will have two (2) portable noise detectors available to record various construction or operational activities. Noise detectors will be sent for calibration as recommended by the manufacturer.

The portable noise detectors will be used to monitor various construction or operational activities at various distances to develop records and a database for future reference. The noise detector currently being used for testing is a PCE Model MSM 4.

4.1.3 Noise Criteria

Noise levels are typically measured in decibels (dB).

Table 4 displays average noise levels for common activities at the source (Goldcorp, 2012).

Table 4 - Average Noise Levels for Common Activities (at the source of noise generation)

Equipment/Activity	Noise Levels at source (dB)	Description
Refrigerator humming	40	Faint
Rainfall (moderate)	50	Moderate
Common Conversation	60	Moderate
Vacuum Cleaner	70	Loud
Busy Street	80	Loud
Motorcycle (8 m away)	88	Loud
Chainsaw	84	Loud
Jet Engine (close proximity)	140	Painful

Table 5 displays average noise levels for construction activities that will be undertaken at the Project.

Table 5 - Average Noise Levels for Construction Activities

Equipment/Activity	Noise Levels at Source – 15 m (dB)	Noise Levels in the Town - 500 m (dB)
Mining (Excavation, dozers, loaders)	85	54.5
Pneumatic breakers, rock busters	85	54.5
Tracked Drills	100	69.5

It is anticipated that the drills and heavy equipment used for mining will generate the principal sources of noise at the Project. Blasting will also act as a noise source but occurs over a much shorter period of time. Drills will only generate 69.5 dB when utilizing the hammer on the drill, which is not consistent over the period of an hour.

Table 6 displays the proposed average noise level objectives for the Argyle Project at 500 m, with thresholds listed as an average noise level over a one-hour period. These values are threshold limits proposed for the nearest residential dwelling in the Town. It is important to note that the reference used for these values comes from the Hollinger Open Pit BMP as there are no established threshold limits for the Town. These values come from the Ontario Ministry of Environment and are enforced for Goldcorp's Hollinger Pit that is 117 m from the nearest residential dwelling.

Table 6 - Proposed Noise Level Objective for the Argyle Project

Time of Day	Average Noise Values (dB) at 500 m
06:30-19:00	65
19:00-06:30	No Activities to be Scheduled

4.1.4 Inspections and Maintenance

Weekly inspections of the noise monitoring equipment will be carried out by Anaconda to ensure accurate data readings and that the equipment is operating according to manufacturers specifications. Noise monitoring data will be stored at the site and will be distributed upon request. The data will also be made available to the public.

Maintenance of the equipment will be the responsibility of Anaconda. Calibration of the equipment will be carried out by a certified third party, or the manufacturer. Records of calibration will be kept on site.

4.2 Noise Mitigation

4.2.1 Triggers for Noise Mitigation

Noise mitigation measures will be implemented if noise levels detected at the nearest residential dwelling reach or exceed the objective threshold limits outlined in Table 6.

The following measures will be carried out to mitigate noise levels when a mitigation trigger is activated:

- Supervisor will review the data to ensure that the objective threshold limit was reached;
- Supervisor will investigate and identify the source within three (3) hours;
- Supervisor will take the required appropriate action to reduce noise;
- Supervisor will confirm that the noise levels have been reduced using the noise detection equipment; and
- Documentation with the data, investigation, mitigation measures, and results will be compiled and reviewed with the required personnel.

4.2.2 Noise Mitigation Measures

The following are mitigation measures to be implemented if the objective noise level threshold is reached or exceeded. It is the responsibility of the Mine Superintendent or Site Supervisor to ensure that the mitigation measures are implemented in a timely manner and that the measures have a sufficient impact on the noise levels. The measures are as follows:

- Restrict idling of equipment to the minimum on site;
- Operate in daytime hours only (06:30-19:00);
- Operate equipment in a manner to reduce noise as much as possible;
- When constructing the ECB, routes will be established to utilize the existing construction of the ECB as much as possible, as the ECB will act as a noise deflection barrier;
- Minimize, where possible, the noise created by dumping rock loads by utilizing topography, dumping slowly, or by using temporary sound barriers;
- Strict enforcement of 30 km/h speed limits on site;
- Relocate activities until sufficient measures will allow work to continue at lower noise levels in a particular area;
- Utilize equipment in proper working order; and
- Stress the importance of limiting noise generation to all site personnel.

Blasting activities, as previously mentioned, will be a source of noise over short periods of time. It is anticipated that the completion of the ECB will aid in noise reduction within the Town as it will act as a noise deflection barrier. Blasting designs and plans will be adjusted, as required, to reduce noise similar to that in which they will be adjusted for mitigation of airblast.

4.3 Feedback Procedure

If feedback regarding noise levels is received from the public, or monitoring indicates that the objective thresholds have been reached or exceeded, the following steps will be taken:

- Supervisor will review the data to determine if the noise levels did exceed the threshold limits;
- Supervisor will, within three (3) hours, investigate and determine the source of the noise event;
- Supervisor will provide notification of the event and appropriate follow up actions to prevent a re-occurrence;
- If the source cannot be identified, someone will be designated to investigate the event further and document all findings;
- The Supervisor will take all appropriate actions to reduce the noise within acceptable levels and ensure any mitigation measures are successful in lowering noise levels;
- Documentation will be compiled including the complaint/feedback, investigation of the source, mitigation measures implemented, and corresponding results. This information will be reviewed by the Supervisor and/or Mine Superintendent; and
- Written feedback will be provided within two (2) business days to the complainant regarding mitigation measures.

4.4 Public Reporting and Data Availability

A summary of noise monitoring data, along with general updates to the noise monitoring program, will be made publicly available on a weekly and monthly basis.

5.0 Fugitive Dust

Fugitive dust is defined as solid airborne particulate matter that is emitted from sources other than conventional chimneys/stacks. The principal sources of fugitive dust from the Project will include road construction and the construction of the ECB, drilling and blasting, loading and dumping, as well as general transportation along the road network in dry weather.

To address the potential issue of fugitive dust emissions, the following steps will be carried out for construction and operational activities:

- Identification of sources of fugitive dust emissions;
- Identification of particle size composition of emissions;
- Descriptions of proposed fugitive dust control mitigation measures for each identified source;
- Schedule for implementing the control measures;
- Inspection and maintenance procedures;
- Data collection; and
- Record keeping verifying compliance.

5.1 Fugitive Dust Monitoring Program

Air quality tests for metals content will be conducted at the Project and at the Town of Ming's Bight to establish baseline data regarding air quality in these areas prior to construction activities beginning. Anaconda has been in contact with an external consultant to determine appropriate methods of sample collection and data analysis. Sample collection will be based on ASTM D1739-98 (2017) – Standard Test Method for Collection and Measurement of Dustfall. Although the test is based on dustfall, the sample collection method is sufficient for gathering a sample for determining metals content. These samples will be collected at four (4) locations around The Project site (north, east, south, and west). Sampling four locations around the perimeter will provide information on where any particulates are falling outside of the site area, particularly with regards to The Town of Ming's Bight and the Town's Water Supply. As well, samples will be

collected in the Town of Ming's Bight (Town Hall). Sample collection will continue on a quarterly basis to capture seasonal changes in weather and environmental conditions, or as a new construction activity commences, to determine if dust is being generated and leaving the site perimeter. Testing of the samples will be completed by a third party (laboratory).

Sampling and monitoring is also being undertaken at the Stog'er Tight operation to gather information on the dust generation for existing operations.

Appropriate training will be provided to operations supervisors and pit personnel to help recognize sources of fugitive dust, and appropriate mitigation measures to be carried out to reduce dust generation. Additionally, training will be carried out on conducting the Dustfall testing procedure and sample collection.

5.2 Fugitive Dust Criteria

The values listed in Table 7 are to be viewed as threshold triggering values for the Project. These values stem from the 1979 BC Ministry of Environment Pollution Control Objectives for the Mining, Smelting and Related Industries which were used for the baseline studies associated with the KSM Project, a gold, copper, silver and molybdenum mine proposed in British Columbia in 2011 (Seabridge, 2012). If it is found that these limits are reached or exceeded, mitigation measures will be implemented to reduce the dust generation at the Project.

Table 7 - Fugitive Dust Threshold Limits

Parameter	Concentration Limit ($mg/dm^2/day$)
Dustfall Deposition Rate	1.7 – 2.9

5.3 Fugitive Dust Mitigation

5.3.1 Triggers for Fugitive Dust Mitigation

The proposed fugitive dust activation triggers will include, but are not limited to, the following:

- If the threshold limits listed in Table 7 are reached or exceeded; and

- Receipt of community feedback regarding concerns of fugitive dust emissions from the Project.

The procedure for responding to fugitive dust triggers are as follows:

- Mine Superintendent or Site Supervisor will observe the operation and make note of any visible fugitive dust emissions from the Project and the likely source of the dust within one (1) hour;
- Mine Superintendent or Site Supervisor will apply appropriate measures to mitigate the generation of the dust;
- Mine Superintendent or Site Supervisor will monitor the operation after the mitigation measures have been implemented to determine if the measures have been successful in dust suppression or if the measures require adjustments;
- Documentation will be compiled including the complaint/feedback, investigation of the source, mitigation measures implemented, and corresponding results; and
- Written feedback will be provided within two (2) business days to the complainant regarding mitigation measures.

5.3.2 Fugitive Dust Mitigation Measures

Fugitive dust management strategies will be assessed on a continuous improvement approach to ensure that throughout the operation dust generation is limited, reduced, or eliminated. This progressive approach to monitoring and implementation will allow for a more effective control of fugitive dust emissions from the Project. Fugitive dust mitigation measures will be implemented prior to observing issues or concerns regarding dust generation arising in an effort to eliminate the risk. Mitigation measures for dust suppression/containment are listed in Table 8.

Table 8 - Fugitive Dust Mitigation Measures

Parameter	Description and Mitigation
Environmental Control Berm	The Environmental Control Berm (ECB) will be a berm constructed of waste rock between the Argyle site and the Town. The berm will be constructed between the Project and the Town to act as a physical barrier and prevent fugitive dust from leaving the site. The berm will be constructed in stages and will advance as mining operations continue to supply waste material for construction.
Erosion Protection/Progressive Reclamation	Throughout the life of the Project, progressive rehabilitation efforts will be implemented to reclaim exposed surfaces and reduce the sources of potential fugitive dust.
Weather Monitoring	Weather and climatic conditions will be monitored on a daily basis. Activities and planning will be dependent on potential weather conditions. Unfavorable conditions for dust generation are considered to be periods of dryness, high winds (particular in the direction of the Town), and high temperature.
Water Application/Water Truck	The primary mitigation measure for dust suppression will be the application of water (water truck) on the haul/site roads. Two (2) water trucks will be available for use at the Project for watering roads.
Additional Dust Suppressants (Calcium Chloride)	Additional dust suppressants, including calcium chloride, may be used for dust suppression at the Project on the haul/site roads. Anaconda will ensure that proper application procedures and protocols (method of application, quantity) are undertaken.
General Road Maintenance and Speed Limit	Site grading and regular road maintenance will be implemented to ensure the road conditions are sufficient. The speed limit for site/haul roads will be 30 km/hr at all locations unless otherwise posted. This will be strictly enforced to ensure that dust generation is minimized.

As previously mentioned, the BMP is intended to be a working document. Additional mitigation measures may be explored as the development of the Project progresses to ensure that fugitive dust generation is minimized.

6.0 Records

The following documentation will be retained on-site throughout the life of the Project and will be available for review by interested parties upon request:

- Blasting
    - Blasting checklists;
    - Records of blast design;
    - Records of vibration mitigation measures (stemming, hole diameter, timing, etc.);
    - Climatic data at time of blast; and
    - Feedback logs and follow up actions.
- Vibration / Airblast Overpressure Monitoring
    - Vibration and airblast monitoring data and reports;
    - Instrumentation maintenance reports (calibration, repair, etc.); and
    - Feedback logs and follow up actions.
- Noise
    - Monitoring equipment/instrumentation inspection and maintenance reports (repairs, calibration, etc.);
    - Records of noise mitigation measures and results; and
    - Feedback logs and follow up actions.
- Fugitive Dust
    - Blasting schedules;
    - Results of weekly inspections and road maintenance activities;
    - Records of dust mitigation measures and results;
    - Results of Dustfall tests; and
    - Feedback logs and follow up actions.

7.0 Community Interaction

One of the key methods by which Anaconda intends on communicating with the public and other interested stakeholders will be through a Community Liaison Advisory Group. This will provide a project-specific venue for discussion between the community or other stakeholders and Anaconda, and will include issues surrounding community feedback, project information, post-closure land use, and any project recommendations. Anaconda will propose the concept of the Community Liaison Group to the Town of Ming's Bight.

Anaconda also intends on participating in Town Council Meetings (when requested or scheduled) to provide project updates, and will host Town Hall meetings, if required, to discuss major project updates/changes or address major concerns of the stakeholders.

7.1 Community Feedback Protocols

Anaconda will establish a web-based 'Community Feedback Forum' application which will allow stakeholders to provide immediate feedback to Anaconda on issues involving noise, vibrations, airblast, dust, or other concerns pertaining to the Project. Additionally, an e-mail address will be created to provide another option for submitting feedback to Anaconda (i.e. communityfeedback@anacondamining.com). These options will be posted in the Town and every effort will be made to ensure all stakeholders are aware of the options regarding feedback for the Project.

7.1.1 General Feedback Procedures

Anaconda has developed formal procedures for managing enquires received either through the Community Feedback Forum, electronically, or via telephone. Unless stated in previous sections, these procedures are as follows:

- All enquires will be forwarded to the Site Supervisor and/or Mine Superintendent to initiate the process;
- Site Supervisor and/or Mine Superintendent will follow up with the stakeholder who submitted the enquiry to ensure it is fully understood; and

- All enquires will be recorded in a database, as well as any associated corrective actions or mitigation measures and the resulting effects.

In the event that feedback is received, the resolution process will involve discussions with the stakeholder submitting the feedback and the Site Supervisor and/or Mine Superintendent. The stakeholder will be made aware of the procedures used for monitoring and reporting at the Project, and the procedures to be taken to address the feedback. Every effort will be made to ensure feedback is addressed in as timely manner as possible and a desirable outcome is achieved for all parties involved. Procedures associated with addressing and managing feedback received are as follows:

- The feedback received will be recorded in a database;
- Preliminary investigations will begin within three (3) hours of the Site Supervisor/Mine Superintendent receiving the feedback (unless received overnight, in which case it will be addressed first thing the following business day);
- Appropriate mitigation measures will be identified and implemented as soon as possible to address the feedback;
- Following the implementation of the mitigation measures, an assessment will be carried out to determine the effectiveness of the measures and the overall results;
- Mitigation measures and results will be logged with the feedback in the database; and
- Written feedback will be provided to the stakeholder within two (2) business days detailing the resolution process and resulting mitigation measures implemented to address the feedback.

It is anticipated that these Community Feedback Protocols will aid in Anaconda becoming aware of issues pertaining to the Project and any concerns raised by the stakeholders and allow them to be addressed in a timely manner. Anaconda is committed to working with all stakeholders to address feedback in an effective and timely manner, as well as developing and operating the

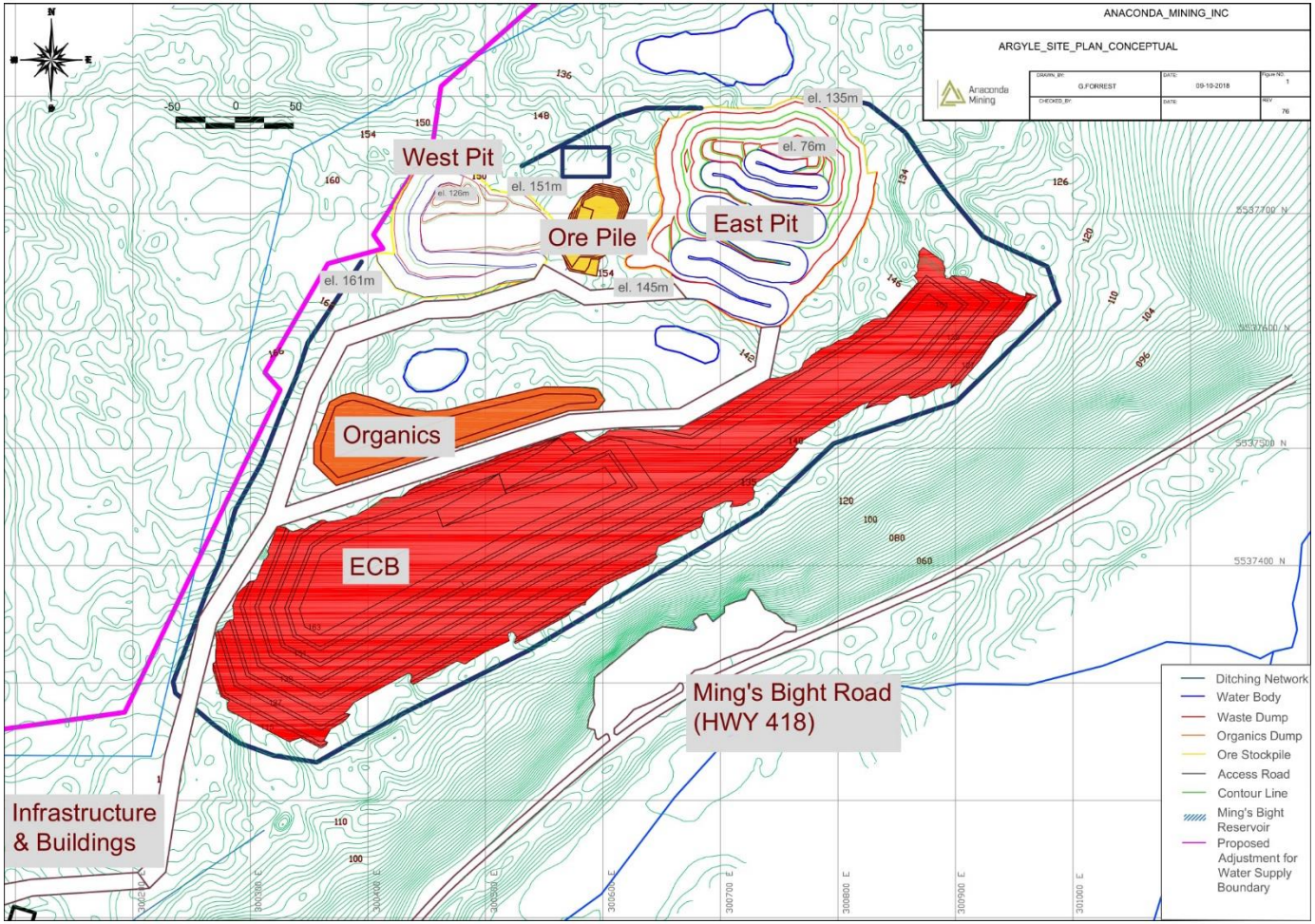
Project on a continuous improvement basis, with the goal of creating a socially and environmentally sustainable project.

8.0 References

Goldcorp: Porcupine Gold Mines. (2012). *Hollinger Project Best Management Plan.* Timmins, Ont.

Seabridge Gold Inc. (2012).2008 to 2011 Air Quality Baseline Report. Vancouver, BC.

Appendix A – Argyle Site Plan



Appendix B – Vibration Limits

Vibration Limits for Structures and Infrastructure (Peak Particle Velocity – PPV [mm/s])

Infrastructure Type	PPV Limit [mm/s]	Comments
Wooden Hydro Poles	240	
Water Pipelines	50	
Mine Buildings	100	Steel Construction
Concrete and Grout <72 hours from placement	10	
Residential Dwelling	20	

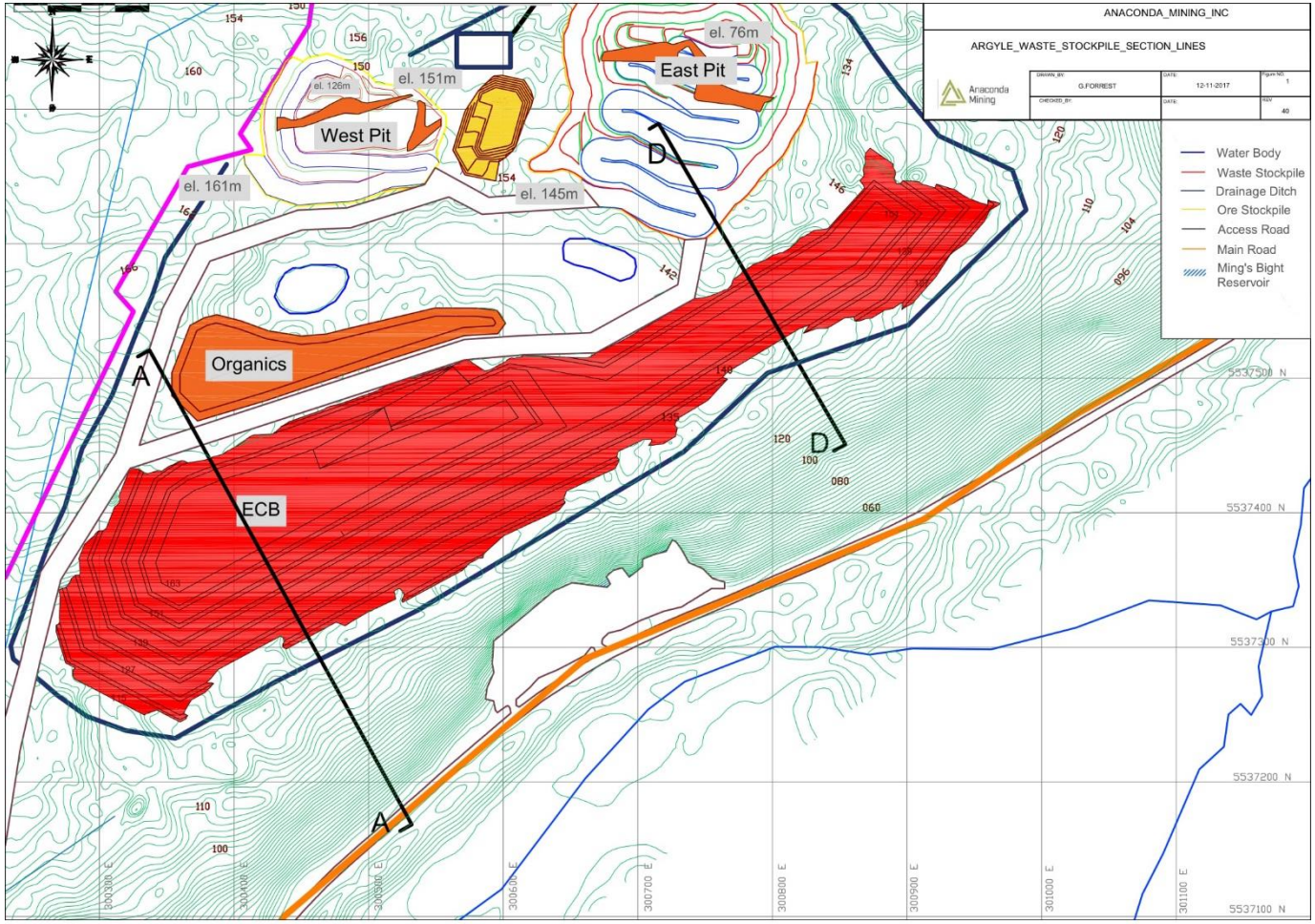
(Goldcorp, 2012)

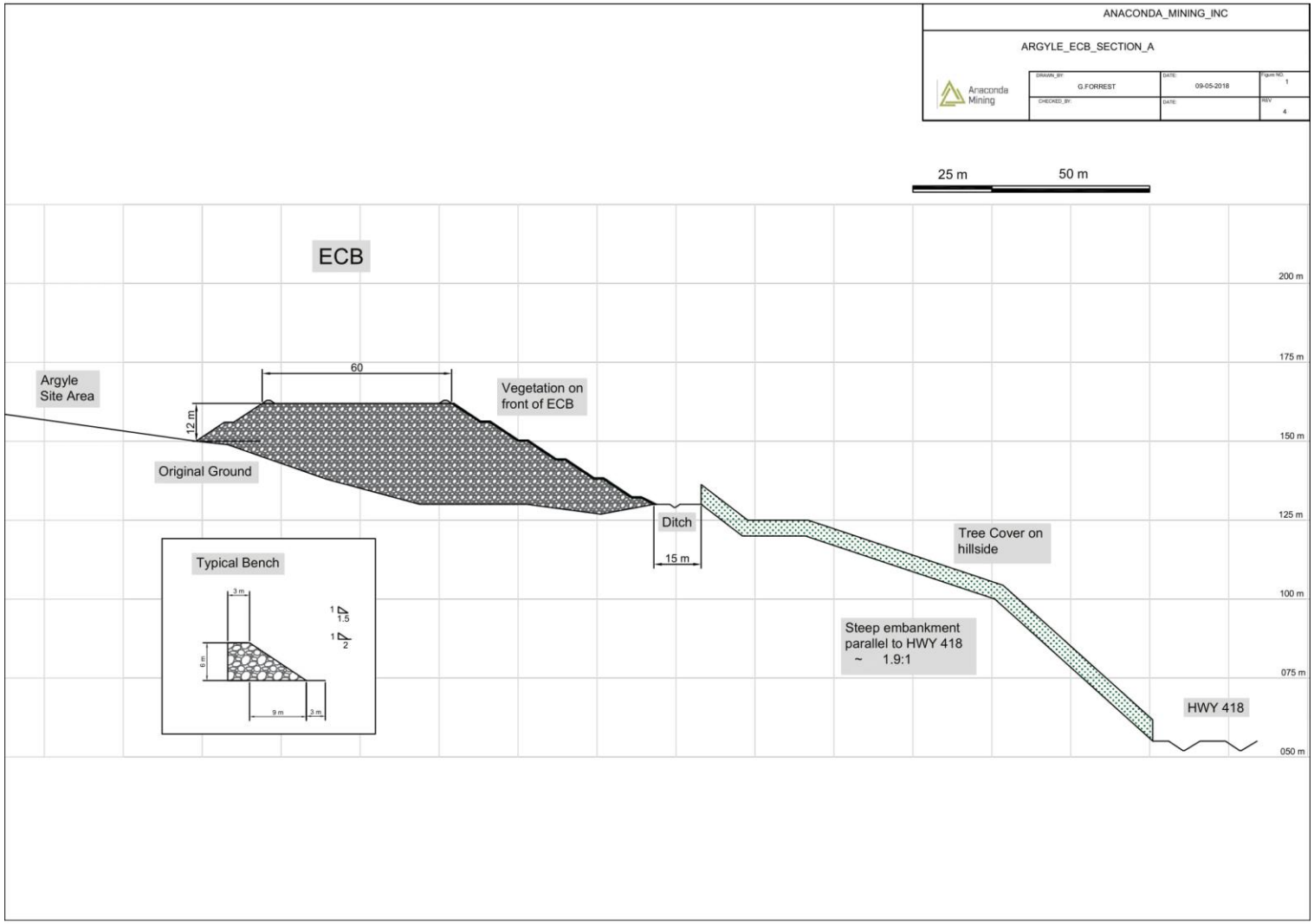
Human and Structural Response to Airblast Overpressure

Comments	Decibel (dB)
10% Failure Probability – Multi Storey Steel Construction	182
10% Failure Probability – 1-3 Storey Framed Construction	174-177
Reasonable Threshold for Glass and Plaster Damage	140
US Bureau of Mines Worst-Case Safe-Level Airblast Criterion	134
Ministry of Environment (ONT) Guideline for Mines and Quarries, Goldcorp's Hollinger Pit	128
Ordinary Conversation	67

(Goldcorp, 2012)

Appendix C – ECB Cross Sections

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50 m
ECB
200 m
175 m
150 m
125 m
100 m
075 m
050 m
Argyle Site Area
60
12 m
Vegetation on front of ECB
Original Ground
Ditch
15 m
Tree Cover on hillside
Steep embankment parallel to HWY 418
~ 1.9:1
HWY 418
Typical Bench
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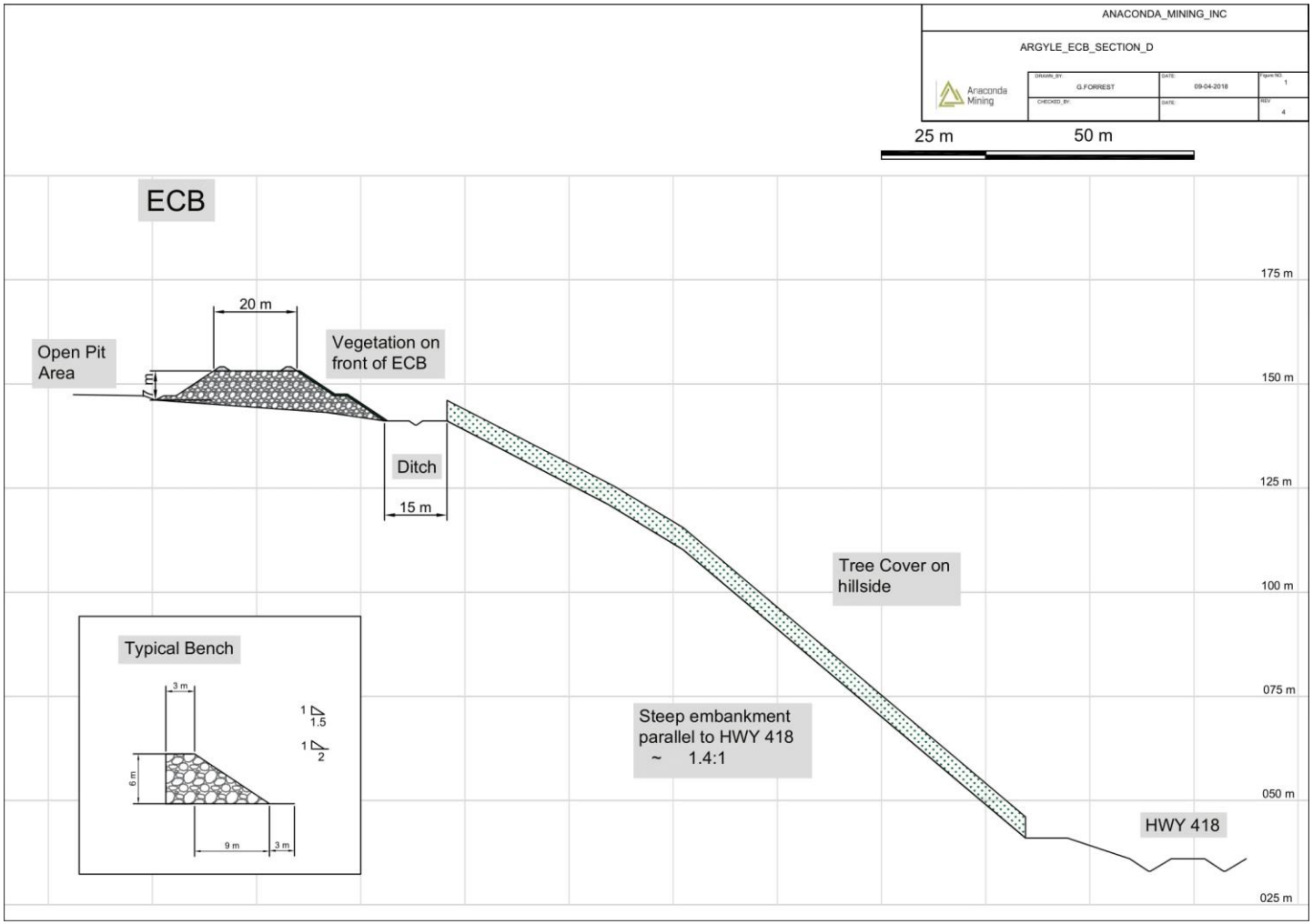
1
1.5
1
2
6 m
9 m
3 m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G.FORREST
09-04-2018
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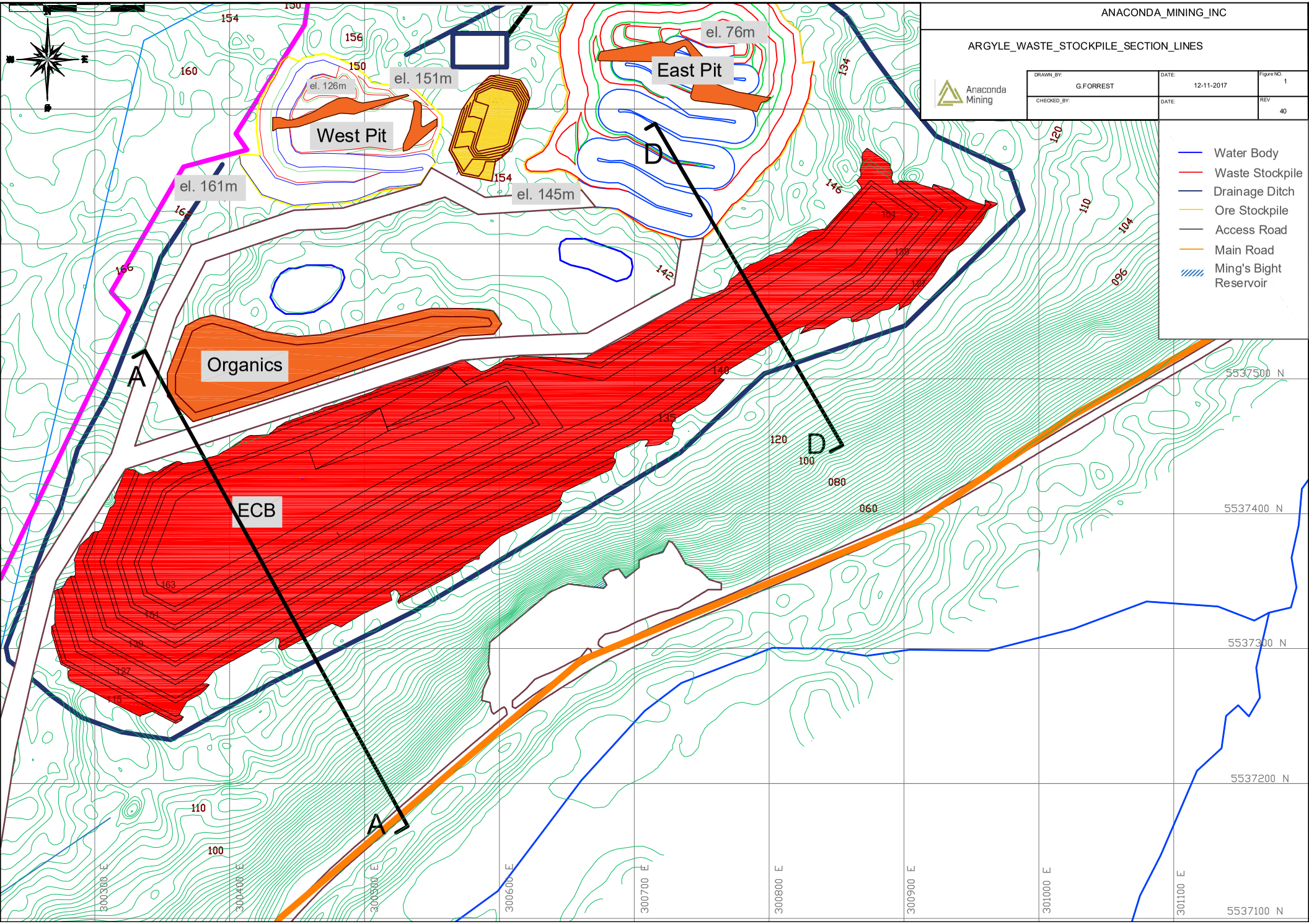
ECB
175 m
20 m
Open Pit Area
Vegetation on front of ECB
7 m
150 m
Ditch
15 m
125 m
Tree Cover on hillside
100 m
Typical Bench
3 m
1 1.5
1 2
6 m
9 m
3 m
075 m
Steep embankment parallel to HWY 418
~ 1.4:1
050 m
HWY 418
025 m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Water Body
Waste Stockpile
Drainage Ditch
Ore Stockpile
Access Road
Main Road
Ming's Bight Reservoir
West Pit
East Pit
el. 151m
el. 126m
el. 76m
el. 161m
el. 145m
Organics
ECB
A
A
D
D
5537500 N
5537400 N
5537300 N
5537200 N
5537100 N
300300 E
300400 E
300500 E
300600 E
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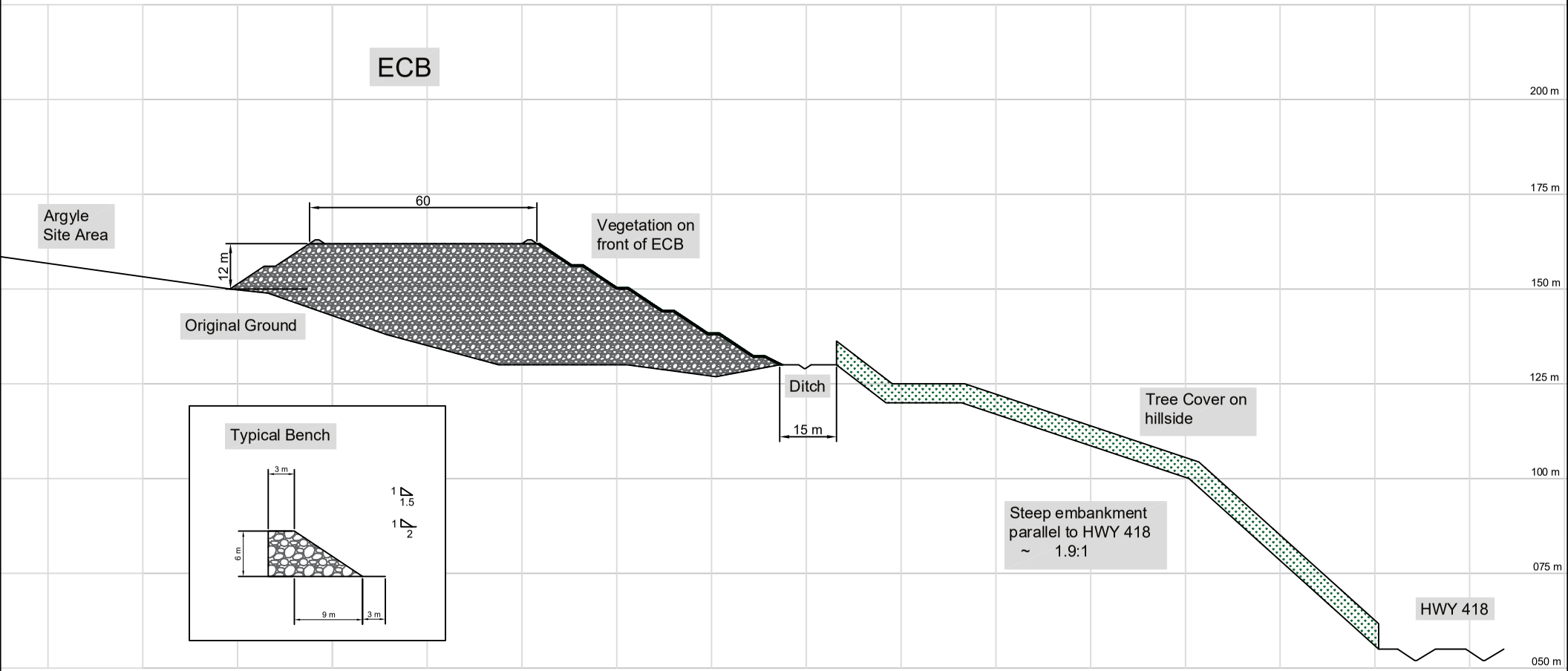

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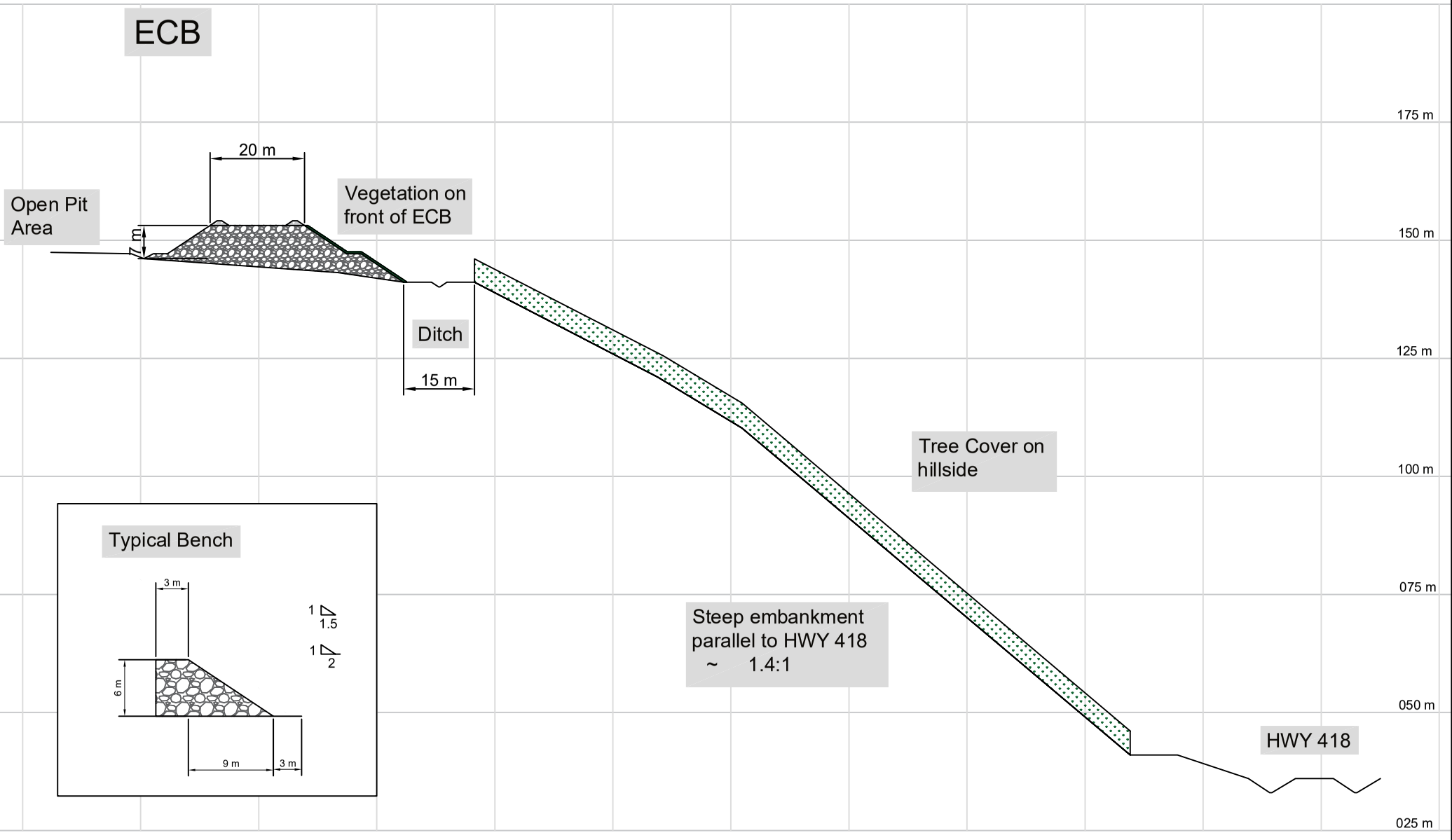
25 m 50 m

ECB



Typical Bench

WATER QUALITY MANAGEMENT PLAN
ARGYLE GOLD PROJECT
ANACONDA MINING INC.

2018

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Revisions

Document Version	Developer	Date
1 - Original	G. Forrest	August 23, 2018

1.0 Executive Summary

Located near the Town of Ming's Bight, NL ('the Town'), Anaconda Mining Inc. ('Anaconda') intends on developing the Argyle Gold Project (the 'Project'). This project will consist of the development and operation of an open pit mine, with the ore material being transported to the Pine Cove Mill via a network of access roads. The current schedule has open pit mining operations beginning in Q3 2019 (July-August-September 2019), and lasting approximately two years, with potential expansion as exploration activities and permitting continue. See Figure 2 for the proposed Site Plan for the Project.

Activities associated with Argyle will include drilling, blasting, loading and hauling of ore and waste rock material. All ore material will be transported to the Pine Cove Mill for processing and tailings storage. Due to the proximity of the operation to the Town of Ming's Bight's (the 'Town') Protected Public Water Supply Area ('PPWSA'), the Project must be developed and operated in a manner that will minimize or eliminate all risk associated with generating adverse effects on the quality of the water within the PPWSA.

Anaconda is committed to ensuring that the Town has a clean and safe supply of water throughout the life of the Project. Water quality testing will take place at various locations within the boundaries of the Project, as well as in the PPWSA to ensure the quality is maintained. Baseline studies are currently being undertaken to gather information and data regarding the water quality at the Project and within the PPWSA.

This document will outline the various locations of water sampling, water quality testing parameters, and contingency plans, and is to be used as a reference for operation at the Project with regards to water sampling/testing.

2.0 Permits

There are several permits that will be required for operations at the Project. This include, but are not limited to, the following:

Permit to Alter a Body of Water	Water Discharging	Water Resource Management Division	Planned
Certificate of Approval for Site Drainage	Water Run-off from Site	Water Resource Management Division	Planned
Water Use Authorization	General Water Use	Water Resource Management Division	Planned

These permits will be obtained prior to development activities commencing.

3.0 Water Sampling

3.1 Sampling Locations

Figure 1 displays the water sampling locations at the Project. Each site is provided a numerical value for identification. Anaconda also retains the option of testing water quality at other locations, as well as changing the frequency of the testing.

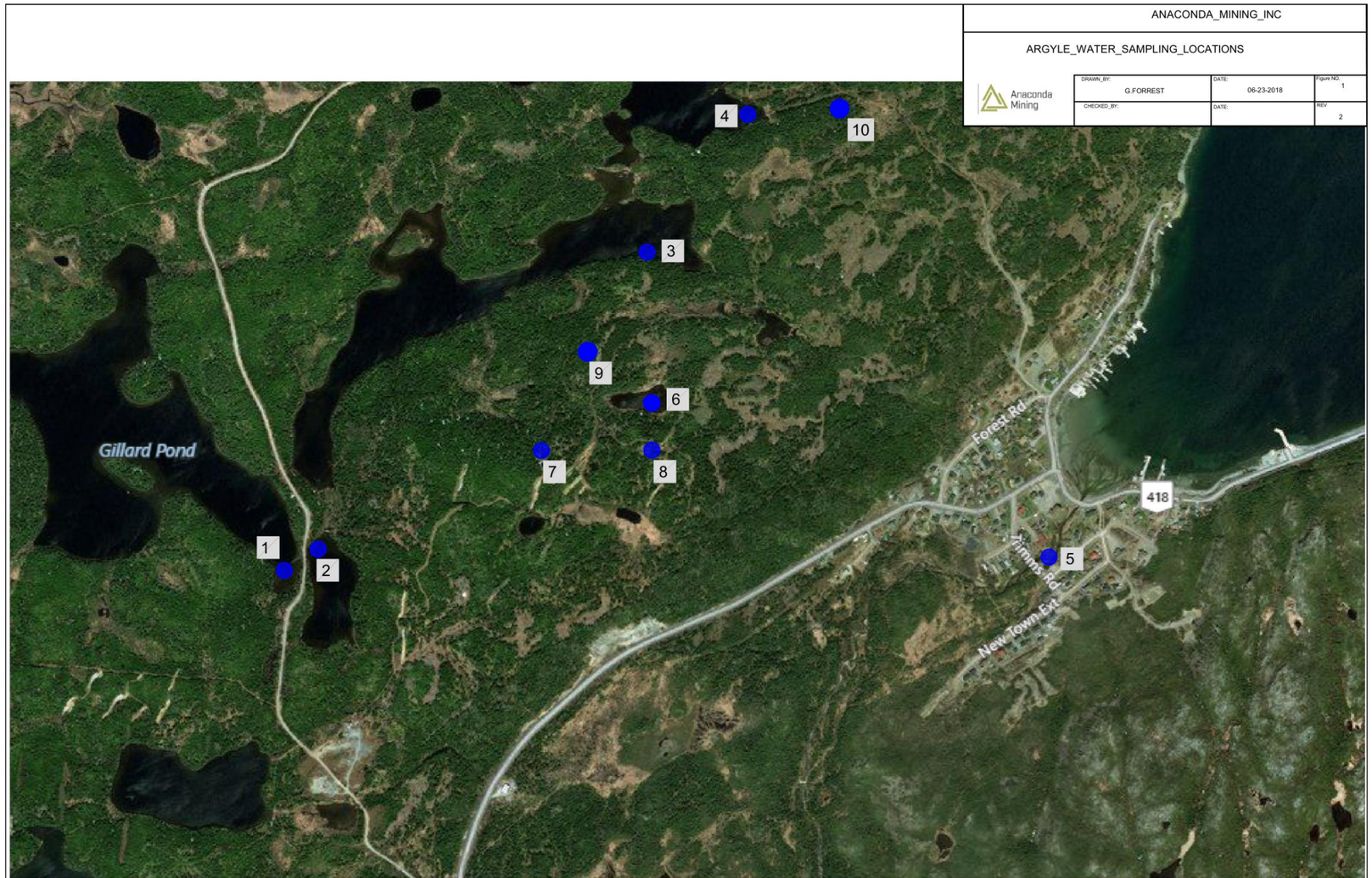

Figure 1 - Water Sampling Locations for the Arygle Project

3.2 Sampling Description

Table 1 lists the description of each sampling location for the Project.

Table 1 - Sampling Location Descriptions

Location	Location Description	Testing Description	Water Quality Parameters	Frequency
1	PPWSA – Gillard Pond	Third-Party	Total Metals	Quarterly
2	PPWSA – Mud Pond	Third-Party	Total Metals	Quarterly
3	PPWSA – Bear Pond (inside of the 500 m blast radius)	Third-Party	Total Metals	Quarterly
		In-House	pH, Cu, Ammonia, TSS, Temp	Post-Blast or Weekly
4	PPWSA – Bear Pond (Water Supply Intake)	Third-Party	Total Metals	Monthly
		In-House	pH, Cu, Ammonia, TSS, Temp	Post-Blast or Weekly
5	Town of Ming's Bight	Third-Party	Total Metals	Monthly
6	Fourth Pond (north of the East Pit)	In-House	pH, Cu, Ammonia, TSS, Temp	Daily
7	West Pit	In-House	pH, Cu, Ammonia, TSS, Temp	Daily
8	East Pit	In-House	pH, Cu, Ammonia, TSS, Temp	Daily
9	Settlement Pond	In-House	pH, Cu, Ammonia, TSS, Temp	Daily
10	Final Discharge Point, FDP (Location at which water is discharge from the Project to the environment)	Third-Party	Total Metals, Acute Lethality Test	Time of Discharge

Notes:

- Cu – Copper
- TSS – Total Suspended Solids
- Temp – Temperature
- PPWSA – Protected Public Water Supply Area

Location 3 is tested on a post-blast frequency as it is partially within the 500 m blast radius. Testing this location on a post-blast basis will identify any adverse effects on the PPWSA from a blasting activity. Location 5 is tested on a post-blast frequency as well, as it is connected to the same water body as Location 3 and is also the intake for the Town's water supply.

The final discharge point, as described in the Environmental Preview Report, will be established a minimum of 150 m downstream of the PPWSA boundary, and will deposit water into a tributary that leads to the ocean.

Table 2 lists the parameters and threshold limits for discharging water into the environment. Testing will be conducted until these criteria are met, at which time water may be released into the environment at the approved discharge point (these tests are completed by a third party). Treatment options will be evaluated, if required, depending on the parameters that are not meeting the standards.

Table 2 - Threshold Limits for Discharging Water into the Environment

Parameter	Maximum Authorized Monthly Mean Concentration	Maximum Authorized Concentration in a Composite Sample	Maximum Authorized Concentration in a Grab Sample
Arsenic	0.50 mg/L	0.75 mg/L	1.00 mg/L
Copper	0.30 mg/L	0.45 mg/L	0.60 mg/L
Cyanide	1.00 mg/L	1.50 mg/L	2.00 mg/L
Lead	0.20 mg/L	0.30 mg/L	0.40 mg/L
Nickel	0.50 mg/L	0.75 mg/L	1.00 mg/L
Zinc	0.50 mg/L	0.75 mg/L	1.00 mg/L
TSS	15.00 mg/L	22.50 mg/L	30.00 mg/L
Radium 226	0.37 Bq/L	0.74 Bq/L	1.11 Bq/L
pH	Allowable Range 5.5 – 9.0 units		
ALT	Toxic pass		

4.0 Site Water Management

During construction and site development at The Project, dust and fine material may have the potential to mobilize into ponds and streams near the road. To mitigate this, sediment-trapping material such as approved filtration fabrics will be used in areas subject to siltation and erosion. Water trucks will be used for dust suppression on the roads and stockpiles. Water for dust suppression on haul roads has proven to be sufficient at other Point Rousse operations. All mechanical equipment will be inspected regularly to ensure leakage of fuel, hydraulics, oils or other hazardous products does not occur. Spill kits will be on site and available in the case of an emergency.

As required, standard mitigation methods, such as on-site drainage ditch channels, collection sumps and settlement ponds, will be used to control silt and sediment and prevent the release of potential contaminants from The Project site. A 1.0 m deep drainage ditch and collection will be constructed around the perimeter of the site and will collect all surface water run-off prior to leaving the site. The ditching network will direct water to a series of collection sumps/ponds which will ultimately lead to a main settlement pond. Transfer of water will typically be of gravity flow throughout the ditching network. However, it is anticipated that low points in the local topography will be encountered, as well as having to transfer from collection sumps/ponds to the main settlement pond. When these areas are encountered, small submersible pumps will be installed to transfer the water from one location to the next. These pumps will be installed with a float switch that will enable the pump to transfer water once a predefined water level is reached. As the relief in the area is relatively low, the use of these pumps is anticipated to be sufficient for transferring water in high-flow storm events. If it is found that the pumps are unable to maintain sufficient water levels, or if a pump fails, Anaconda will have two (2) portable 'trash' pumps (gas powered pump) that will be available for install to transfer water. As Anaconda is regulated by governing agencies to control all discharge from site, it is deemed unacceptable for any discharge, including surface water run-off, to leave site unless it is directed through the FDP. The collection system and settlement ponds will be in-ground facilities and will not contain any dam works. It is expected that the settlement ponds will have a capacity of approximately 10,000 m^3. The location of the settlement pond can be seen in Figure 2.

The channels will be graded and lined with drainage stone/rip rap material to prevent erosion and will prevent surface water leaving the Project site. See **Error! Reference source not found.** for the proposed location and Figure 3 for the cross section of the ditching system at the Project. The ditch will be 1 m deep, side-sloped at 1.5:1, and, if needed, lined with rock to prevent erosion of the bedding material. Water testing will take place regularly to ensure discharged water is of, at a minimum, sufficient quality.

Two options were considered for releasing water into the environment:

1. Discharging to the North – This option would include a pump and piping network that would transfer water from a large settlement pond to the natural overflow stream of Bear Pond (a pond within the Town of Ming's Bight Water Supply). The piping network (approximately 533m of 6" HDPE pipe) would remain on Anaconda's Mineral License, and no released water would enter the Town of Ming's Bight Water Supply.

2. Discharging to the South – This option would include a pump and piping network that would transfer water from a large settlement pond to a natural stream that runs west to east, south of the Argyle site.

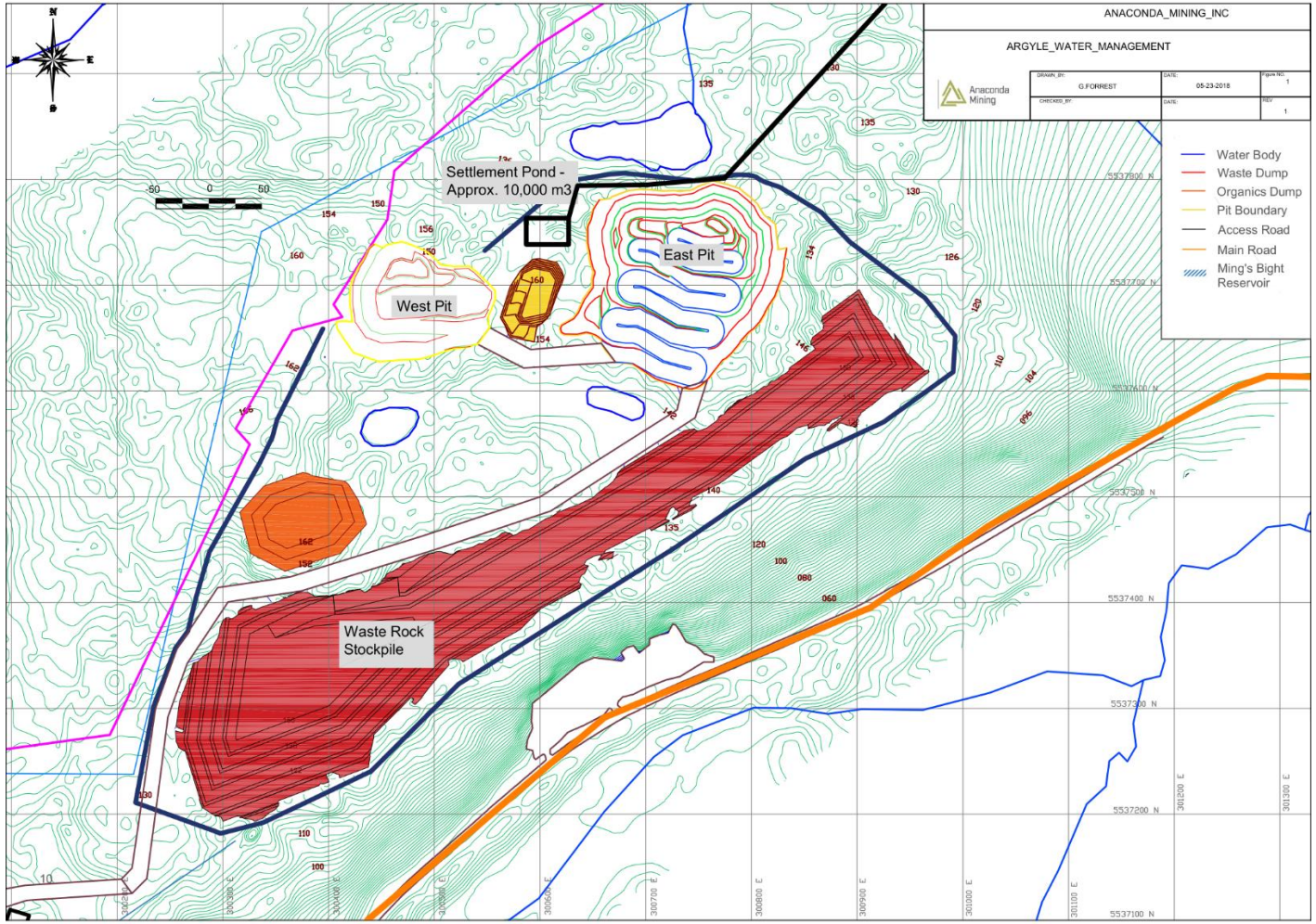

Figure 2 - Water Management at Argyle (Ditching, Settlement Pond)

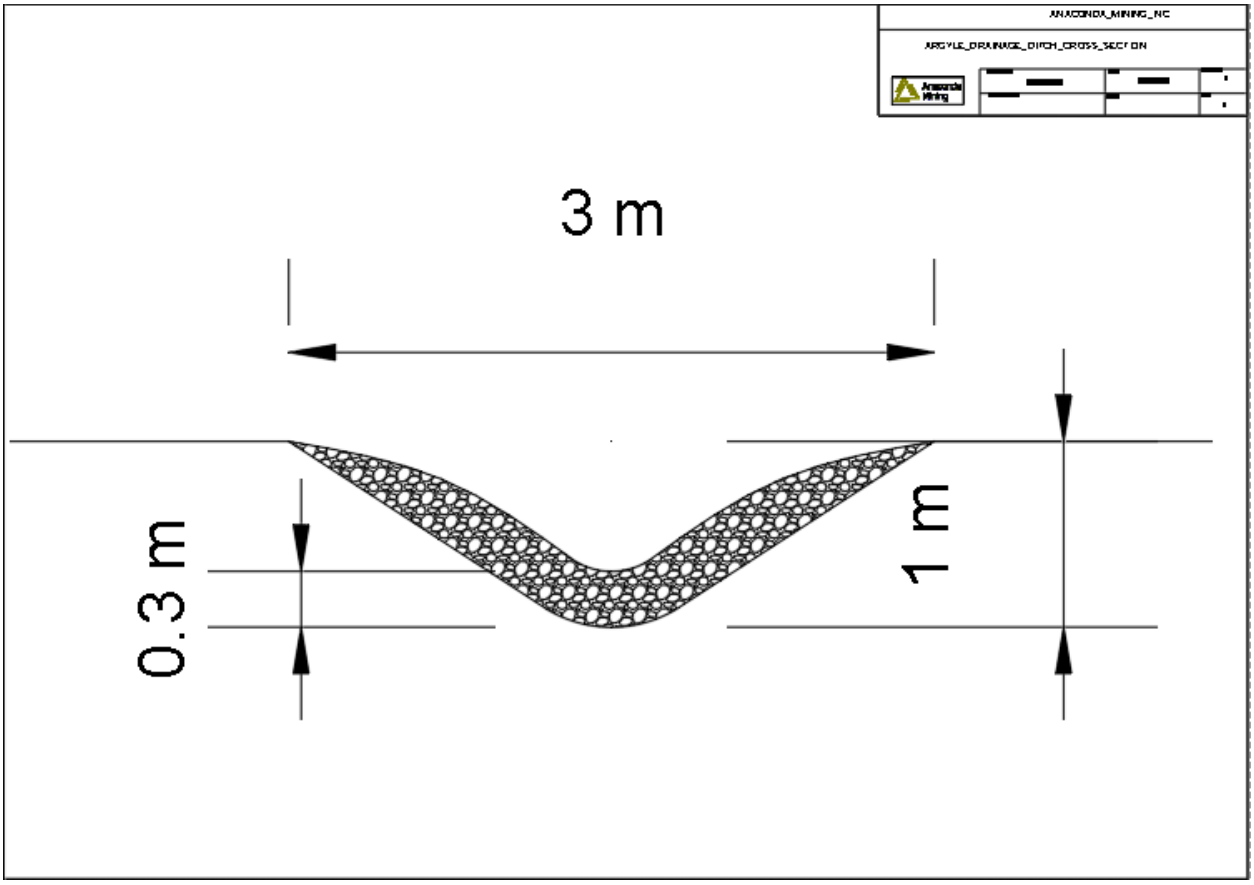

Figure 3 - Cross Section of Ditch

The two options considered for discharging are displayed in Figure 4. The red lines represent the anticipated location of the piping system for each option, and the fuscia line represents a possible adjustment to the Town of Ming's Bight Water Supply boundary, proposed by Water Resources. The blue lines represent the natural stream channels currently existing. The shaded area represents the Town of Ming's Bight Water Supply reservoir. Arrows have been added to display the direction of flow.

Option #1 was chosen based on the level of risk involved in potentially affecting the Town of Ming's Bight. Option #1 involves discharging water into a natural stream channel that will eventually lead into the ocean. Water quality is not anticipated to be an issue as testing must occur and water meet certain guidelines prior to being discharged. The piping network will lead to the outflow of Bear Pond, part of the Ming's Bight water supply. However, as water will be discharged into the outflow stream approximately 50 m from the boundary, no water will enter the Town of Ming's Bight Water Supply. The water will then follow the outflow path until connecting with the ocean north of Ming's Bight.

Option #2 involved discharging water over a shorter piping network into another natural stream channel. However, the discharged water would have to travel through three road crossings: two of HWY 418 and one service road in the Town of Ming's Bight. The increased water flow may have the potential to affect the crossings, as they would have been designed based on a flow that does not take into account the discharge rate from The Project. As well, the natural stream for Option #2 would travel directly through

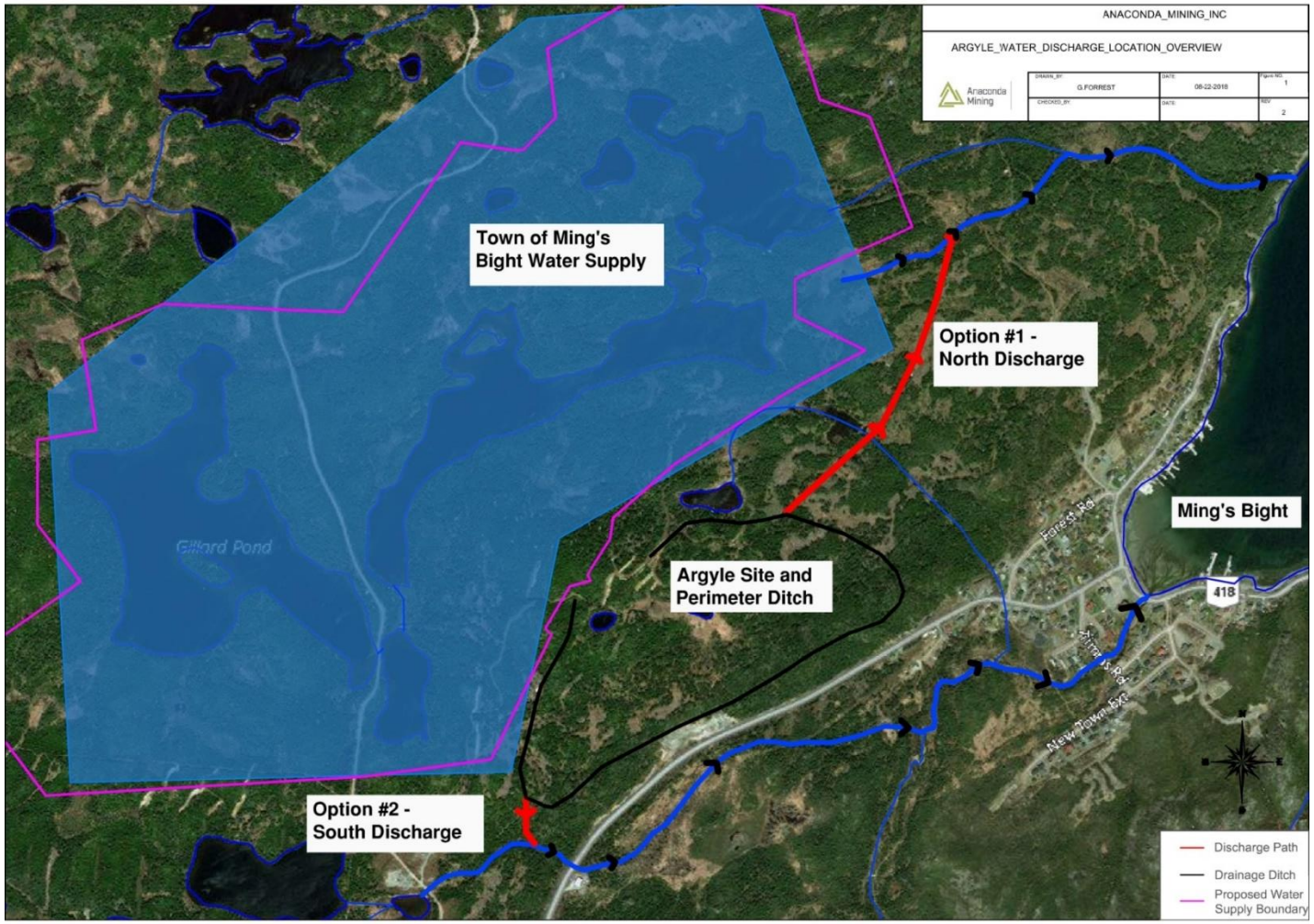

Figure 4 - Options for Discharging to the Environment

the Town of Ming's Bight before discharging into the ocean. Although the water would be of suitable quality to be discharged into the environment, it was determined that avoiding the road crossings and not going through the Town is the best course of action. Therefore, the option of discharging to the north of The Project to avoid these potential issues was chosen.

The release of water will consist of a pump and pipe system that will discharge water onto a boulder/cobble splash-pad to reduce the kinetic force of the discharged water and prevent erosion. The water will then follow a natural drainage channel into the environment, ultimately reaching the ocean. The natural drainage channel does not enter the Town of Ming's Bight water supply, but rather leads away from the boundary. Discharging of water will be monitored to ensure that the drainage channel is not over-loaded with flow, and to ensure no erosion occurs downstream of the discharge point. If erosion is detected, the discharge will be stopped, and measures will be taken to mitigate the erosion. This may include the placement of rip-rap, reinforcing eroded areas, or re-evaluating the discharge location options.

Initial desktop studies indicate that the latter portion of the natural stream draining from the Bear Pond/Water Supply to the ocean consists of a steep gradient (50%-60%). This occurs over the last 60 m of channel prior to entering the ocean along the shoreline. This gradient over this distance is unsuitable for fish passage, indicating that no fish are likely entering the stream from the ocean. Additionally, visual inspection by Anaconda indicates that there are no fish present. However, further studies will be carried out to conclude that this natural stream is not a fish habitat when completing the Permit to Alter a Body of Water (to discharge water into the stream) and establishing the Final Discharge Point location for discharging water from the Project. If fish habitat is discovered, action will be taken to redirect the discharged water, or provide an alternate habitat.

5.0 Acid Rock Drainage

Operations at the Project will minimize the stockpiling of ore materials on site before they are transported to the ore pad at the Pine Cove Mill (maximum storage capacity of 20,000 t). Although it is not anticipated that the ore from the Project is acid generating, the material will be stockpiled on an impervious pad until it is transported to Pine Cove for processing. This pad will be constructed on waste rock from Argyle, which is known to be non-acid generating. A ditch will surround the impervious pad to direct and control surface run-off from the stockpile into the ditching network, and subsequently into a collection or settlement pond. Following the completion of mining activities, the pad will be decommissioned, and the material will be placed in the East Pit prior to flooding. As previously mentioned, the ditching network and collection ponds will prevent any run-off from leaving the site. Samples from this collection ditch (and subsequent settlement pond) will be collected and tested weekly, or as required, to ensure that the water quality at Argyle remains within the regulatory guidelines. Once ore material is transported to Pine Cove, it will also be stored on an impermeable pad in the same location Stog'er Tight ore will have been stored. This will ensure that drainage from the ore material is directed into the In-Pit Tailings facility to ensure the drainage from the ore material is controlled and contained prior to processing.

The resulting tailings material produced from mill processing will be deposited in the already-permitted Pine Cove In-Pit Tailings Facility, using a sub-aqueous disposal method. The approved In-Pit Tailings Facility has a tailings capacity of 14 years, and creates no additional surface disturbance or footprint, as opposed to an earthen facility at surface. The sub-aqueous disposal process will mitigate any adverse affects from any potential acid producing material that may be found at The Project. The water quality and environmental conditions surrounding the in-pit tailings facility will be monitored regularly to ensure no variance in conditions occur when depositing the Argyle tailings material.

Once mining activities are completed, the pits will be allowed to flood, submerging the walls in groundwater. Although the west pit will be backfilled with waste material, it is assumed that the ground water will fill the empty voids in the backfill material, submerging the waste rock and pit walls in water.

Waste rock is considered Non-Acid Generating and is not expected to generate ML/ARD issues associated with storage on stockpiles and along pit wall exposures.

6.0 Reporting

Testing results from third-party testing will be summarized in weekly, monthly and annual reports. These reports will be made available to the Town and will be circulated internally for review and analyses.

A reporting template will be established prior to development activities commencing in an effort to standardize the reporting scheme and maintain consistency. The template will be attached to this document once it is approved.

7.0 Contingency Plans

If it is discovered that issues or concerns regarding water quality are developing, or monitoring indicates that the thresholds have been reached or exceeded, the following steps will be taken:

- Supervisor will review the data to determine if the particular parameter(s) did exceed the threshold limits;
- Supervisor will, within one (1) business day, investigate and determine the source of the concern;
- Supervisor will provide notification of the event and appropriate follow up actions to prevent a re-occurrence;
- If the source cannot be identified, someone will be designated to investigate the event further and document all findings; and
- The Supervisor will take all appropriate actions to ensure any mitigation measures are successful;
- Documentation will be compiled including the raw data and concern, investigation of the source, mitigation measures implemented, and corresponding results. This information will be reviewed by the Supervisor and/or Mine Superintendent.

If it is determined that the PPWSA has been affected from activities at the Project, Anaconda will provide the Town with clean water (bottled water) until the issue is rectified at no cost to the Town. This is deemed to be the 'worst-case' scenario, and Anaconda is committed to operating at the Project in a manner as to minimize this risk. As mentioned, the proposed operating plan does not include any alterations to the PPWSA. If modifications to the PPWSA are warranted or required, Anaconda will consult with the Town and Water Resources Division to develop a design and plan that is sufficient for all parties.

Other methods of mitigation for treating water on-site may include:

- Floc-Blocks (TSS)
- Ammonia Stripping Procedures
- Aerification
- Retention Time

If a severe storm event(s) generate a substantial quantity of water in which Anaconda cannot contain within the water management system (ditches, collection sumps, settlement pond), or if Anaconda is unable to discharge water while ensuring it is of sufficient quality for discharging to the environment, water will be directed into one of the open pits for storage. Once the water quality is of sufficient quality, or the quality is verified, the water will be discharged to the environment.

GEMTEC
www.gemtec.ca

Preliminary Metal Leaching & Acid Rock Drainage Characterization Argyle Deposit,

Draft Report

Baie Verte, NL

GEMTEC
www.gemtec.ca

Submitted to:

Anaconda Mining Inc.
238 Highway 410
Baie Verte, NL
A0K 1B0

Preliminary Metal Leaching & Acid Rock Drainage Characterization Argyle Deposit,

Draft Report

Baie Verte, NL

May 30, 2018
Project: 80016.09

experience • knowledge • integrity

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1.0 INTRODUCTION

1.1 Background

Anaconda Mining Inc. (Anaconda) is proposing to extract gold from its Argyle deposit, located on its Point Rousse property, approximately 500 m southwest of Ming's Bight, on the Baie Verte Peninsula, NL (see Figure 1). GEMTEC Consulting Engineers and Scientist Limited (GEMTEC) was retained by Anaconda to review results of sampling and laboratory testing programs to characterize the potential for metal leaching and acid rock drainage (ML/ARD) for the mine development project. This report provides the results of the ML/ARD sampling and testing program, as well as recommendations for mine project planning and further ML/ARD testing, and is understood that it will be a supporting document for the Project Environmental Assessment Registration.

1.2 General Geology and Mine Components

The following summary of the property geology is taken from the Canadian National Instrument 43-101 Technical Report, Mineral Resource and Mineral Reserve Update on the Point Rousse Project, Baie Verte, Newfoundland and Labrador, Canada (Cullen and Pittman, 2018).

The Argyle Deposit is located along one of three prospective belts of gold mineralization on the Point Rouse Property, referred to as the Scrape Trend, which is approximately 7 km long and 1 km wide and extends from the existing Pine Cove Mine site to the community of Ming's Bight (see Figure 1). The Scrape Trend is characterized by the alignment of orogenic gold deposits, prospects and showings that are structurally-controlled and associated with the Scrape Thrust Fault, a secondary fault associated with the larger-scale Baie Verte – Brompton Fault.

The Argyle Deposit is hosted within a 40 m to 50 m thick, gently north dipping east-west striking iron-titanium rich gabbro sill that intrudes a sequence of mafic volcanic, volcanoclastic and sedimentary Cambrian-Ordovician rocks of the Snooks Arm Group and is associated with the Scrape Thrust fault. Gold mineralization in the Argyle Deposit is intimately associated with disseminated and massive pyrite (1-5%) within the gabbro, and exhibits relatively narrow (5 – 40 m thick), but distinctive alteration haloes dominated by iron (Fe)-carbonate, albite, sericite, chlorite and leucoxene. The ore mineralogy is relatively simple and is generally comprised of non-refractory gold either as free gold or as coatings on, or along fractures/grain boundaries in pyrite. Silver and base metals can be present in minor amounts and the deposits typically exhibit only trace arsenic. Figures 2 and 3 show plan and cross geology of the deposit.

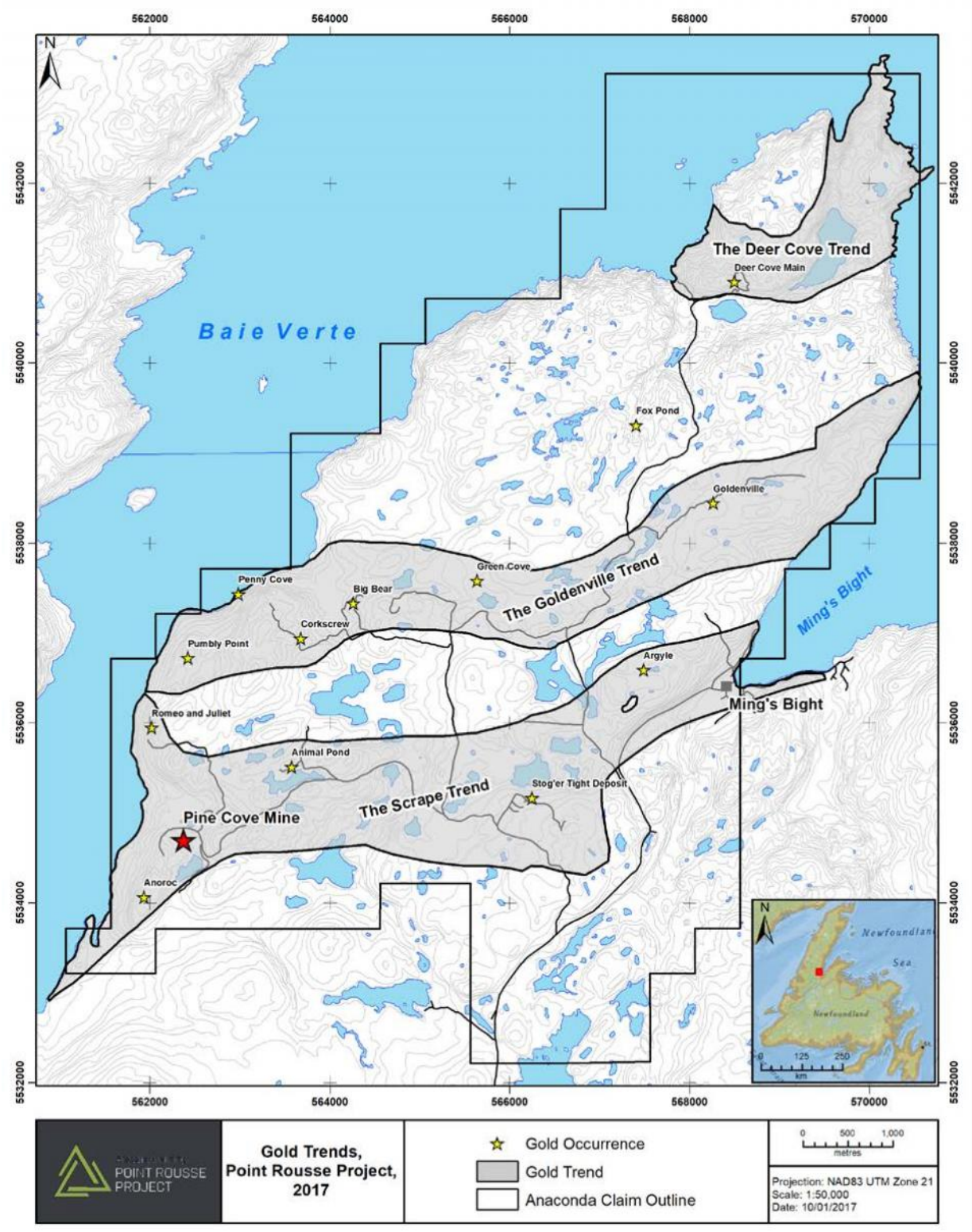

Figure 1 Site Location Map, Argyle Project along with the existing Pine Cove Mine and other deposits and prospects within Anaconda's Point Rousse (taken from Cullen & Pittman, 2018)

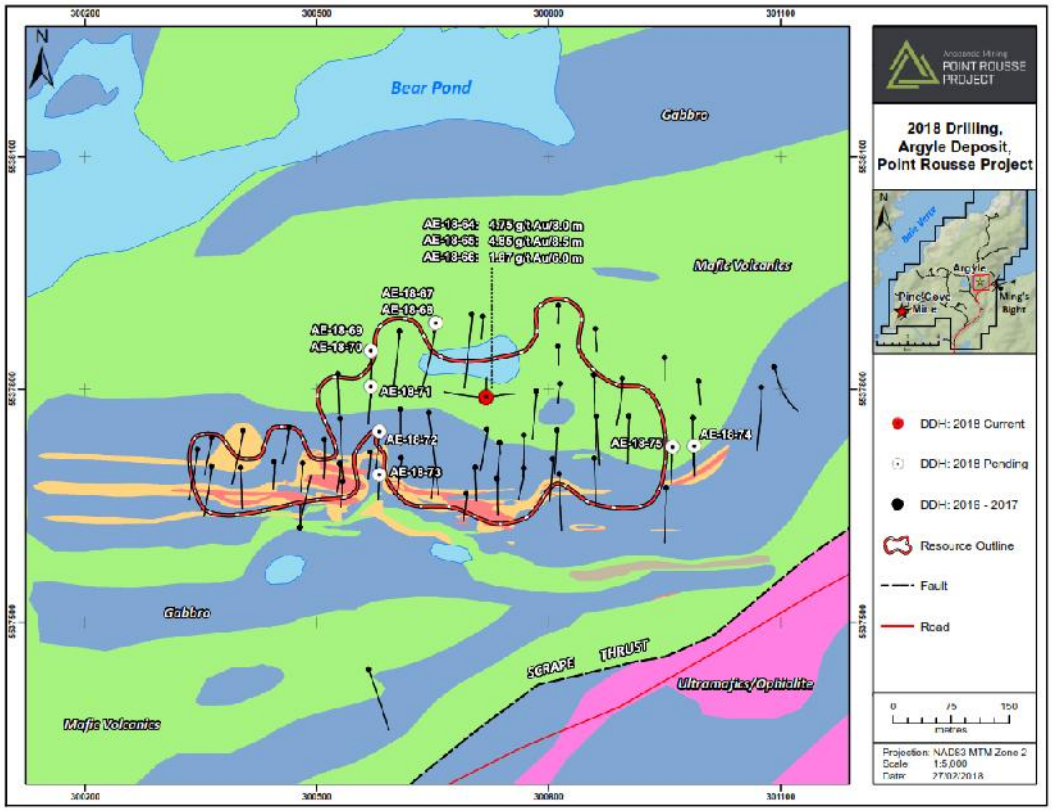

Figure 2 General Geology Plan, Argyle Deposit (provided by Anaconda)

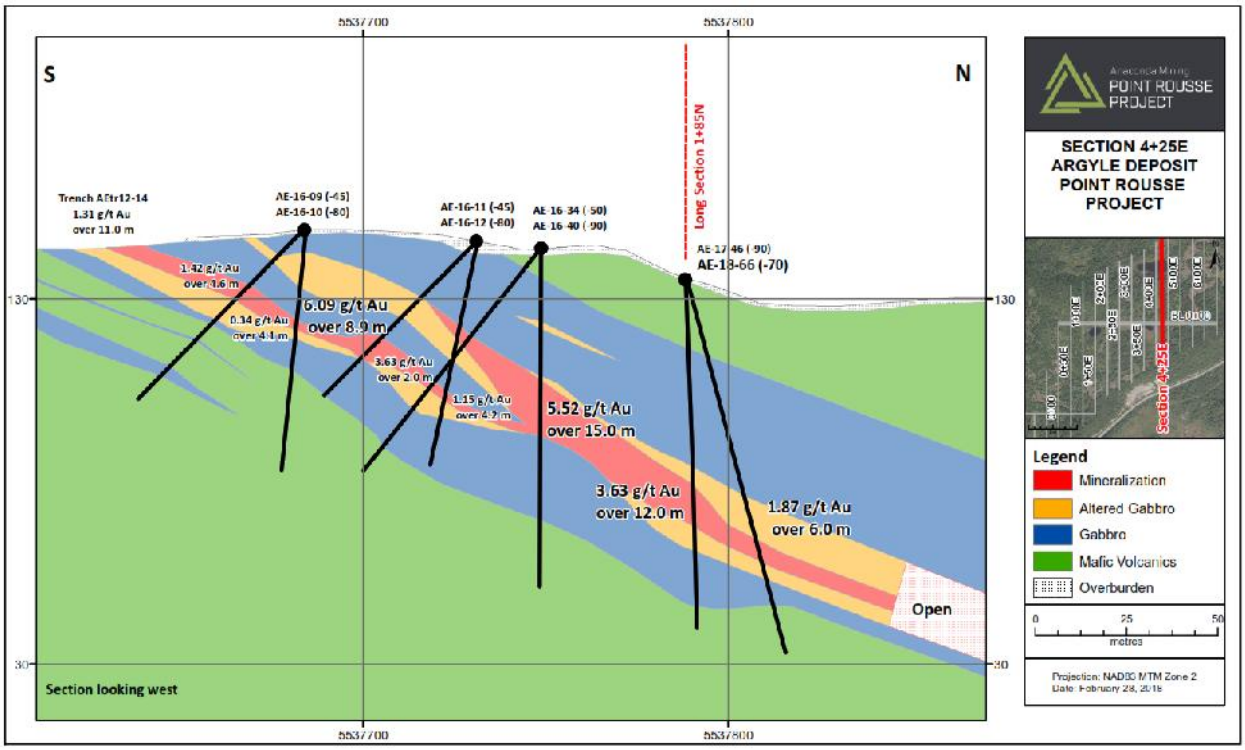

Figure 3 Cross Section, Argyle Deposit (provided by Anaconda)

It is understood by GEMTEC that the primary lithological units identified by Anaconda for the deposit are as follows:

- Un-mineralized mafic volcanic rocks (lapilli and ash tuff);
- Un-mineralized gabbro;
- Altered gabbro;
- Sub-grade mineralized gabbro; containing <0.8% g/t Au; and,
- Ore (mineralized); containing >0.8 g/t Au

The primary features of the Argyle Project will include ore extraction from two open pits, the Argyle West Pit and the Argyle East Pit, and stockpile areas for waste rock, and temporary storage of ore material. Note the ore will be transported to Anaconda's existing Pine Cove Mill, approximately 6.5 km from the Argyle property, for processing, and the tailings material produced from mill processing will be deposited in the already-permitted Pine Cove In-Pit Tailings Facility, using a sub-aqueous disposal method. The deposit's lithological units described above, and with different characteristics with respect to metal leaching and ARD potential, will be exposed, excavated, deposited sub-aqueously or in stockpiles, and/or used for construction as part of the Argyle Project, and will make up the various mine components (i.e., mill/tailings, waste rock, temporary stockpiles, and pit wall rock).

Table 1 summarizes the major lithological units for the Argyle Project along with their constituent rock types, relating mine components, and preliminary estimated percentage of total material to be excavated from the pits.

Based on information provided by Anaconda, the waste rock that will be generated during mining operations is estimated to represent 90% of the pit volume for the Argyle East Pit, and 72% for the Argyle West Pit, and will comprise un-mineralized mafic volcanic, and unaltered, altered and sub-grade mineralized gabbro lithologies. The ore is classified as mineralized host gabbro containing gold concentrations with a cut-off grade of 0.8 g/t, and represents 10% of the pit volume in the Argyle East Pit, and 28% in the Argyle West Pit.

Table 1 Summary of Major Lithological Units for Argyle Project

Lithological Unit	Lithocode (Block Model)	Constituent Rock Type	Mine Component	% Total Pit Volume	
				East Pit	West Pit
Mafic Volcanics	1L/1T	Lapilli and ash tuff	Waste rock / pit wall rock	11	1
Un-altered Gabbro	6G	Un-altered gabbro	Waste rock / pit wall rock	62	43
Altered Gabbro	6Galt	Altered gabbro	Waste rock / pit wall rock	17	28
Sub-grade mineralized gabbro*	6Galt	Sub-grade mineralized gabbro	Waste rock / pit wall rock	-	-
			Waste Rock Total	**90**	**72**
Ore	6Galt	Mineralized Gabbro	Ore & tailings / temporary stockpile / pit wall rock	10	28
			Ore Total	**10**	**28**
			Pit Volume Total	**100**	**100**

Note:
*The pit volume of the sub-grade mineralized gabbro is included in the altered gabbro estimate.

2.0 ML/ARD SAMPLING PROGRAM

The ML/ARD sampling program for the Argyle Project was carried out by Anaconda, and samples were selected for testing based on exploration and mine planning information for the Project. GEMTEC was not involved in the selection of samples for ML/ARD testing as part of this program.

Based on information provided by Anaconda, samples were selected to provide an overall characterization of ML/ARD potential in the major lithological units and the various mine project components (i.e., tailings, waste rock, and pit walls), and focused on providing good spatial and volumetric representation within the two pits.

Figure 2 provides a site plan showing the locations of the drill holes sampled as part of the sampling program. Representative longitudinal and cross sections showing geological and deposit data for the sampled drill holes were provided by Anaconda and are provided in Appendix A.

The samples were collected from five (5) drill holes, including:

- Drill holes AE-16-03 and AE-16-19, located within the Argyle West Pit;
- Drill holes AE-16-11 and AE-16-17, located within the Argyle East Pit; and,
- Drill hole AE-16-43, located in the general mine site area, approximately 50 m east of the Argyle east Pit.

It is understood that Anaconda selected the samples so that they were spaced vertically within each borehole to provide a reasonable representation of the major lithological units at each location. The samples collected as part of the sampling program represent material classified as either ore or waste rock. In addition, a number of samples collected from upper sections of drill holes AE-16-03 and AE-16-19 in the Argyle West Pit, and from the lower section of drill hole AE-16-11 in the East Argyle Pit are also representative of material that will remain along the pit walls in these areas following abstraction.

In total 20 samples were collected for the Argyle project for ML/ARD laboratory testing, as further described below.

Ore Samples

A total of three (3) ore samples were sent for laboratory analysis and are detailed in Table 2; including:

- Argyle East Pit - two (2) samples collected, including one (1) each from drill holes AE-16-11 and AE-16-17. These samples are located within the pit and represent the ore material that would be transported to the mill for processing.
- General Mine Site – one (1) sample that represents ore material from the location of AE-16-43, in the general mine site area approximately 50 m east of the Argyle East Pit.

It is understood that no ore samples were collected from the Argyle West Pit.

Table 2 Ore Samples Selected for ML/ARD Characterization

Project Area	Drill Hole ID	Sample Number	Mine Component	Au (g/t)
East Pit	AE-16-11	AE-ARD-005	Ore	5.619
	AE-16-17	AE-ARD-015	Ore	0.816
West Pit	-	-	-	-
General Mine Site	AE-16-43	AE-ARD-009	Ore	3.990

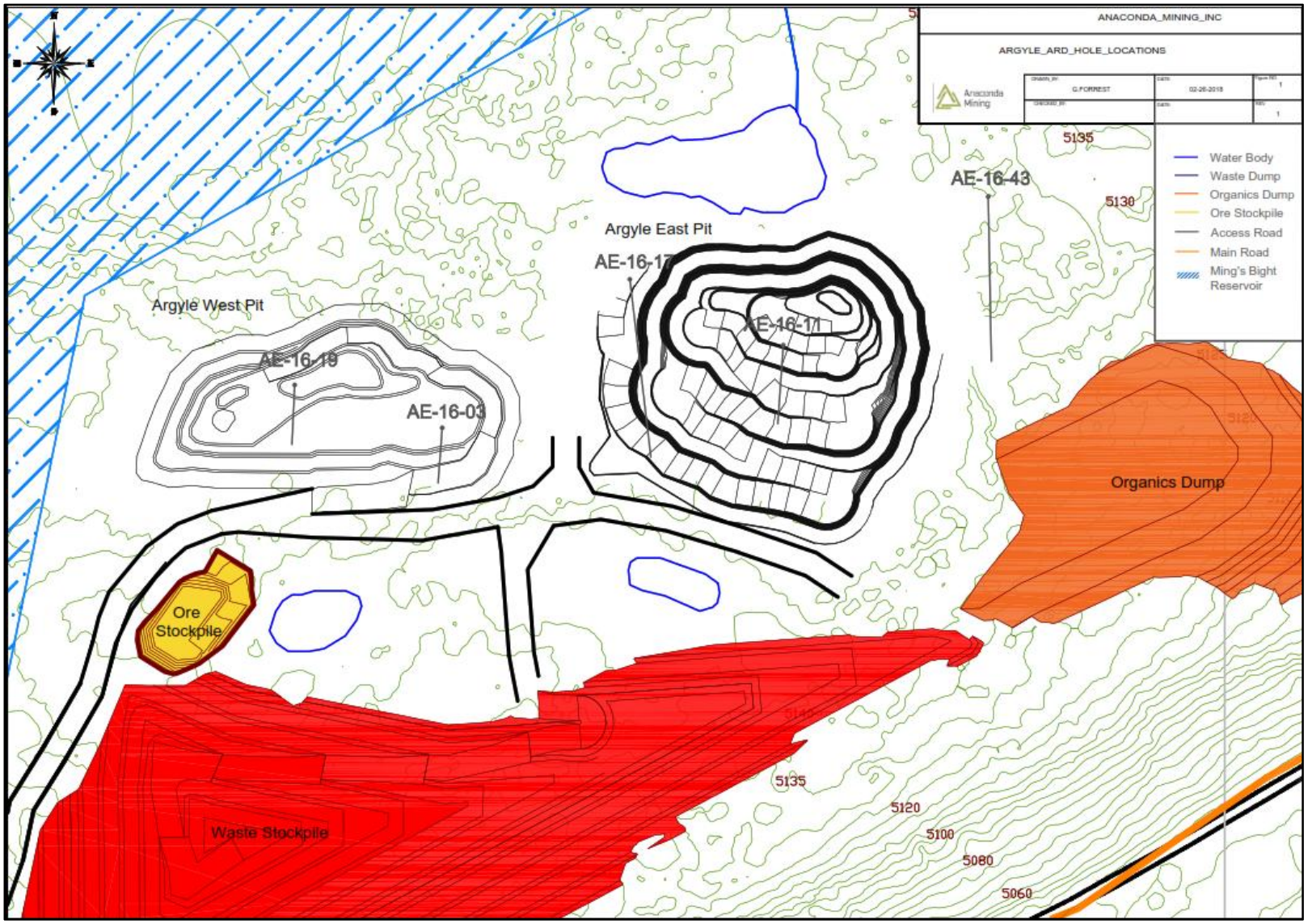

Figure 4 Site Plan showing the location of drill holes sampled during the ML/ARD sampling program (provided by Anaconda, 2018)

Waste Rock Samples

A total of 17 waste rock samples were collected and sent for laboratory analysis as part of the sampling program. These are detailed in Table 3, and include:

- Argyle East Pit – Six (6) samples, including two (2) samples each of the mafic volcanics, unaltered gabbro, and altered gabbro from within the pit that will be stored on the waste rock pile.

- Argyle West Pit – Eight (8) samples, including two (2) samples each of the mafic volcanics, unaltered gabbro, and altered gabbro, as well as two (2) samples of the altered gabbro containing sub-grade mineralization from within the pit that will be stored on the waste rock pile.

- General Mine Site – three (3) samples that represent mafic volcanics, unaltered gabbro, and altered gabbro waste rock material from the location of AE-16-43, in the general mine site area approximately 50 m east of the Argyle East Pit. .

Table 3 Waste Rock Samples Selected for ML/ARD Characterization

Project Area	Drill Hole ID	Sample Number	Lithological Unit	Mine Component	Au (g/t)
East Pit	AE-16-11	AE-ARD-006	Altered Gabbro	Waste	<0.005
		AE-ARD-007	Unaltered Gabbro	Waste	0.006
		AE-ARD-008	Ash Tuff	Waste	<0.005
	AE-16-17	AE-ARD-013	Unaltered Gabbro	Waste	<0.005
		AE-ARD-014	Altered Gabbro	Waste	0.029
		AE-ARD-016	Lapilli Tuff	Waste	0.010
West Pit	AE-16-03	AE-ARD-001	Lapilli Tuff	Waste	0.008
		AE-ARD-002	Sub-grade Mineralized Gabbro	Waste	0.141
		AE-ARD-003	Altered Gabbro	Waste	0.213
		AE-ARD-004	Unaltered Gabbro	Waste	0.026
	AE-16-19	AE-ARD-017	Sub-grade Mineralized Gabbro	Waste	0.018
		AE-ARD-018	Altered Gabbro	Waste	0.266
		AE-ARD-019	Unaltered Gabbro	Waste	<0.005
		AE-ARD-020	Lapilli Tuff	Waste	0.017

General Mine Site	AE-16-43	AE-ARD-010	Altered Gabbro	Waste	0.055
		AE-ARD-011	Lapilli Tuff	Waste	0.123
		AE-ARD-012	Unaltered Gabbro	Waste	0.012

Pit Wall Rock Samples

A number of samples collected from upper sections of drill holes AE-16-03 and AE-16-19 in the Argyle West Pit, and from the lower section of drill hole AE-16-11 in the East Argyle Pit are also representative of material that will remain along the pit walls in these areas following abstraction. These include:

- Argyle East Pit – One (1) sample (AE-ARD-005) that represents the ore material collected in drill hole AE-16-11.
- Argyle West Pit – Four (4) samples, including one (1) sample (AE-ARD-002) that represents waste rock material collected in drill hole AE-16-03; and three (3) samples (AE-ARD-017 to AE-ARD-019) that represent waste rock material collected in drill hole AE-16-19.

Further, based on provided geological and deposit data, it is expected that the ore and waste rock lithologies sampled during the current sampling program extend to the limits of the pit, and can be used to characterize similar geological materials along the pit walls.

3.0 STATIC ML/ARD TESTING

All 20 samples collected by Anaconda during the ML/ARD sampling program were submitted to RPC Science and Engineering (RPC) in Fredericton, New Brunswick for the following laboratory analysis:

- Total sulphur and sulphate sulphur speciation analysis to determine sulphide sulphur content, by the difference between the two;
- Total inorganic carbon analysis to determine carbonate content;
- Whole rock analysis by XRF;
- Acid Base Accounting (ABA) using the Modified Sobek method; and,
- Multi-element (trace metals) analysis by ICP-OES scan.

3.1 ML/ARD Assessment Methodology

ARD potential for the major lithological units and mine components for the Project was evaluated using ABA by the modified Sobek method and the total sulphur analysis. The ability of the rock to generate acid is a function of the balance between the potentially acid producing (sulphide) minerals and the potential acid consuming minerals. As such ABA analysis is based on the neutralization potential (NP) of a rock assuming the neutralizing minerals react like calcium carbonate, and the acid potential (AP) of a rock assuming all sulphide minerals react like pyrite.

The net neutralization potential (NNP), or acid/base account is determined by subtracting the AP from the NP (NNP = NP - AP). A ratio of NP to AP (NPR) is also used. An NNP of 0 is equivalent to an NP/AP ratio of 1. Units for static test results (AP, NP, NPR and NNP) are expressed in mass (kg) of calcium carbonate ($CaCO_3$) per tonne. The criteria of NP/AP <1 and NNP <-20 are commonly applied to classify a rock material as potentially acid generating (PAG); the criteria at 1<NP/AP<2 and –20<NNP<20 is applied to classify a rock material as uncertain with respect to acid generation potential; and the criteria of NP/AP>2 and NNP>20 is applied to classify a rock material as non-acid generating (NAG) (MEND, 2009).

3.2 Results

The results of the static testing are summarized in Table 4, and the detailed analytical results are provided in Tables B.1 through Table B.3 in Appendix B. The RPC laboratory reports are provided in Appendix C.

3.2.1 Sulphur Abundance and Speciation

The results of the total sulphur and sulphate sulphur speciation analysis are summarized by lithological unit and mine component in Table 4, and detailed results are presented in Table B.1 in Appendix B. The concentration of total sulfur in the samples analyzed showed a wide variation in values, ranging from <0.007% to 6.8%.

A comparison of the total sulphur concentrations with the analytical results for sulphur speciation indicates that the dominant sulphur species is sulphide, with sulfide typically representing approximately 97% of the total sulphur content in the samples. Further, based on provided geological and deposit data, pyrite is largely the sole sulphide mineral associated with the deposit. The measured total sulphur content in the samples was used to define its AP value in the ABA analysis, and is considered a reasonable estimate of AP given that sulfide is the dominant sulfur species and almost entirely comprises pyrite in the samples.

Table 4 Summary of Acid-Base Accounting Data and Metals Concentrations for the Argyle Project

Lithology	Mine Component	Statistic	Au (g/tonne)	Paste pH	Total Sulphur (Wt.%)	Total Inorganic Carbon (Wt.%)	Acid Production Potential (AP)	Neutralizing Potential (NP)	Net NP (NNP)	NP/AP (NPR)	ARD Classification	Ag	As	Cd[1]	Cr	Cu	Fe	Mo	Ni	Pb	Se[1]	Tl[1]	Zn
Lapilli Tuff (1L) / / Ash Tuff (1T) (n=5)	Waste Rock/ Pit Wall	Min	0.005	9.0	0.007	0.29	0.2	37.6	36.5	23.1	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Median	0.010	9.3	0.035	0.42	1.1	55.6	53.2	35.6	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Max	0.123	9.7	0.085	1.56	2.7	94.7	92.0	343.0	NAG	-	-	-	-	-	-	-	-	-	-	-	-
Unaltered Gabbro (6G) (n=5)	Waste Rock/ Pit Wall	Min	0.005	9.1	0.021	0.04	0.7	10.7	5.8	2.2	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Median	0.006	9.2	0.075	0.11	2.3	17.0	15.5	24.6	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Max	0.026	9.3	0.158	1.72	4.9	96.8	95.0	51.6	NAG	-	-	-	-	-	-	-	-	-	-	-	-
Altered Gabbro (6Galt) (n=5)	Waste Rock/ Pit Wall	Min	0.005	8.8	0.011	0.27	0.3	75.8	72.9	7.6	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Median	0.055	9.2	0.064	0.44	2.0	79.1	76.1	39.5	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Max	0.266	9.4	0.352	0.91	11.0	103.5	103.2	301.1	NAG	-	-	-	-	-	-	-	-	-	-	-	-
Mineralized Gabbro (6Galt) (n=2)	Waste Rock/ Pit Wall	Min	0.018	8.9	0.134	0.09	4.2	71.0	66.3	15.0	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Median	0.080	8.9	0.143	0.26	4.5	74.1	69.6	16.7	NAG	-	-	-	-	-	-	-	-	-	-	-	-
		Max	0.141	8.9	0.151	0.42	4.7	77.2	73.0	18.4	NAG	-	-	-	-	-	-	-	-	-	-	-	-
All Waste Rock Lithologies (n=17)	Waste Rock/ Pit Wall	Min	0.005	8.8	0.007	0.04	0.2	10.7	5.8	2.2	NAG	<0.1	<1	<5	28	<1	45,559	<1	2.3	<5	<5	<5	46
		Median	0.017	9.2	0.072	0.06	2.3	75.8	73.0	34.4	NAG	0.1	4	<5	111	30	73,152	0.5	26.5	2.5	<5	<5	69
		Max	0.266	9.7	0.352	0.40	11.0	103.5	103.2	343.0	NAG	**0.622**	**29**	**6.2**	349	**330**	96,079	1.8	161.3	7.2	<5	<5	130
Ore (n=3)	Mill & Tailings / Pit Wall	Min	0.816	8.9	0.229	0.05	7.2	42.2	-140.7	0.3	PAG	<0.2	2	<5	47	6	13,348	1.1	1.2	<5	<5	<5	21
		Median	3.990	9.0	1.610	0.10	50.3	71.8	24.4	1.5	uncertain	**0.77**	**62**	<5	50	7	56,931	1.8	2.5	5.5	<5	<5	45
		Max	5.617	9.0	6.800	0.25	212.5	74.7	35.0	5.9	NAG	**1.87**	**116**	<5	65	41	65,357	2.9	5.0	8.3	<5	<5	52

Notes:
Elements greater than 5XCA are bolded and underlined. Median determined using one-half detection limit for censored data.
1 = Reportable detection limit exceed 5XCA

3.2.2 Total Inorganic Carbon Analysis and Whole Rock Analysis

The results of the total inorganic carbon analysis are summarized by lithological unit and mine component in Table 4, and detailed results are presented in Table B.1 in Appendix B. The analyses indicated that the inorganic carbon content showed a wide variation in values, ranging from 0.04% to 1.72%.

The measured total inorganic carbon concentrations can also be used to calculate a neutralizing capacity for the samples (Total Carbon NP), and can be compared to the determined Modified Sobek NP to better understand the mineralogy contributing to the NP of the rock. A scatterplot of Total Carbon NP (converted to the same units $CaCO_3$ kg/t) and Modified Sobek NP provided in Figure 5 shows that the Total Carbon NP is greater than the Modified Sobek NP for the majority of the samples. Although no information was provided with respect to the carbonate mineralogy of the samples, this discrepancy in the NP estimates is thought to be attributed to the presence of iron carbonate mineralogy, mainly siderite, which is not an effective neutralizer, since the neutralized acid is released again by Fe(II) oxidation and subsequent hydrolysis, thus resulting in no net neutralization. Therefore the Modified Sobek NP is considered a more conservative and

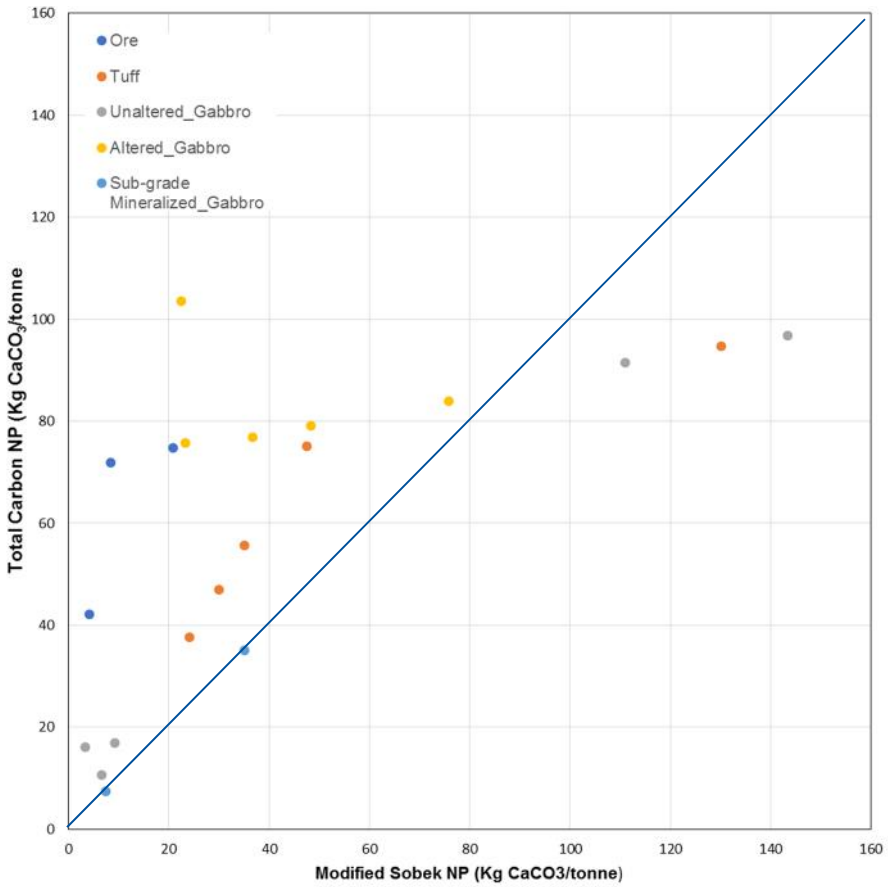

Figure 5 Scatter plot showing Total Carbon NP versus Modified Sobek NP for the samples.

realistic estimate of the sample's neutralization potential for ABA tests and ARD classification carried out as part of this assessment.

The results of the whole rock analysis by sample are presented in Table B.2 in Appendix B. Whole rock analyses confirmed the bulk composition of the lithological units, and indicated typical concentrations of the neutralizing cations (Na, K, Mg, Ca, Mn) associated with mafic volcanic and intrusive rocks. Whole rock geochemical analysis on its own, without supporting mineralogical data, does not allow for a detailed analysis of the mineral constituents influencing the AP and NP of the samples.

3.2.3 Acid – Base Accounting (ABA Results)

The results of the ABA analysis, including calculated NPR ratios and NNP values, are summarized by lithological unit and mine component in Table 4, and complete results by sample are presented in Table B.1 in Appendix B.

The measured paste pH values for all of the samples were above 7 indicating that all of the lithological units are currently non-acidic, returning values ranging from 8.8 to 9.7 and a median paste pH of 9.2.

An estimation of the potential future net acid drainage of the presently alkaline geological material in the Project area, and more specifically within the pits, was predicted using the ABA results.

For all of the samples, the ABA results show NPR ratios ranging from 0.3 to 343.0, and NNP values ranging from -140.7 to 103.2.

The three (3) ore samples showed separate ARD classification results with one (1) sample collected from the Argyle East Pit (i.e., AE-ARD-005) determined to be PAG (i.e., NP/AP ratio of 0.3), one (1) sample collected from the Argyle East Pit (AE-ARD-015) determined to be NAG (i.e., NP/AP of 5.9), and one (1) sample collected from the general mine site (i.e., AE-ARD-009) returning an NP/AP ratio value of 1.5 and thus classified as "uncertain". Based on the ABA results, as a whole the ore material for the Project is considered to have an "uncertain" classification with respect to its acid generating potential. Note ABA analysis was not performed on any ore samples collected from the Argyle West Pit. The NNP values for the ore samples generally support the NPR results, returning a median value of 24.4, which suggest that the material is only mildly alkaline and has the potential to either become acidic or remain neutral depending on the relative reactivity of the sulphide and NP mineral constituents.

The waste rock material had a median NPR of 34.4, which suggests that as a whole this material is considered NAG. The altered gabbro showed the largest variation in NPR values ranging from 7.6 to 301.1; while the mineralized gabbro showed the lowest overall median value of 16.7. The NPR results did not vary significantly between the different waste rock lithological units.

The NNP values for the waste rock material ranged from 5.8 to 103.2 and with a median of 73 suggesting that the material is mildly to moderately alkaline generating.

3.2.4 Multi-Element ICP-OES Analysis

The purpose of this analysis is to determine the concentrations of a suite of metals that may provide an indication of the leaching potential of the lithological units present in the pit and associated with the various mine project components. Concentrations of metals can be compared to average crustal abundances of these elements to highlight potential enriched metal concentrations that may be a ML concern as a result of in-situ weathering of the rock. In order to determine potential metals enrichment and ML concerns for the Project, the analytical results for the Canadian Counsel of Ministers of the Environment (CCME) regulated metals (arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), lead (Pb), molybdenum (Mo), Nickel (Ni), selenium (Se), silver (Ag), thallium (Tl) and zinc (Zn)) were compared to five (5) times their normal crustal abundance. Note mercury (Hg) is also a regulated metals parameter but was not analyzed as part of the current sampling program.

The results of the multi-element analysis for the above CCME regulated metals are summarized by mine component in Table 4, and complete results by sample are presented in Table B.3 in Appendix B. The bold numbers in the tables indicate values that are greater than five (5) times the concentration in typical crustal rock (provided in Rudnick and Gao, 2003). For the ore, Ag and As had mean concentrations that exceeded five (5) times crustal concentrations. In addition, exceedances in Ag and As were noted in a number of waste rock samples and Cd and Cu were also noted in a number of individual samples from the various lithological units.

The reported detection limits were greater than the five (5) times crustal concentration values for Cd, Se, and TI, and therefore the ML potential for these metals could not be assessed.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the static ML/ARD sampling and testing program, GEMTEC provides the following conclusions:

- Ore ranges from PAG to NAG. It is understood that ore from this Project will be processed off site at Anaconda's existing Pine Cove mine operation, and the tailings material produced from mill processing will be deposited in an already-permitted tailings facility, using a sub-aqueous disposal method. However, planning for the Argyle project should account for management of PAG ore particularly within any temporary ore stockpiles to prevent any acid generation. Given the limited number of ore samples evaluated as part of the current program, further ML/ARD sampling and analysis is recommended, including from within the Argyle West Pit, to better characterize and quantify the PAG and NAG ore materials associated with the Project. This additional work will determine the complexity of the ML/ARD management requirements and whether design of the temporary ore

stockpiles should account for management of PAG rock to prevent any acid generation, and potential poor quality drainage.

- Waste rock is considered NAG, and is not expected to generate ML/ARD issues associated with storage on stockpiles and along pit wall exposures.

- Pit wall exposures are expected to be a mix of PAG and NAG rock, and management of the drainage in and out of the pit will be required, at least during operations. Given the relatively short life of the deposit, post closure flooding will prevent any acid generation if the flood level is expected to be at or near the crest. If sufficient flooding to cover the exposed PAG wall rock is not expected, long term drainage issues will need to be addressed.

- ML potential is primarily for As, Ag, Cd, and Cu based on the observed enrichment of these elements in the various lithological units. Segregation and management of ARD potential will result in a level of control of ML potential in the various pit rock materials as well; although ML generation can also be associated with neutral conditions and other weathering processes besides sulphide oxidation.

- It is recommended that additional ML/ARD test work for the ore material include kinetic testing (e.g. humidity cell testing or other appropriate methods) to determine such kinetic issues such as rates of reaction, time to onset of ARD and approximate length of time for ARD generation, as well as leachate quality. The information obtained from this kinetic testing will help with the design of the temporary ore storage stockpiles, and will allow for an estimation of the maximum periods of ore storage before onset of potential ML/ARDissues.

- GEMTEC can work with Anaconda's geological staff and engineering staff to provide additional recommendations for carrying out future sampling, testing and analysis programs at Anaconda's request. To assist in sample selection, it is recommended that the ABA test results from this sampling program be incorporated into the mine block model. This will allow for better quantification of PAG and NAG rock materials, as well as overall ML/ARD potential associated with the project, and highlight any lithologic and/or mine component rock materials that require further spatial and geochemical characterization as part of future sampling programs.

5.0 CLOSURE

We trust this preliminary report meets your present requirements. Should any additional information be required, please do not hesitate to contact our office at your convenience.

Sincerely,

GEMTEC Consulting Engineers and Scientists Limited

DRAFT

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Carolyn Anstey-Moore, M.Sc., M.A.Sc., P.Geo.
Senior Environmental Geoscientist

6.0 REFERENCES

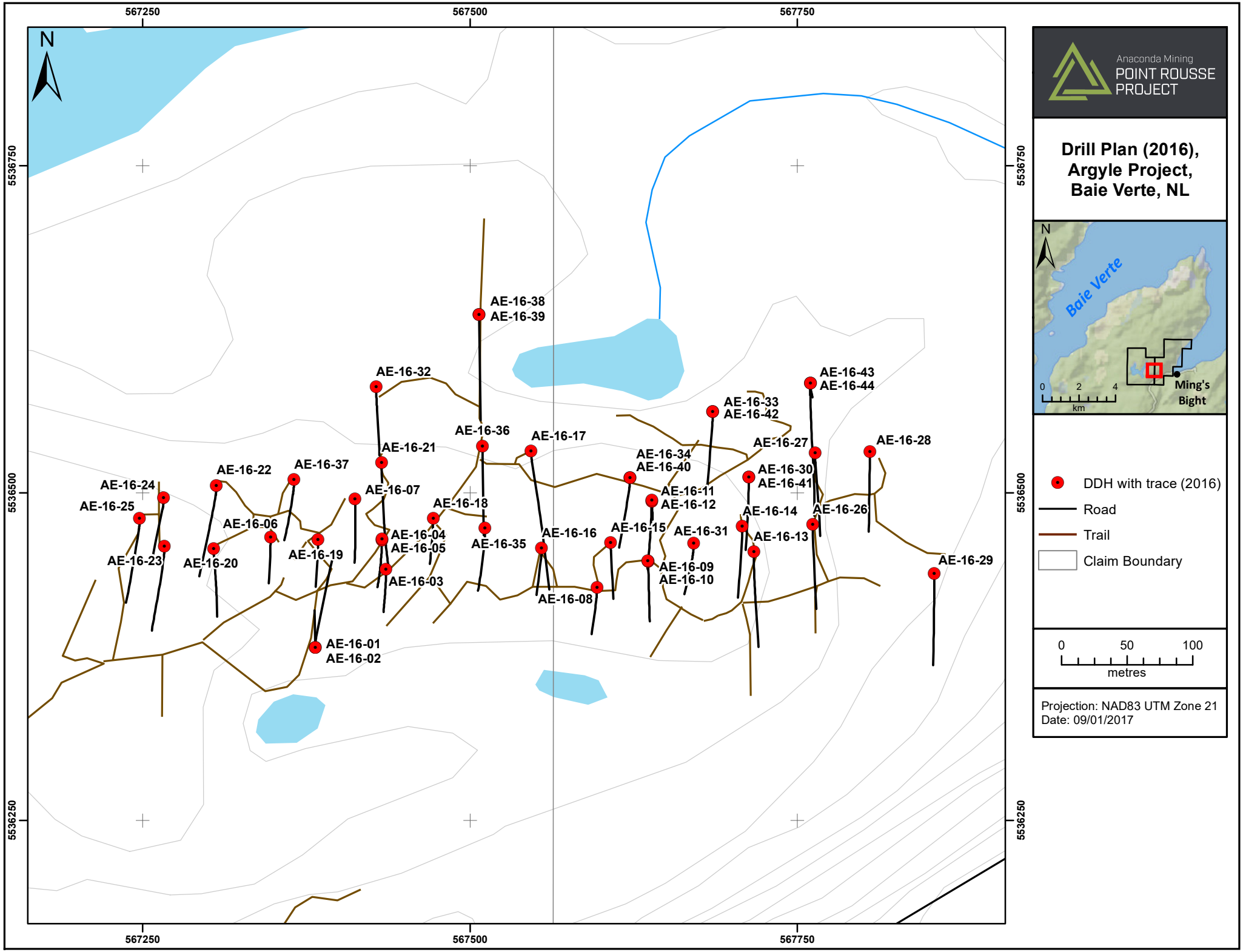
MEND, 2009: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1, 579

Cullen, M. and Pitman, C., 2018. NI 43-101 Technical Report, Mineral Resource and Mineral Reserve Update on the Point Rousse Project, Baie Verte, Newfoundland and Labrador, Canada. Effective Date: December 31, 2017. Published: February 22, 2018.

Rudnick, R.L. and Gao, S., 2003. The Composition of the Continental Crust. In: Holland, H.D. and Turekian, K.K., Eds., Treatise on Geochemistry, Vol. 3, The Crust, Elsevier-Pergamon, Oxford, 1-64.

APPENDIX A

Client Provided Drill Hole Sections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AE-16-26
AE-16-15
AE-16-31
AE-16-13
AE-16-09
AE-16-10
AE-16-29
Anaconda Mining
POINT ROUSSE PROJECT
Drill Plan (2016), Argyle Project, Baie Verte, NL
Baie Verte
Ming's Bight
0 2 4
km
DDH with trace (2016)
Road
Trail
Claim Boundary
0 50 100
metres
Projection: NAD83 UTM Zone 21
Date: 09/01/2017

S

N

5537600 N

5537650 N

5537700 N

5537750 N

5537800 N

300450 E

50 m
AE-16-19

69 m
AE-16-37

Plan View

N

Cross-Section

150 RL

100 RL

0.005

0.010

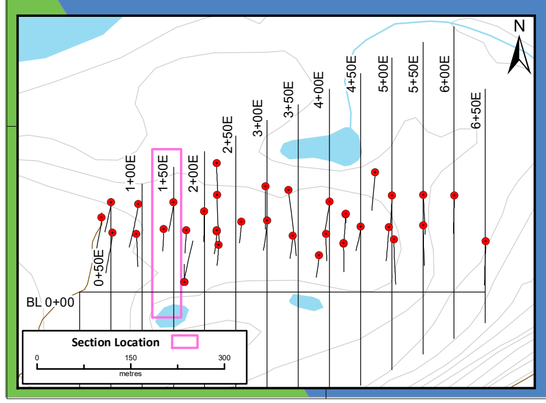
0.410

1.960

50 m
AE-16-19

69 m
AE-16-37

50 m



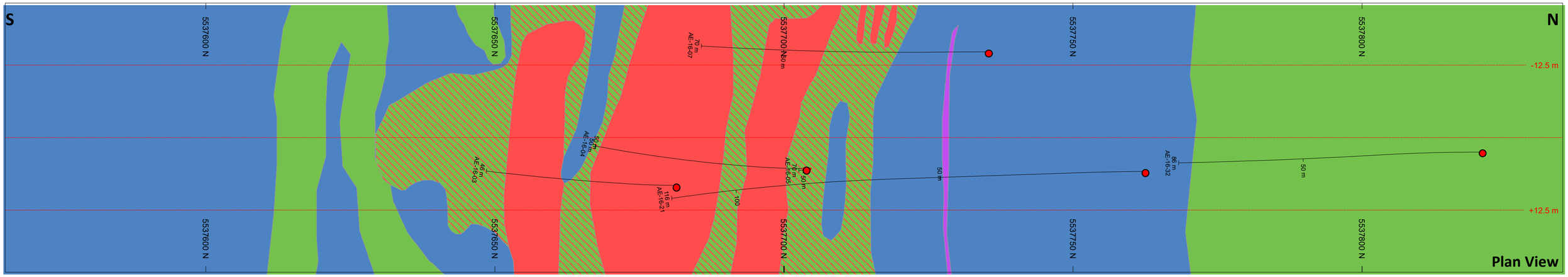
Anaconda Mining
POINT ROUSSE PROJECT

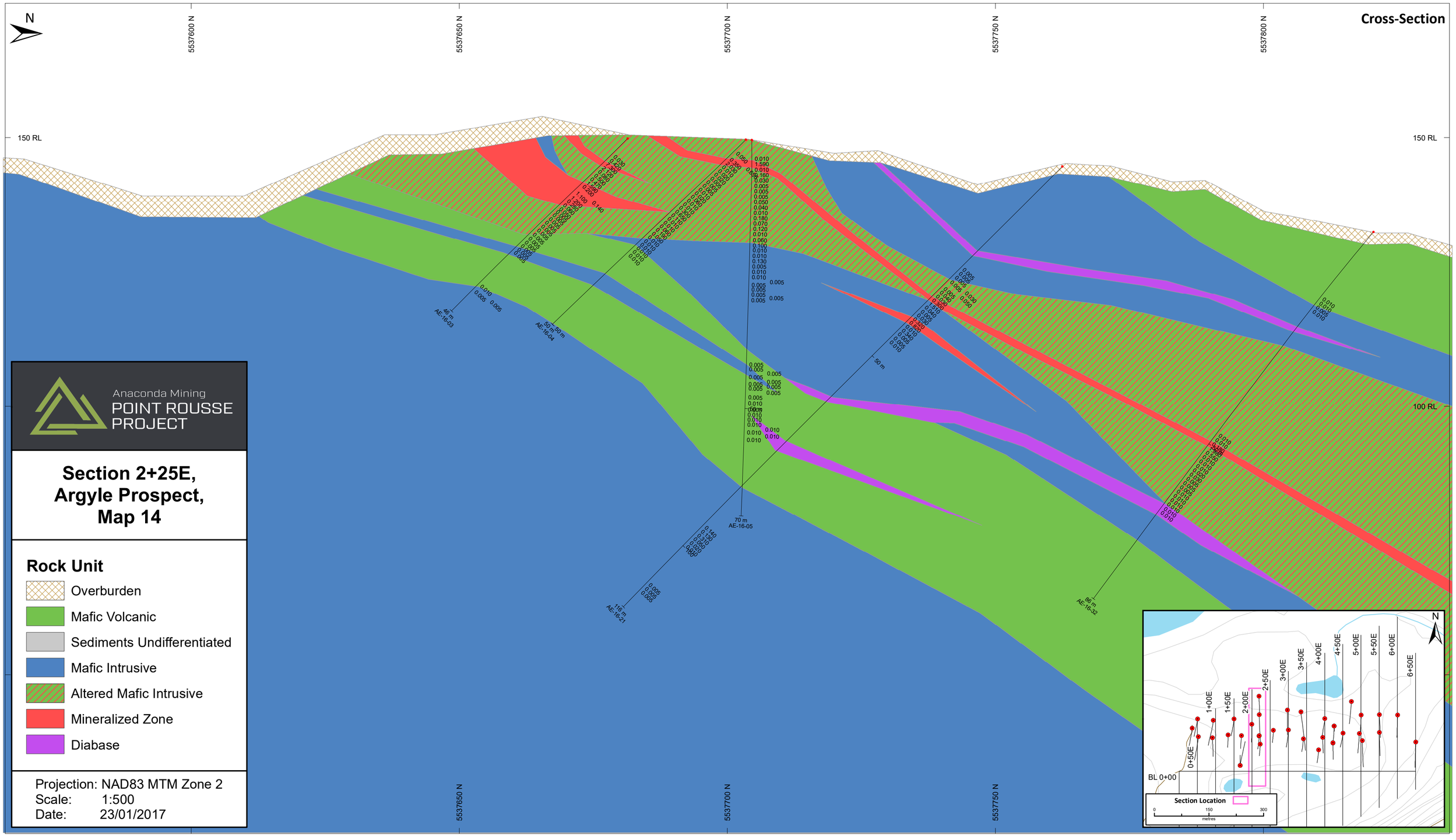
Section 1+50E, Argyle Prospect, Map 16

Rock Unit

- Overburden
- Mafic Volcanic
- Sediments Undifferentiated
- Mafic Intrusive
- Altered Mafic Intrusive
- Mineralized Zone
- Diabase

Projection: NAD83 MTM Zone 2
Scale: 1:500
Date: 23/01/2017





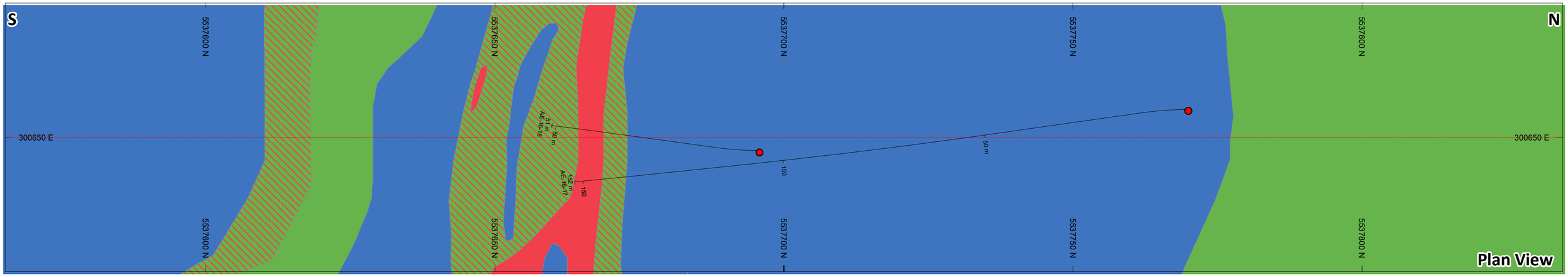
Anaconda Mining
POINT ROUSSE PROJECT

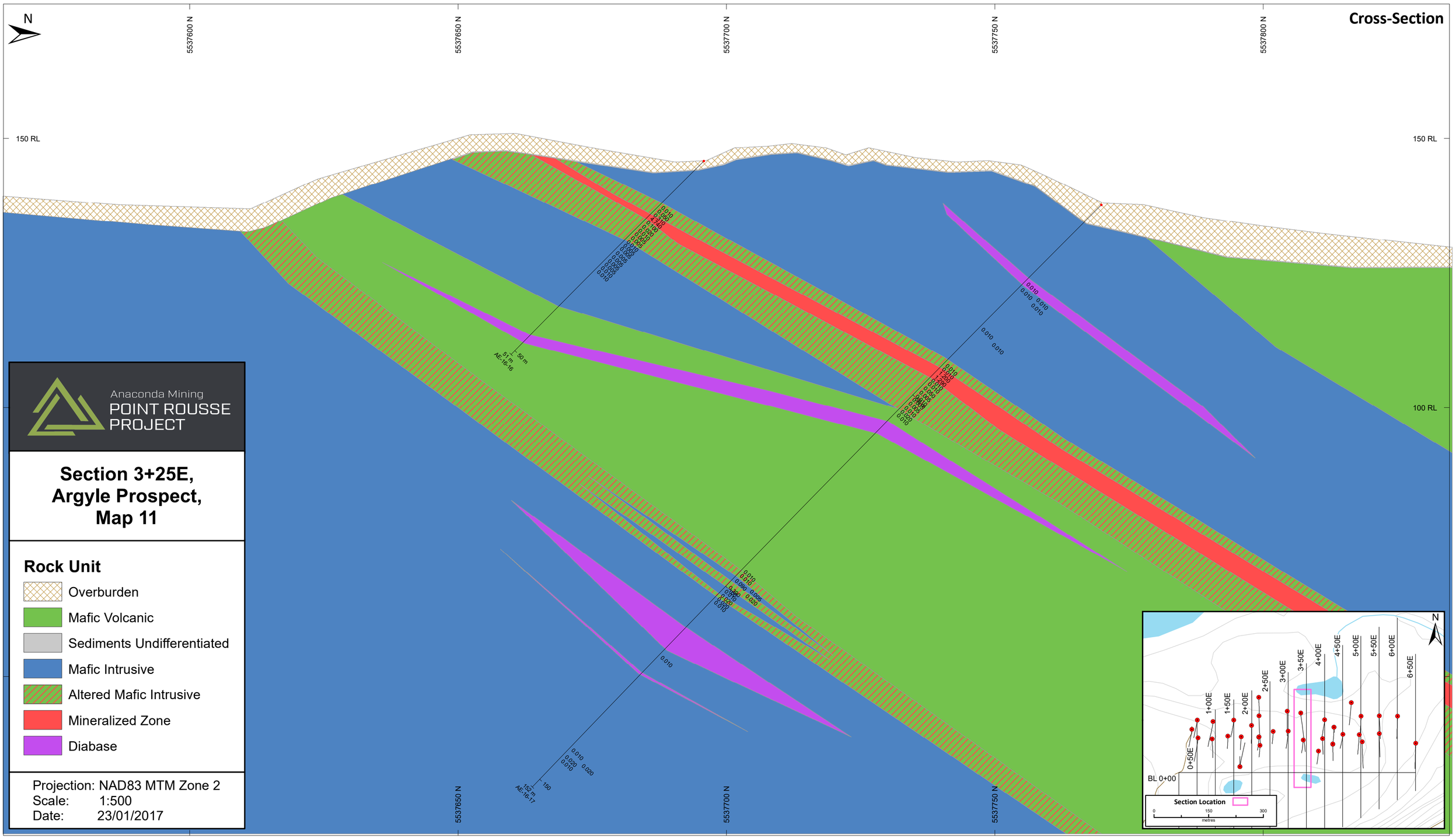
Section 2+25E, Argyle Prospect, Map 14

Rock Unit

- Overburden
- Mafic Volcanic
- Sediments Undifferentiated
- Mafic Intrusive
- Altered Mafic Intrusive
- Mineralized Zone
- Diabase

Projection: NAD83 MTM Zone 2
Scale: 1:500
Date: 23/01/2017





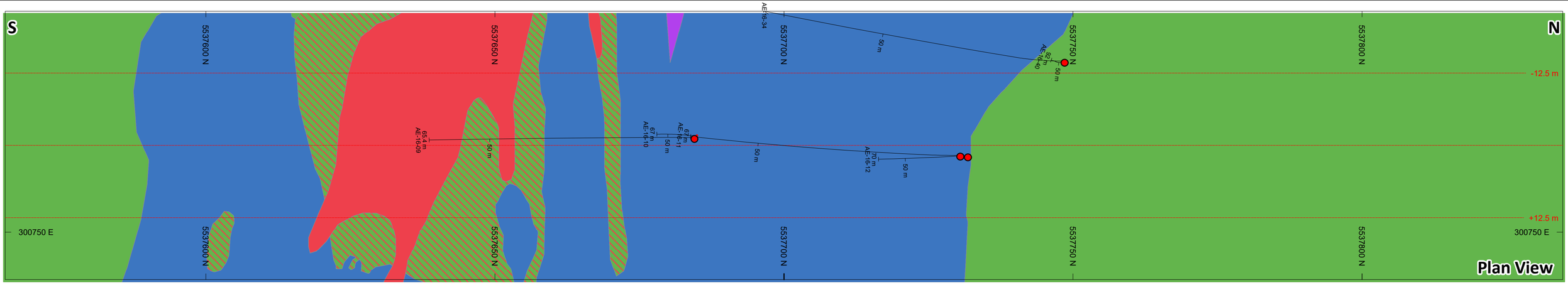
Anaconda Mining
POINT ROUSSE PROJECT

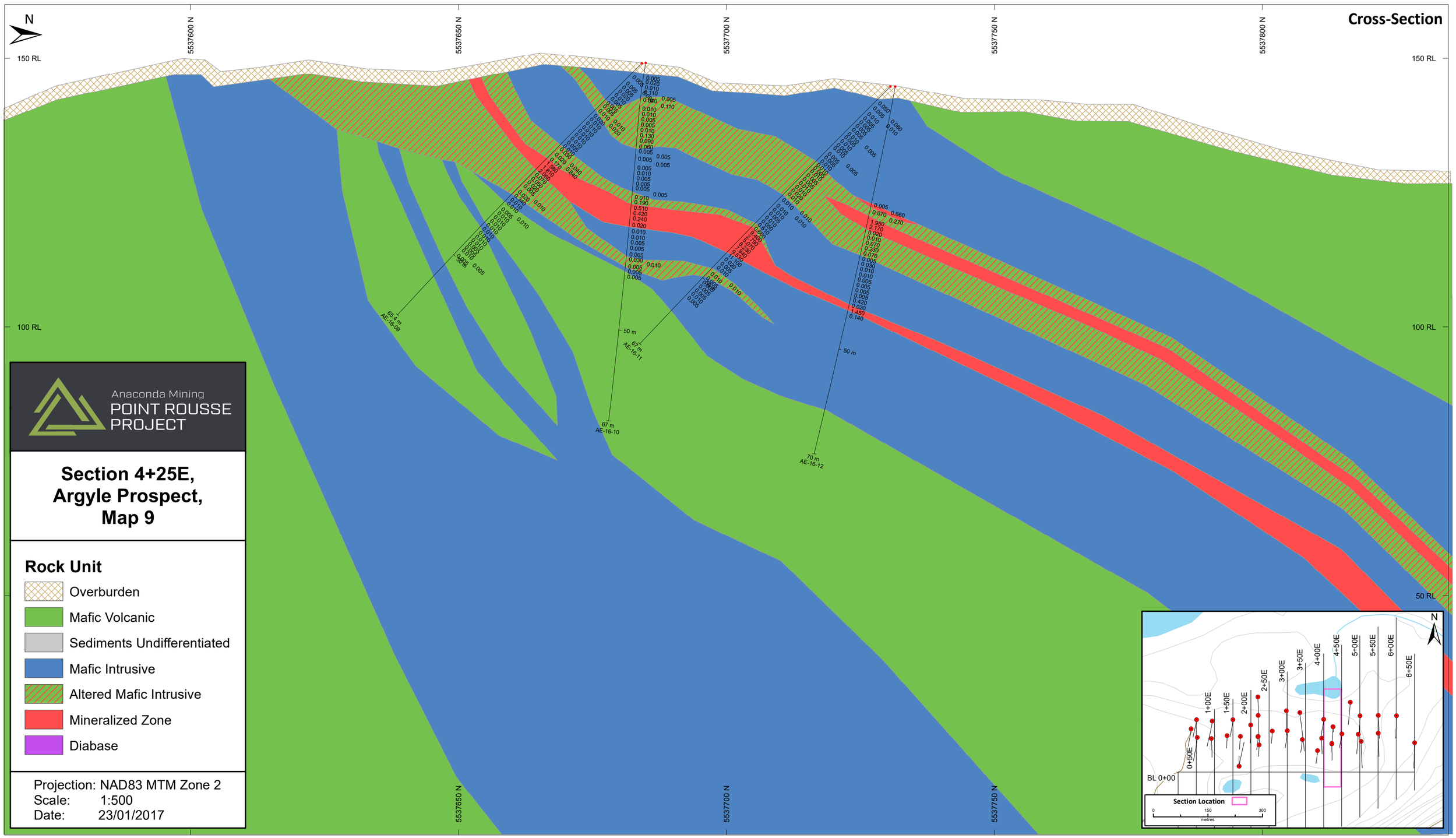
Section 3+25E, Argyle Prospect, Map 11

Rock Unit

- Overburden
- Mafic Volcanic
- Sediments Undifferentiated
- Mafic Intrusive
- Altered Mafic Intrusive
- Mineralized Zone
- Diabase

Projection: NAD83 MTM Zone 2
Scale: 1:500
Date: 23/01/2017





Anaconda Mining
POINT ROUSSE PROJECT

Section 4+25E, Argyle Prospect, Map 9

Rock Unit

- Overburden
- Mafic Volcanic
- Sediments Undifferentiated
- Mafic Intrusive
- Altered Mafic Intrusive
- Mineralized Zone
- Diabase

Projection: NAD83 MTM Zone 2
Scale: 1:500
Date: 23/01/2017

S

N

300850 E

300850 E

5537650 N

5537700 N

5537750 N

5537800 N

5537850 N

95 m
AE-16-26

50 m

134 m
AE-16-43

50 m

100

50 m

143 m
AE-16-44

50 m

100

101 m
AE-16-27

100

50 m

Plan View

N

Cross-Section

100 RL

50 RL

50 m

50 m

50 m

0.040
0.500
0.010
0.010

0.005
0.010
0.005
0.010
0.010
0.020
0.005
0.010
0.005
0.010
0.020
0.020
2.440

0.010
0.010
0.010
0.030
0.120
1.900
0.010
0.010

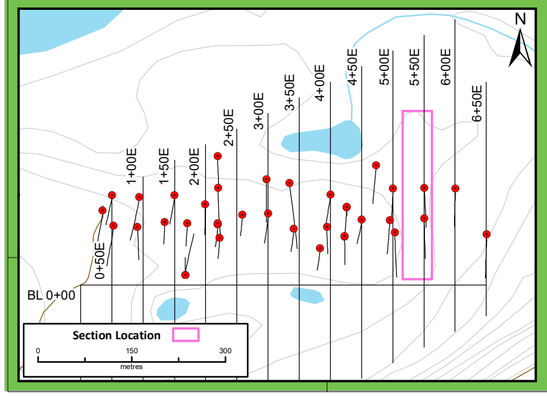
0.010
0.010
0.005

95 m
AE-16-26

101 m
AE-16-27

134 m
AE-16-43

143 m
AE-16-44



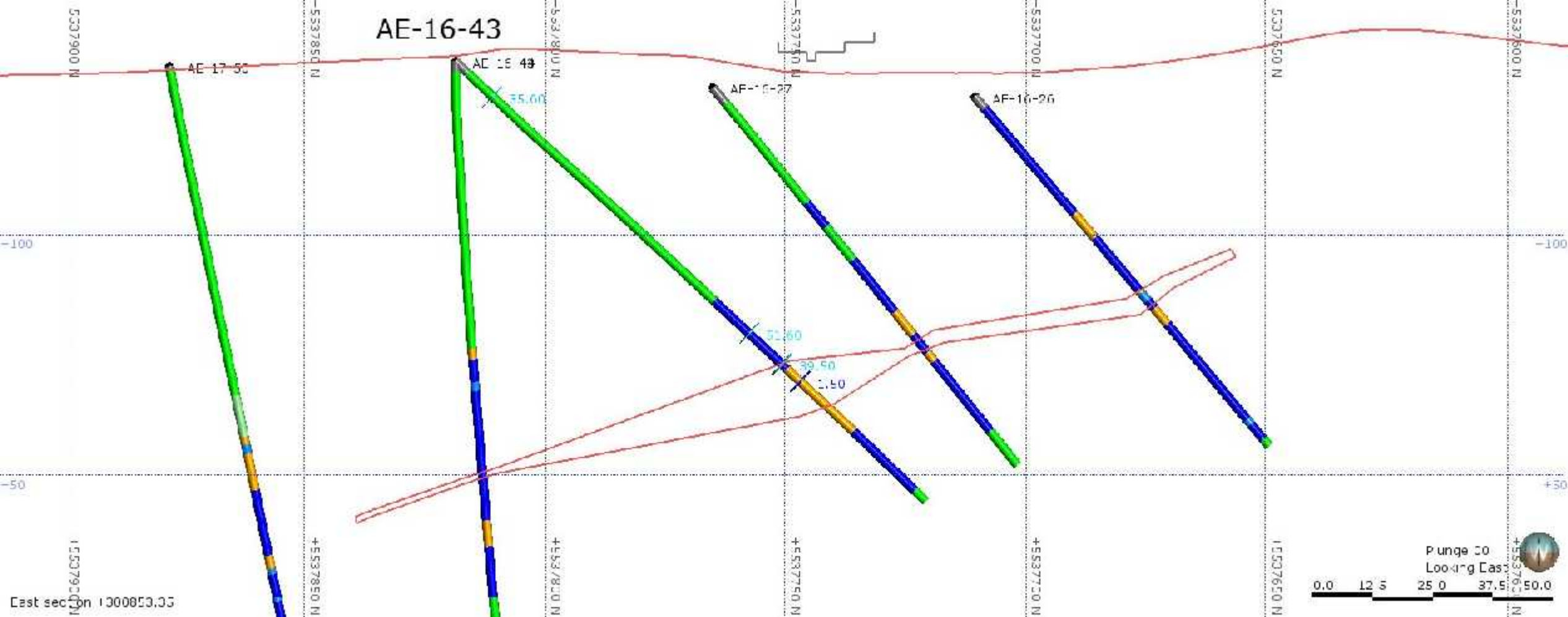
Anaconda Mining
POINT ROUSSE PROJECT

Section 5+25E, Argyle Prospect, Map 6

Rock Unit

- Overburden
- Mafic Volcanic
- Sediments Undifferentiated
- Mafic Intrusive
- Altered Mafic Intrusive
- Mineralized Zone
- Diabase

Projection: NAD83 MTM Zone 2
Scale: 1:500
Date: 23/01/2017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52.60
39.50
2.50
5537900 N
5537850 N
5537800 N
5537750 N
5537700 N
5537650 N
5537600 N
-100
-50
+50
Plunge 20
Looking East
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12.5
25.0
37.5
50.0
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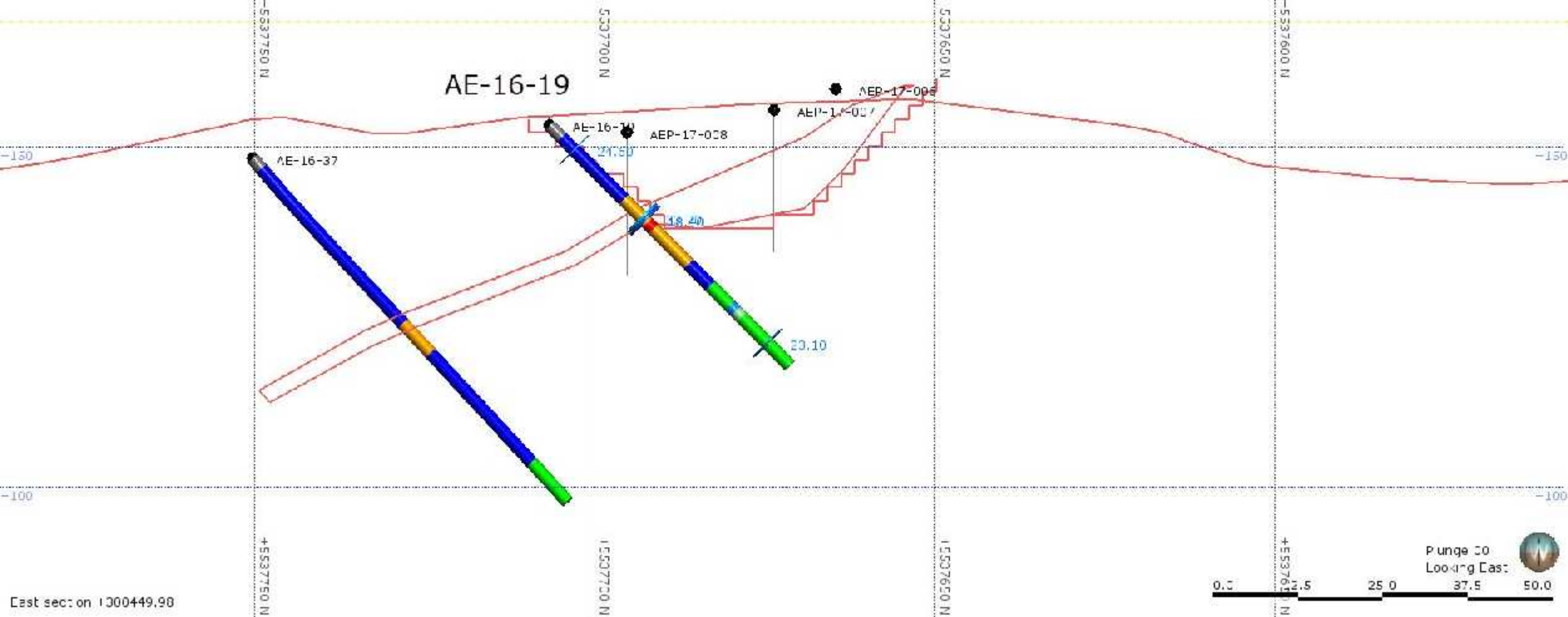
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-100
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Plunge 20
Looking East
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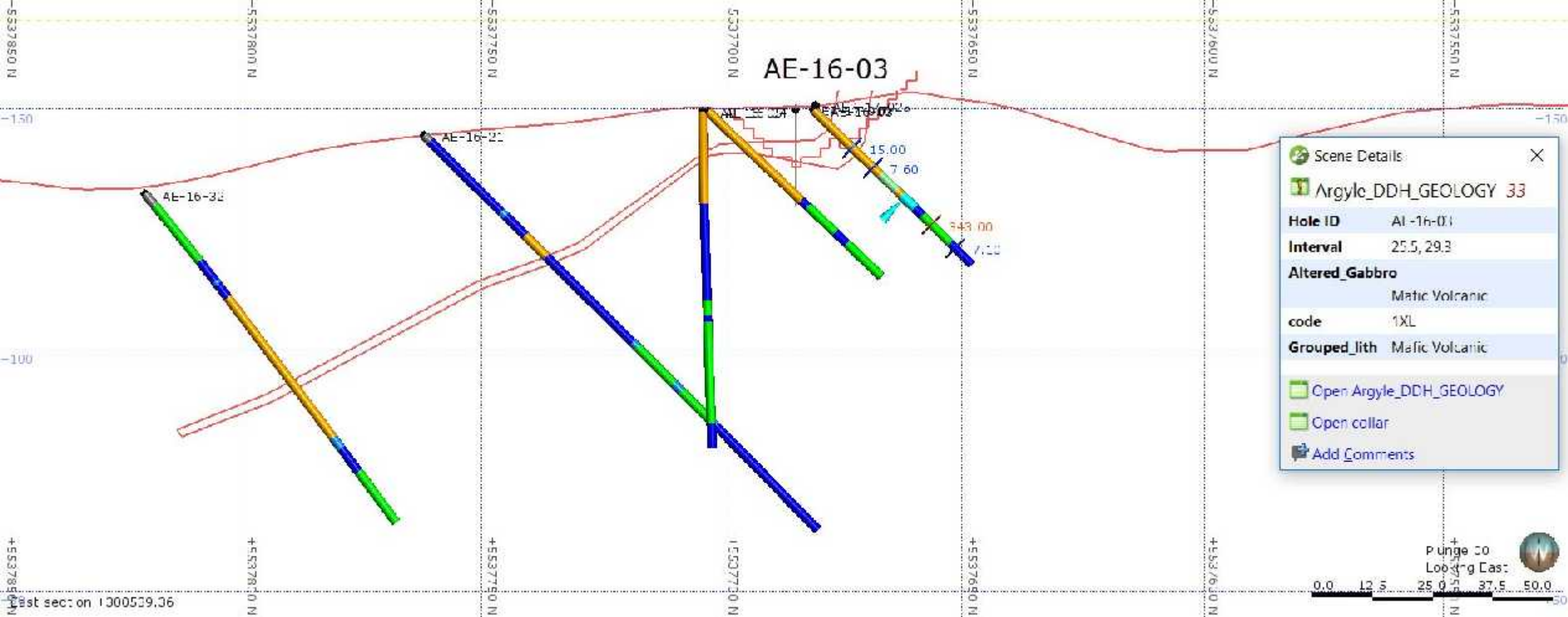
25.0
37.5
50.0
East section 1300449.98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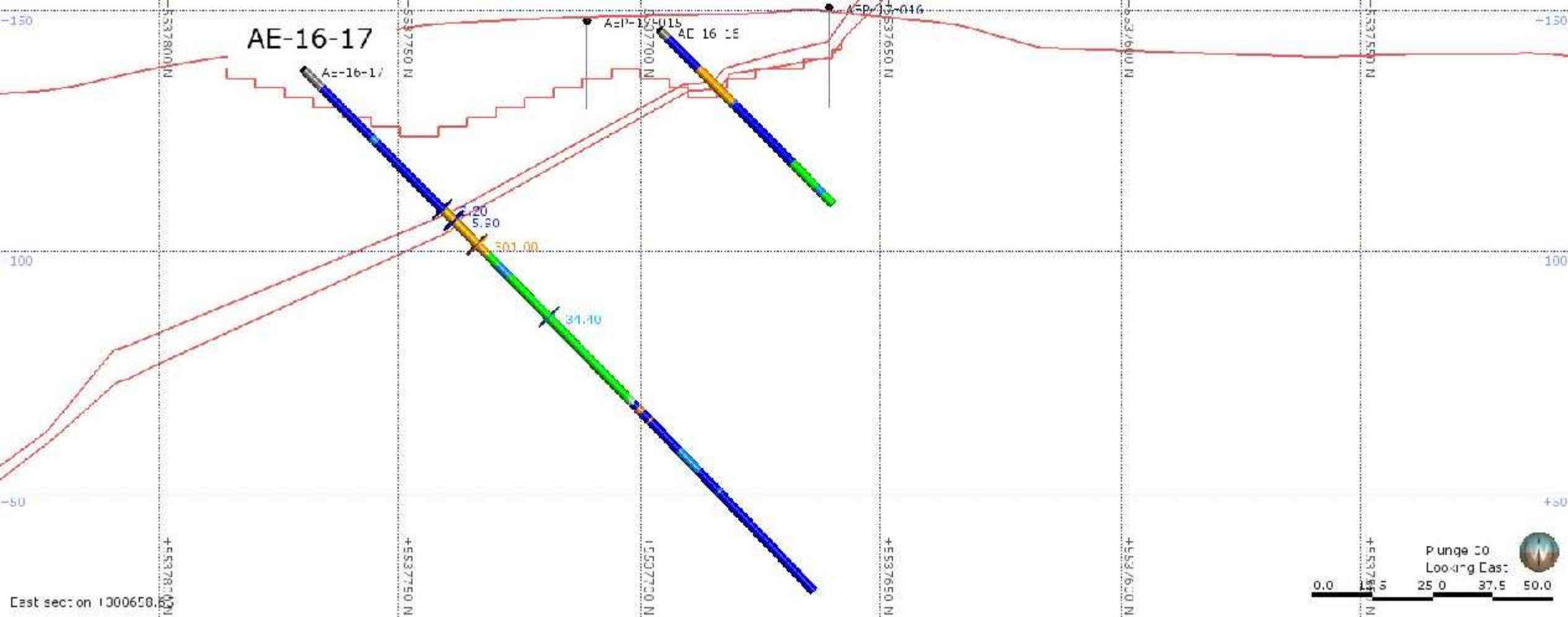
Hole ID
Interval
25.5, 29.3
Altered_Gabbro
Mafic Volcanic
code
1XL
Grouped_lith
Mafic Volcanic
Open Argyle_DDH_GEOLOGY
Open collar
Add Comments
Plunge 20
Looking East
0.0
12.5
25.0
37.5
50.0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AE-16-17
AE 16 15
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5.80
301.00
31.40
-150
100
-50
+553780.0 N
+553775.0 N
+553770.0 N
+553765.0 N
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Plunge 00
Looking East
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12.5
25.0
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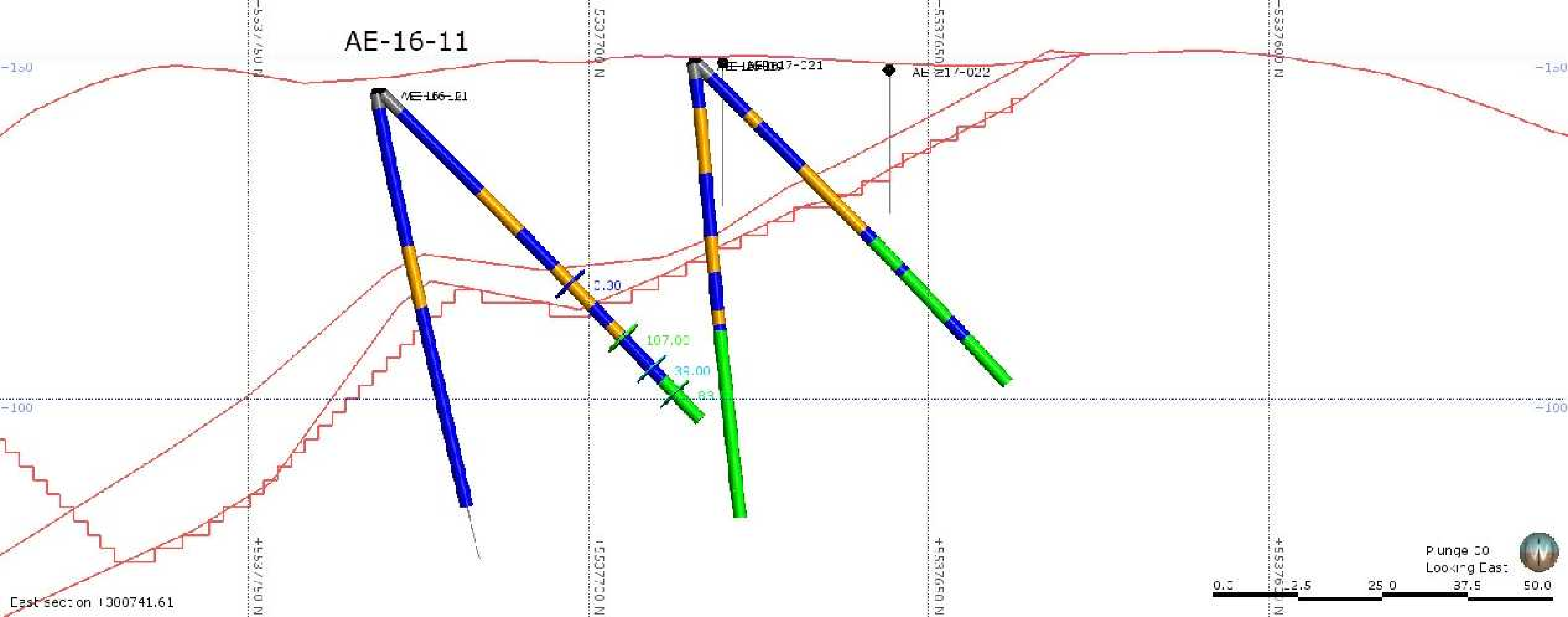
East section 1300650.0


AE-16-11
AE-17-022
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39.00
-150
-100
Plunge 00
Looking East
0.0
25.0
37.5
50.0

APPENDIX B

Summary of Laboratory Results – Static Testing

Table B.1 ABA and NAG Results (All Samples)

Project Area	Drill Hole ID	Sample No.	Laboratory ID	Depth (m)			Sample Description	Geological Material	Results											ARD Classification
				From	To	Interval			Au (g/tonne)	Paste pH	Total Sulphur (Wt.%)	Sulphate S (Wt %)	Sulphate (Wt%)	Sulphide (Wt%)	Total Inorganic Carbon	Acid Production Potential	Neutralizing Potential	Net NP	NP/AP	
East Pit	AE-16-11	AE-ARD-005	244612-05	39.1	39.5	0.5	Mineralized Gabbro	Ore	5.617	8.9	6.800	2.686	0.012	2.673	0.1	213	71.8	-141	0.3	PAG
		AE-ARD-006	244612-06	50.2	50.6	0.4	Altered Gabbro	Waste	<0.005	9.4	0.023	0.038	0.001	0.037	0.44	0.7	76.8	76.1	107	NAG
		AE-ARD-007	244612-07	56.5	56.7	0.2	Unaltered Gabbro	Waste	0.006	9.3	0.075	0.061	0.005	0.056	1.33	2.3	91.4	89.1	39.0	NAG
		AE-ARD-008	244612-08	61.5	61.7	0.2	Ash Tuff	Waste	<0.005	9.2	0.018	0.037	0.002	0.035	0.36	0.6	47.0	46.4	83.6	NAG
	AE-16-17	AE-ARD-013	244612-13	40.7	40.9	0.2	Unaltered Gabbro	Waste	<0.005	9.2	0.158	0.128	0.003	0.125	0.08	4.9	10.7	5.8	2.2	NAG
		AE-ARD-014	244612-14	51	51.4	0.4	Altered Gabbro	Waste	0.029	9.4	0.011	0.037	0.001	0.036	0.27	0.3	104	103	301	NAG
		AE-ARD-015	244612-15	44	44.4	0.4	Mineralized Gabbro	Ore	0.816	9.0	0.229	0.237	0.002	0.236	0.05	7.2	42.2	35.0	5.9	NAG
		AE-ARD-016	244612-16	72.4	72.6	0.2	Lapilli Tuff	Waste	0.010	9.7	0.035	0.039	0.001	0.038	0.29	1.1	37.6	36.5	34.4	NAG
West Pit	AE-16-03	AE-ARD-001	244612-01	34.1	34.3	0.2	Lapilli Tuff	Waste	0.008	9.3	0.007	0.037	0.002	0.035	0.57	0.2	75.0	74.8	343	NAG
		AE-ARD-002	244612-02	11.02	11.42	0.4	Mineralized Gabbro	Waste	0.141	8.9	0.151	0.139	0.002	0.137	0.09	4.7	71.0	66.3	15.0	NAG
		AE-ARD-003	244612-03	17	17.4	0.4	Altered Gabbro	Waste	0.213	9.0	0.352	0.399	0.003	0.396	0.91	11.0	83.9	72.9	7.6	NAG
		AE-ARD-004	244612-04	41.1	41.3	0.2	Unaltered Gabbro	Waste	0.026	9.2	0.077	0.046	0.001	0.044	0.11	2.4	17.0	14.6	7.1	NAG
	AE-16-19	AE-ARD-017	244612-17	19.6	20	0.4	Mineralized Gabbro	Waste	0.018	8.9	0.134	0.117	0.004	0.113	0.42	4.2	77.2	73.0	18.4	NAG
		AE-ARD-018	244612-18	19.1	19.5	0.4	Altered Gabbro	Waste	0.266	9.2	0.072	0.124	0.002	0.122	0.28	2.3	75.8	73.6	33.7	NAG
		AE-ARD-019	244612-19	5	5.2	0.2	Unaltered Gabbro	Waste	<0.005	9.1	0.021	0.053	0.003	0.050	0.04	0.7	16.2	15.5	24.6	NAG
		AE-ARD-020	244612-20	45.2	45.4	0.2	Lapilli Tuff	Waste	0.017	9.0	0.077	0.068	0.002	0.066	0.42	2.4	55.6	53.2	23.1	NAG
General Mine Site	AE-16-43	AE-ARD-009	244612-09	97.6	98	0.4	Mineralized Gabbro	Ore	3.990	9.0	1.610	0.935	0.006	0.929	0.25	50.3	74.7	24.4	1.5	Uncertain
		AE-ARD-010	244612-10	92.4	92.8	0.6	Altered Gabbro	Waste	0.055	8.8	0.064	0.075	0.001	0.074	0.58	2.0	79.1	77.1	39.5	NAG
		AE-ARD-011	244612-11	10.5	10.7	0.2	Lapilli Tuff	Waste	0.123	9.3	0.085	0.058	0.002	0.056	1.56	2.7	94.7	92.0	35.6	NAG
		AE-ARD-012	244612-12	83.1	83.3	0.2	Unaltered Gabbro	Waste	0.012	9.3	0.060	0.046	0.004	0.042	1.72	1.9	96.8	95.0	51.6	NAG

Table B.2 Whole Rock Analysis Results (All Samples)

Project Area	Drill Hole ID	Sample No.	Laboratory ID	Depth (m)			Sample Description	Geological Material	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	V_2O_5	ZrO_2	LOI	Total
				From	To	Interval																			
East Pit	AE-16-11	AE-ARD-005	244612-05	39.1	39.5	0.5	Mineralized Gabbro	Ore	16.12	<0.01	4.14	<0.01	9.80	0.87	1.60	0.17	6.79	0.29	51.87	0.02	1.15	0.02	0.09	4.42	97.34
		AE-ARD-006	244612-06	50.2	50.6	0.4	Altered Gabbro	Waste	14.71	0.01	9.20	0.01	11.36	1.77	5.68	0.23	2.04	0.19	36.98	0.02	2.39	0.08	0.02	15.28	99.98
		AE-ARD-007	244612-07	56.5	56.7	0.2	Unaltered Gabbro	Waste	14.28	0.01	8.41	0.03	11.12	0.65	6.22	0.57	2.78	0.28	43.65	0.02	2.06	0.06	0.02	9.75	99.91
		AE-ARD-008	244612-08	61.5	61.7	0.2	Ash Tuff	Waste	17.81	<0.01	3.44	0.03	7.69	0.43	8.55	0.14	5.50	0.16	48.22	0.02	1.20	0.04	0.01	6.53	99.75
	AE-16-17	AE-ARD-013	244612-13	40.7	40.9	0.2	Unaltered Gabbro	Waste	15.37	<0.01	8.27	0.01	12.73	0.24	6.72	0.41	3.30	0.30	46.87	0.05	2.24	0.07	0.03	3.15	99.76
		AE-ARD-014	244612-14	51	51.4	0.4	Altered Gabbro	Waste	13.20	0.01	10.30	0.02	9.58	1.91	5.21	0.18	1.68	0.24	39.53	0.03	1.96	0.06	0.02	16.04	99.95
		AE-ARD-015	244612-15	44	44.4	0.4	Mineralized Gabbro	Ore	2.29	<0.01	1.76	<0.01	1.98	0.49	0.61	0.05	0.40	0.07	89.48	<0.01	0.13	<0.01	<0.01	2.39	99.65
		AE-ARD-016	244612-16	72.4	72.6	0.2	Lapilli Tuff	Waste	14.50	0.01	7.82	0.05	7.07	0.80	8.83	0.23	3.76	0.20	51.76	0.03	0.86	0.03	0.01	3.94	99.92
West Pit	AE-16-03	AE-ARD-001	244612-01	34.1	34.3	0.2	Lapilli Tuff	Waste	14.28	<0.01	5.60	0.05	6.92	0.58	9.19	0.14	3.59	0.19	49.97	0.02	0.86	0.03	0.01	8.35	99.79
		AE-ARD-002	244612-02	11.02	11.42	0.4	Mineralized Gabbro	Waste	14.46	<0.01	4.98	<0.01	11.32	1.02	2.30	0.27	4.63	0.88	48.33	0.02	1.96	0.03	0.05	9.58	99.83
		AE-ARD-003	244612-03	17	17.4	0.4	Altered Gabbro	Waste	13.26	0.01	11.17	<0.01	10.65	1.76	3.44	0.28	2.28	0.29	37.04	0.03	4.27	0.10	0.03	14.91	99.51
		AE-ARD-004	244612-04	41.1	41.3	0.2	Unaltered Gabbro	Waste	14.78	<0.01	8.32	0.02	11.56	0.36	6.17	0.21	3.88	0.21	49.29	0.04	1.95	0.07	0.02	2.93	99.82
	AE-16-19	AE-ARD-017	244612-17	19.6	20	0.4	Mineralized Gabbro	Waste	12.11	<0.01	7.58	<0.01	14.46	1.58	3.51	0.23	1.07	0.47	42.97	0.02	3.91	0.08	0.04	11.78	99.81
		AE-ARD-018	244612-18	19.1	19.5	0.4	Altered Gabbrp	Waste	12.67	0.01	8.08	<0.01	11.17	1.81	3.16	0.27	2.68	0.46	42.25	0.02	3.36	0.07	0.05	13.71	99.78
		AE-ARD-019	244612-19	5	5.2	0.2	Unaltered Gabbro	Waste	16.61	<0.01	8.16	0.02	11.62	0.18	5.65	0.47	3.68	0.27	47.29	0.04	2.29	0.07	0.02	3.45	99.81
		AE-ARD-020	244612-20	45.2	45.4	0.2	Lapilli Tuff	Waste	15.19	<0.01	10.46	0.05	6.88	0.38	6.88	0.22	4.29	0.14	49.90	0.04	0.84	0.03	0.01	4.33	99.64
General Mine Site	AE-16-43	AE-ARD-009	244612-09	97.6	98	0.4	Mineralized Gabbro	Ore	13.30	<0.01	6.28	<0.01	8.49	0.82	2.00	0.23	4.87	0.70	53.43	0.02	1.63	0.03	0.06	6.96	98.81
		AE-ARD-010	244612-10	92.4	92.8	0.6	Altered Gabbro	Waste	14.09	<0.01	6.07	<0.01	13.73	0.37	3.57	0.22	3.33	0.66	47.35	0.02	2.89	0.06	0.05	7.45	99.87
		AE-ARD-011	244612-11	10.5	10.7	0.2	Lapilli Tuff	Waste	15.34	0.02	12.55	0.02	8.59	1.20	5.21	0.14	3.14	0.17	42.09	0.03	1.49	0.06	0.02	9.77	99.83
		AE-ARD-012	244612-12	83.1	83.3	0.2	Unatlered Gabbro	Waste	14.76	<0.01	9.90	0.01	10.19	0.69	4.82	0.16	3.83	0.27	42.66	0.03	2.07	0.07	0.02	10.35	99.81

Table B.3 ICP Multi Element Analyses Results (All Samples)

Project Area	Drill Hole ID	Sample No.	Laboratory ID	Depth			Sample Description	Geological Material	Results (mg/kg)																																										
				From	To	Interval			Ag	Al	As	Ba	Be	Bi	Ca	Cd[1]	Ce	Co	Cr	Cu	Fe	Ga	Ge	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	S	Sb	Se[1]	Sn	Sr	Ta	Te	Ti	Tl[1]	V	W	Zn	Zr
East Pit	AE-16-11	AE-ARD-005	244612-05	39.1	39.5	0.5	Mineralized Gabbro	Ore	**1.869**	81,291	**116**	62	1.4	<5	28,202	<5	105	17	47	41	65,357	10	12.945	12	6,882	26	2	9,211	1,239	2.931	47,932	31	3	1,225	8	32,854	<10	<5	<2	155	7	<10	6,549	<5	126	9	52	601
		AE-ARD-006	244612-06	50.2	50.6	0.4	Altered Gabbro	Waste	<0.2	73,772	<1	126	1.1	<5	62,262	<5	35	49	87	30	75,307	10	<10	16	13,954	2	14	32,475	1,695	<1	14,302	54	26	785	<5	182	<10	<5	<2	192	18	<10	13,584	<5	405	4	63	108
		AE-ARD-007	244612-07	56.5	56.7	0.2	Unaltered Gabbro	Waste	<0.2	72,119	2	126	0.8	<5	57,364	<5	41	35	165	51	74,268	<5	<10	8	5,136	5	25	35,841	4,188	<1	19,644	39	28	1,170	<5	284	<10	<5	<2	195	12	<10	11,771	<5	297	<2	46	137
		AE-ARD-008	244612-08	61.5	61.7	0.2	Ash Tuff	Waste	<0.2	90,807	<1	51	0.9	<5	23,704	<5	37	34	176	1	51,809	9	<10	9	3,411	7	18	49,686	1,036	<1	39,243	23	60	679	<5	129	<10	<5	<2	158	7	<10	6,914	<5	199	<2	50	105
	AE-16-17	AE-ARD-013	244612-13	40.7	40.9	0.2	Unaltered Gabbro	Waste	<0.2	76,873	**18**	63	1.3	<5	55,817	<5	49	51	73	33	84,171	6	<10	17	1,872	6	10	38,308	3,016	<1	23,130	44	26	1,222	<5	1,274	<10	<5	<2	405	16	<10	12,684	<5	329	<2	74	199
		AE-ARD-014	244612-14	51	51.4	0.4	Altered Gabbro	Waste	<0.2	66,360	3	116	1.3	<5	69,879	<5	35	45	152	60	63,666	11	<10	14	15,027	4	8	29,833	1,338	<1	11,808	39	35	983	<5	290	<10	<5	<2	202	13	<10	11,164	<5	299	5	64	127
		AE-ARD-015	244612-15	44	44.4	0.4	Mineralized Gabbro	Ore	<0.2	11,713	2	27	0.3	<5	12,176	<5	<10	6	50	7	13,348	<5	<10	5	3,902	<1	<1	3,555	365	1.13	2,844	<5	5	291	5	3,172	<10	<5	<2	36	<5	<10	772	<5	35	<2	21	25
		AE-ARD-016	244612-16	72.4	72.6	0.2	Lapilli Tuff	Waste	<0.2	73,248	9	128	1.2	<5	53,341	<5	43	34	349	3	47,229	<5	<10	10	6,322	10	14	50,851	1,702	<1	26,616	23	152	826	<5	220	11	<5	<2	259	8	<10	4,942	<5	165	<2	61	76
West Pit	AE-16-03	AE-ARD-001	244612-01	34.1	34.3	0.2	Lapilli Tuff	Waste	<0.2	71,111	2	50	0.9	<5	37,647	<5	43	34	349	37	45,559	6	<10	11	4,562	10	16	52,171	1,047	<1	25,010	22	161	776	<5	143	15	<5	<2	147	<5	<10	4,869	<5	158	<2	52	84
		AE-ARD-002	244612-02	11.02	11.42	0.4	Mineralized Gabbro	Waste	**0.622**	72,858	4	77	1.7	<5	33,881	<5	93	25	50	3	75,421	13	<10	11	8,036	19	4	13,207	1,968	1.325	32,649	25	5	3,676	<5	1,468	<10	<5	<2	163	6	<10	11,186	<5	144	<2	74	381
		AE-ARD-003	244612-03	17	17.4	0.4	Altered Gabbro	Waste	<0.2	66,842	**29**	104	1.4	<5	76,016	<5	38	54	28	<1	70,938	12	<10	14	13,922	5	3	19,759	2,044	1.399	16,067	53	11	1,191	<5	4,530	<10	<5	<2	202	22	<10	24,345	<5	425	21	72	215
		AE-ARD-004	244612-04	41.1	41.3	0.2	Unaltered Gabbro	Waste	<0.2	74,131	5	54	0.9	<5	56,336	<5	42	45	126	74	76,637	10	<10	12	2,840	4	7	35,296	1,553	1.019	27,260	46	38	877	<5	380	<10	<5	<2	294	14	<10	11,092	<5	334	<2	77	132
	AE-16-19	AE-ARD-017	244612-17	19.6	20	0.4	Mineralized Gabbro	Waste	<0.2	60,895	**14**	78	1.2	<5	51,420	**6.17**	77	53	34	16	96,079	12	<10	19	12,449	11	7	20,124	1,722	1.6	7,537	46	4	1,928	<5	1,158	<10	<5	<2	126	19	<10	22,238	<5	351	5	110	298
		AE-ARD-018	244612-18	19.1	19.5	0.4	Altered Gabbrp	Waste	<0.2	62,810	**16**	98	1.2	<5	54,095	<5	69	41	28	13	73,152	10	<10	13	14,079	13	2	17,834	1,965	1.49	18,618	45	3	1,895	<5	1,467	<10	<5	<2	165	19	<10	18,874	<5	325	9	69	317
		AE-ARD-019	244612-19	5	5.2	0.2	Unaltered Gabbro	Waste	<0.2	83,213	**11**	75	1.1	<5	55,180	<5	48	49	114	23	76,929	6	<10	14	1,416	6	12	32,251	3,466	<1	25,807	45	23	1,112	<5	382	<10	<5	<2	331	15	<10	13,008	<5	336	<2	71	169
		AE-ARD-020	244612-20	45.2	45.4	0.2	Lapilli Tuff	Waste	<0.2	76,916	5	77	1.3	<5	71,479	<5	35	30	324	**330**	46,059	8	<10	9	2,980	7	9	39,703	1,642	<1	30,397	21	110	585	7	691	11	<5	<2	288	<5	<10	4,814	<5	160	<2	130	93
General Mine Site	AE-16-43	AE-ARD-009	244612-09	97.6	98	0.4	Mineralized Gabbro	Ore	**0.768**	67,498	**62**	48	1.2	<5	43,033	<5	95	27	65	6	56,931	12	<10	12	6,524	21	3	11,545	1,685	1.814	34,606	28	1	2,944	<5	11,386	<10	<5	<2	143	8	<10	9,354	<5	141	7	45	410
		AE-ARD-010	244612-10	92.4	92.8	0.6	Altered Gabbro	Waste	<0.2	71,326	<1	31	1.5	<5	41,499	<5	97	43	28	6	91,895	14	11.578	16	2,939	17	12	20,608	1,653	1.806	23,640	47	2	2,757	<5	533	<10	<5	<2	154	15	<10	16,579	<5	303	3	68	380
		AE-ARD-011	244612-11	10.5	10.7	0.2	Lapilli Tuff	Waste	<0.2	76,713	1	135	0.7	<5	84,737	<5	26	42	111	35	56,801	8	13.577	10	9,412	2	10	29,690	1,019	<1	22,013	39	49	711	<5	571	<10	<5	<2	241	10	<10	8,409	<5	290	<2	76	105
		AE-ARD-012	244612-12	83.1	83.3	0.2	Unatlered Gabbro	Waste	<0.2	75,021	3	85	0.9	<5	67,911	<5	39	46	91	51	68,424	12	<10	13	5,461	5	15	27,909	1,177	<1	27,277	44	22	1,116	<5	395	<10	<5	<2	211	14	<10	11,905	<5	334	<2	50	139

Note:
1 = Reportable detection limit exceeds the applicable critieria
Results that exceed the 5XCA are bolded and underlined.

APPENDIX C

RPC Science and Engineering Final Reports

Final Report

ARD Testing of Argyle Material; Anaconda Mining Inc.

Reference No.: MIS-J2051

Prepared for:

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September 19, 2017

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INTRODUCTION

Anaconda Mining Inc. initiated a study at RPC to conduct static Acid Rock Drainage (ARD) test work. The Argyle deposit being investigated by Anaconda Mining Inc. in conjunction with RPC to look at ways of expanding current operations.

RPC was thus contacted to conduct static testing as follows:

- Acid Base Accounting (ABA by Sobek method)
- Total S analysis
- Sulphate S analysis
- Total inorganic carbon analysis
- Whole rock analysis
- Multi-element ICP-OES analysis
- Au by Fire Assay

This report serves to summarize the findings as well as recommendations for the way forward.

PROGRAM RESULTS

Sample Preparation

Twenty samples were received in preparation for the static testing. Each of these samples were respectively dried, crushed to -¼", homogenized and split into sub samples for ABA, Total S, Total Inorganic Carbon, whole rock, Au by Fire Assay and multi-element ICP analyses. These samples were as laid out in Table 1.

Table 1
Argyle Samples Subjected to ARD Analysis

Sample #	Received Mass (kg)
AE-ARD-001	0.36
AE-ARD-002	0.26
AE-ARD-003	0.32
AE-ARD-004	0.38
AE-ARD-005	0.32
AE-ARD-006	0.24
AE-ARD-007	0.32
AE-ARD-008	0.34
AE-ARD-009	0.32
AE-ARD-010	0.28
AE-ARD-011	0.32
AE-ARD-012	0.40
AE-ARD-013	0.28
AE-ARD-014	0.26
AE-ARD-015	0.26
AE-ARD-016	0.28
AE-ARD-017	0.24
AE-ARD-018	0.32
AE-ARD-019	0.32
AE-ARD-020	0.46

Acid Rock Drainage (ARD) Static Analyses Results

The results from Total Inorganic Carbon analyses and acid-base accounting (utilizing the Sobek method) on the 20 samples submitted (see Table 1) are given in Table 2 to Table 3.

Table 2
Total Inorganic Carbon Analyses on Argyle Samples

Client ID	Total Inorganic Carbon
	%
AE-ARD-001	0.57
AE-ARD-002	0.09
AE-ARD-003	0.91
AE-ARD-004	0.11
AE-ARD-005	0.10
AE-ARD-006	0.44
AE-ARD-007	1.33
AE-ARD-008	0.36
AE-ARD-009	0.25
AE-ARD-010	0.58
AE-ARD-011	1.56
AE-ARD-012	1.72
AE-ARD-013	0.08
AE-ARD-014	0.27
AE-ARD-015	0.05
AE-ARD-016	0.29
AE-ARD-017	0.42
AE-ARD-018	0.28
AE-ARD-019	0.04
AE-ARD-020	0.42

Table 3
Acid Base Accounting Results on Argyle Samples

Client ID	Paste pH	Total Sulfur	Acid Production Potential	Neutralizing Potential pH 8.3	Net NP pH 8.3	NP/AP
		%	Kg $CaCO_3$/tonne			
AE-ARD-001	9.3	0.007	0.2	75.0	74.8	343
AE-ARD-002	8.9	0.151	4.7	71.0	66.3	15.0
AE-ARD-003	9.0	0.352	11.0	83.9	72.9	7.6
AE-ARD-004	9.2	0.077	2.4	17.0	14.6	7.1
AE-ARD-005	8.9	6.800	213	71.8	-141	0.3
AE-ARD-006	9.4	0.023	0.7	76.8	76.1	107
AE-ARD-007	9.3	0.075	2.3	91.4	89.1	39.0
AE-ARD-008	9.2	0.018	0.6	47.0	46.4	83.6
AE-ARD-009	9.0	1.610	50.3	74.7	24.4	1.5
AE-ARD-010	8.8	0.064	2.0	79.1	77.1	39.5
AE-ARD-011	9.3	0.085	2.7	94.7	92.0	35.6
AE-ARD-012	9.3	0.060	1.9	96.8	95.0	51.6
AE-ARD-013	9.2	0.158	4.9	10.7	5.8	2.2
AE-ARD-014	9.4	0.011	0.3	104	103	301
AE-ARD-015	9.0	0.229	7.2	42.2	35.0	5.9
AE-ARD-016	9.7	0.035	1.1	37.6	36.5	34.4
AE-ARD-017	8.9	0.134	4.2	77.2	73.0	18.4
AE-ARD-018	9.2	0.072	2.3	75.8	73.6	33.7
AE-ARD-019	9.1	0.021	0.7	16.2	15.5	24.6
AE-ARD-020	9.0	0.077	2.4	55.6	53.2	23.1

The Total Inorganic Carbon analyses seen in Table 2 indicated that the inorganic carbon content was relatively low over all 20 samples (ranging from 0.04 % to 1.72 % in sample # AE-ARD-012). In addition, the Total Sulfur contents of the 20 samples were also relatively low (see Table 3), ranging from 0.007 % to 1.610 % in sample # AE-ARD-009. Sample # AE-ARD-005 had a higher Total Sulfur content at 6.800 %.

As seen from Table 3, most of the Argyle samples obtained positive Net Neutralizing Potential values with NP/AP ratio values (ratio between Neutralizing Potential and Acid Production Potential) above 2.0. This indicated that these specific samples were not net acid producers. On sample # AE-ARD-005, the Net Neutralizing Potential value was negative and the NP/AP ratio was less than 1.0 at 0.3, indicating that this sample was potentially acid producing.

Sample # AE-ARD-009 obtained an NP/AP ratio value between 2.0 and 1.0 at 1.5 and was thus classified as “uncertain”.

It is recommended that a specialized consultant be contacted for the full MEND Report 1.20.1 analysis and interpretation prior to follow up with the regulatory agent.

The sulphate sulfur contents of the 20 samples were also determined and whole rock analyses as well as ICP multi-element analyses and Au Fire Assay analyses were conducted with the results reported in Table 4 to Table 8.

Table 4
Argyle Samples Sulphate S Analyses Results

Sample	Wt. %	
	S (Total)	as SO_4
AE-ARD-001	0.037	0.007
AE-ARD-002	0.139	0.005
AE-ARD-003	0.399	0.009
AE-ARD-004	0.046	0.004
AE-ARD-005	2.686	0.037
AE-ARD-006	0.038	0.004
AE-ARD-007	0.061	0.016
AE-ARD-008	0.037	0.006
AE-ARD-009	0.935	0.017
AE-ARD-010	0.075	0.002
AE-ARD-011	0.058	0.006
AE-ARD-012	0.046	0.011
AE-ARD-013	0.128	0.009
AE-ARD-014	0.037	0.004
AE-ARD-015	0.237	0.006
AE-ARD-016	0.039	0.003
AE-ARD-017	0.117	0.011
AE-ARD-018	0.124	0.005
AE-ARD-019	0.053	0.009
AE-ARD-020	0.068	0.006

Table 5
ICP Multi-Element Analyses Results on Argyle Samples # AE-ARD-001 to AE-ARD-010

Sample ID	AE-ARD-001	AE-ARD-002	AE-ARD-003	AE-ARD-004	AE-ARD-005	AE-ARD-006	AE-ARD-007	AE-ARD-008	AE-ARD-009	AE-ARD-010
Unit	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Ag	<0.2	0.622	<0.2	<0.2	1.869	<0.2	<0.2	<0.2	0.768	<0.2
Al	71111	72858	66842	74131	81291	73772	72119	90807	67498	71326
As	2	4	29	5	116	<1	2	<1	62	<1
Ba	50	77	104	54	62	126	126	51	48	31
Be	0.9	1.7	1.4	0.9	1.4	1.1	0.8	0.9	1.2	1.5
Bi	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ca	37647	33881	76016	56336	28202	62262	57364	23704	43033	41499
Cd	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ce	43	93	38	42	105	35	41	37	95	97
Co	34	25	54	45	17	49	35	34	27	43
Cr	349	50	28	126	47	87	165	176	65	28
Cu	37	3	<1	74	41	30	51	1	6	6
Fe	45559	75421	70938	76637	65357	75307	74268	51809	56931	91895
Ga	6	13	12	10	10	10	<5	9	12	14
Ge	<10	<10	<10	<10	12.945	<10	<10	<10	<10	11.578
In	11	11	14	12	12	16	8	9	12	16
K	4562	8036	13922	2840	6882	13954	5136	3411	6524	2939
La	10	19	5	4	26	2	5	7	21	17
Li	16	4	3	7	2	14	25	18	3	12
Mg	52171	13207	19759	35296	9211	32475	35841	49686	11545	20608
Mn	1047	1968	2044	1553	1239	1695	4188	1036	1685	1653
Mo	<1	1.325	1.399	1.019	2.931	<1	<1	<1	1.814	1.806
Na	25010	32649	16067	27260	47932	14302	19644	39243	34606	23640
Nb	22	25	53	46	31	54	39	23	28	47
Ni	161	5	11	38	3	26	28	60	1	2
P	776	3676	1191	877	1225	785	1170	679	2944	2757
Pb	<5	<5	<5	<5	8	<5	<5	<5	<5	<5
S	143	1468	4530	380	32854	182	284	129	11386	533
Sb	15	<10	<10	<10	<10	<10	<10	<10	<10	<10
Se	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sn	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sr	147	163	202	294	155	192	195	158	143	154
Ta	<5	6	22	14	7	18	12	7	8	15
Te	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ti	4869	11186	24345	11092	6549	13584	11771	6914	9354	16579
Tl	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
V	158	144	425	334	126	405	297	199	141	303
W	<2	<2	21	<2	9	4	<2	<2	7	3
Zn	52	74	72	77	52	63	46	50	45	68
Zr	84	381	215	132	601	108	137	105	410	380

Table 6
ICP Multi-Element Analyses Results on Argyle Samples # AE-ARD-011 to AE-ARD-020

Sample ID	AE-ARD-011	AE-ARD-012	AE-ARD-013	AE-ARD-014	AE-ARD-015	AE-ARD-016	AE-ARD-017	AE-ARD-018	AE-ARD-019	AE-ARD-020
Unit	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Ag	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Al	76713	75021	76873	66360	11713	73248	60895	62810	83213	76916
As	1	3	18	3	2	9	14	16	11	5
Ba	135	85	63	116	27	128	78	98	75	77
Be	0.7	0.9	1.3	1.3	0.3	1.2	1.2	1.2	1.1	1.3
Bi	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ca	84737	67911	55817	69879	12176	53341	51420	54095	55180	71479
Cd	<5	<5	<5	<5	<5	<5	6.17	<5	<5	<5
Ce	26	39	49	35	<10	43	77	69	48	35
Co	42	46	51	45	6	34	53	41	49	30
Cr	111	91	73	152	50	349	34	28	114	324
Cu	35	51	33	60	7	3	16	13	23	330
Fe	56801	68424	84171	63666	13348	47229	96079	73152	76929	46059
Ga	8	12	6	11	<5	<5	12	10	6	8
Ge	13.577	<10	<10	<10	<10	<10	<10	<10	<10	<10
In	10	13	17	14	5	10	19	13	14	9
K	9412	5461	1872	15027	3902	6322	12449	14079	1416	2980
La	2	5	6	4	<1	10	11	13	6	7
Li	10	15	10	8	<1	14	7	2	12	9
Mg	29690	27909	38308	29833	3555	50851	20124	17834	32251	39703
Mn	1019	1177	3016	1338	365	1702	1722	1965	3466	1642
Mo	<1	<1	<1	<1	1.13	<1	1.6	1.49	<1	<1
Na	22013	27277	23130	11808	2844	26616	7537	18618	25807	30397
Nb	39	44	44	39	<5	23	46	45	45	21
Ni	49	22	26	35	5	152	4	3	23	110
P	711	1116	1222	983	291	826	1928	1895	1112	585
Pb	<5	<5	<5	<5	5	<5	<5	<5	<5	7
S	571	395	1274	290	3172	220	1158	1467	382	691
Sb	<10	<10	<10	<10	<10	11	<10	<10	<10	11
Se	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sn	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sr	241	211	405	202	36	259	126	165	331	288
Ta	10	14	16	13	<5	8	19	19	15	<5
Te	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ti	8409	11905	12684	11164	772	4942	22238	18874	13008	4814
Tl	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
V	290	334	329	299	35	165	351	325	336	160
W	<2	<2	<2	5	<2	<2	5	9	<2	<2
Zn	76	50	74	64	21	61	110	69	71	130
Zr	105	139	199	127	25	76	298	317	169	93

Table 7
Argyle Samples Whole Rock Analyses Results

Sample	Wt. %															
	Al_2O_3	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	V_2O_5	ZrO_2	LOI 1000°C	Total
AE-ARD-001	14.28	5.60	0.05	6.92	0.58	9.19	0.14	3.59	0.19	49.97	0.02	0.86	0.03	0.01	8.35	99.79
AE-ARD-002	14.46	4.98	<0.01	11.32	1.02	2.30	0.27	4.63	0.88	48.33	0.02	1.96	0.03	0.05	9.58	99.83
AE-ARD-003	13.26	11.17	<0.01	10.65	1.76	3.44	0.28	2.28	0.29	37.04	0.03	4.27	0.10	0.03	14.91	99.51
AE-ARD-004	14.78	8.32	0.02	11.56	0.36	6.17	0.21	3.88	0.21	49.29	0.04	1.95	0.07	0.02	2.93	99.82
AE-ARD-005	16.12	4.14	<0.01	9.80	0.87	1.60	0.17	6.79	0.29	51.87	0.02	1.15	0.02	0.09	4.42	97.34
AE-ARD-006	14.71	9.20	0.01	11.36	1.77	5.68	0.23	2.04	0.19	36.98	0.02	2.39	0.08	0.02	15.28	99.98
AE-ARD-007	14.28	8.41	0.03	11.12	0.65	6.22	0.57	2.78	0.28	43.65	0.02	2.06	0.06	0.02	9.75	99.91
AE-ARD-008	17.81	3.44	0.03	7.69	0.43	8.55	0.14	5.50	0.16	48.22	0.02	1.20	0.04	0.01	6.53	99.75
AE-ARD-009	13.30	6.28	<0.01	8.49	0.82	2.00	0.23	4.87	0.70	53.43	0.02	1.63	0.03	0.06	6.96	98.81
AE-ARD-010	14.09	6.07	<0.01	13.73	0.37	3.57	0.22	3.33	0.66	47.35	0.02	2.89	0.06	0.05	7.45	99.87
AE-ARD-011	15.34	12.55	0.02	8.59	1.20	5.21	0.14	3.14	0.17	42.09	0.03	1.49	0.06	0.02	9.77	99.83
AE-ARD-012	14.76	9.90	0.01	10.19	0.69	4.82	0.16	3.83	0.27	42.66	0.03	2.07	0.07	0.02	10.35	99.81
AE-ARD-013	15.37	8.27	0.01	12.73	0.24	6.72	0.41	3.30	0.30	46.87	0.05	2.24	0.07	0.03	3.15	99.76
AE-ARD-014	13.20	10.30	0.02	9.58	1.91	5.21	0.18	1.68	0.24	39.53	0.03	1.96	0.06	0.02	16.04	99.95
AE-ARD-015	2.29	1.76	<0.01	1.98	0.49	0.61	0.05	0.40	0.07	89.48	<0.01	0.13	<0.01	<0.01	2.39	99.65
AE-ARD-016	14.50	7.82	0.05	7.07	0.80	8.83	0.23	3.76	0.20	51.76	0.03	0.86	0.03	0.01	3.94	99.92
AE-ARD-017	12.11	7.58	<0.01	14.46	1.58	3.51	0.23	1.07	0.47	42.97	0.02	3.91	0.08	0.04	11.78	99.81
AE-ARD-018	12.67	8.08	<0.01	11.17	1.81	3.16	0.27	2.68	0.46	42.25	0.02	3.36	0.07	0.05	13.71	99.78
AE-ARD-019	16.61	8.16	0.02	11.62	0.18	5.65	0.47	3.68	0.27	47.29	0.04	2.29	0.07	0.02	3.45	99.81
AE-ARD-020	15.19	10.46	0.05	6.88	0.38	6.88	0.22	4.29	0.14	49.90	0.04	0.84	0.03	0.01	4.33	99.64

Table 8
Argyle Samples Au Fire Assay Analyses Results

Sample	Grade
	Au (mg/kg)
AE-ARD-001	0.008
AE-ARD-002	0.141
AE-ARD-003	0.213
AE-ARD-004	0.026
AE-ARD-005	5.617
AE-ARD-006	<0.005
AE-ARD-007	0.006
AE-ARD-008	<0.005
AE-ARD-009	3.990
AE-ARD-010	0.055
AE-ARD-011	0.123
AE-ARD-012	0.012
AE-ARD-013	<0.005
AE-ARD-014	0.029
AE-ARD-015	0.816
AE-ARD-016	0.010
AE-ARD-017	0.018
AE-ARD-018	0.266
AE-ARD-019	<0.005
AE-ARD-020	0.017

CONCLUSIONS AND RECOMMENDATIONS

Note that all results were only as representative as the sample received. All data obtained were in good agreement with each other and showed that:

- Of the 20 Argyle samples subjected to static Acid Rock Drainage (ARD) testing, 1 was found (AE-ARD-005) to be potentially acid producing and 1 obtained an NP/AP ratio value between 2.0 and 1.0 (AE-ARD-009 was thus “uncertain”). The other 18 Argyle samples were all found to be not potentially acid producing.
- It was recommended that a specialized consultant be contacted for the full MEND Report 1.20.1 analysis and interpretation prior to follow up with the regulatory agent.

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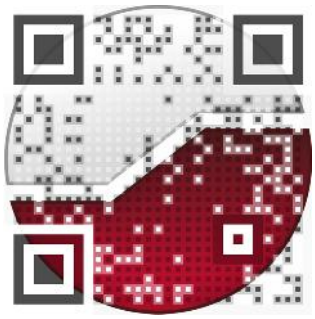

civil	civil
geotechnical	géotechnique
environmental	environnementale
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materials testing	service de laboratoire des matériaux

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Anaconda Mining

Women's Employment Plan
Point Rousse Project
Argyle Gold Mine

August 2018

TABLE OF CONTENTS

Revisions

Document Version	Developer	Date
1 - Original	G. Forrest	August 23, 2018

1 Introduction

Anaconda Mining is a growth-oriented, gold mining and exploration company operating a producing project called the Point Rousse Project with other exploration/development projects in the works.

As the only pure play gold producer in Atlantic Canada, Anaconda Mining is turning the rock we live on into a growing and profitable resource. With a young and motivated workforce, innovative technology and the support of local suppliers, Anaconda is investing in the people of Newfoundland & Labrador and giving back to the communities in which we operate.

The Point Rousse Project is located in the Baie Verte Mining District in Newfoundland, Canada. Since 2012, Anaconda has increased its gold production to approximately 16,000 ounces per year. In an effort to expand production, it is currently exploring other prospective gold trends, all within 8 kilometers of the Pine Cove Mill. The Company's plan is to discover and develop a larger resource portfolio and substantially increase annual production at the Pine Cove Mill.

The upcoming Argyle Gold Mine is located only 6.5 kilometers (km) away from the Pine Cove Mill and will be the second gold producing operation to follow its flagship Pine Cove Mine. Mining operations will leverage existing infrastructure to economically develop the resource at depth over the course of approximately 24 months, beginning in 2019.

Since 2008, Anaconda has been a major gold producer in the Ming's Bight Peninsula. Between Guy J. Bailey's, Shoreline Aggregates and Anaconda's workforce, the Point Rousse Project has been able to employ approximately 120 workers. The company has continuously looked to add employees from the local area throughout the company's growth and has ultimately served a significant role to the peninsula's economy.

This Women's Employment Plan (WEP) has been prepared for the Environmental Assessment for Argyle. This WEP describes the gender-equity goals and initiatives that Anaconda plans to implement by working collaboratively with our contractors and relevant community groups to help ensure a diverse and inclusive workforce during the various phases of the proposed work.

According to Natural Resources Canada, nationally women comprise of 17% of the mining workforce. At Anaconda Mining, 14% of the workforce is currently female with 33% female representation on the senior executive team. It is the goal of this Women's Employment Plan for women to comprise 20% of the workforce at Argyle which exceeds the national average by 3%.

At the executive level, CEO Dustin Angelo, COO Gordana Slepcev, and Vice Presidents Lynn Hammond, Alan Cramm, Paul McNeil and Rob Dufour routinely communicate their high regard for providing gender equality and a respectful environment for the company's workforce.

The company's commitment to providing a safe and healthy workplace has been rewarded by Newfoundland & Labrador Employers' Council with a 2017 Employer of Distinction Award. On-site, Operations Manager Tony Chislett and HR Coordinator Linus Doyle pay close attention to the daily relations between all employees and ensure the standards set at the executive level are achieved.

At Anaconda women are represented throughout the company including non-traditional occupations including engineering and technical services. It has been identified that skilled trades are a specific area where recruitment of women could be improved.

Anaconda is committed to gender equality within its workforce and will continue to provide equal opportunities, resources and rewards to both men and women within the company. Anaconda understands that a gender mixed workforce facilitates a healthy work environment and will encourage the participation of women in the workplace.

Anaconda is committed to considering the application of plan initiatives to other under-represented groups to increase opportunities for their participation in the mining sector, wherever possible, and recommending the same plan initiatives to its contractors and subcontractors.

Anaconda is committed to work towards a culture of continuous improvement, ensuring that as opportunities arise and advancements are realized, targets and qualitative measures for all designated groups will be reviewed.

Anaconda is committed to establishing qualitative and quantitative goals for gender equity in order to improve employment outcomes for women in Newfoundland and Labrador. The Company has developed this Women's Employment Plan (WEP) to establish a proactive approach toward a workplace environment with policies and practices that help ensure a work environment free from harassment and discrimination.

1.1 Project Timeframes and Workforce Estimates

The project is scheduled to begin in 2019 and will continue through to 2021. At its peak during the construction phase in 2019, it is estimated that the Project will employ 65 people directly and indirectly.

The construction phase of the project will see the work completed that is required as preparation for mining operations. This includes the road upgrades, tree cutting, overburden stripping, and power distribution. The work will be completed in early 2019 so that mining operations can begin in late 2019. The workforce requirements and estimated number of workers required by NOC code for the Construction Phase are outlined in Table 1.

Table 1: Estimated Full-time Contractor-Hired (CH) or Direct Employee (DE) Hires, Construction Phase, by Occupation/NOC

Occupation	NOC	Duration of Work	Number of Employees	CH/DE
Project Management	**0211**	**0.5 years**	**2**	**DE**
Supervisors Skilled Trades	**7301, 7302, 8221, 9211**	**0.5 years**	**12**	**CH & DE**
Professionals	**2113**	**0.5 years**	**1**	**DE**
Semi-Professionals and Technicians	**2113, 2212, 2143**	**0.5 years**	**4**	**DE**
Skilled Trades	**7242, 7311, 9411, 9231, 7521, 7372**	**0.5 years**	**36**	**CH & DE**
Manual Workers	**8614**	**0.5 years**	**4**	**CH & DE**
Apprentices	**2212**	**0.5 years**	**2**	**DE**

The operations phase of the project includes drilling, blasting, mucking and hauling. Mining operations will be carried out over the course of 24 months in which two open pits will be developed to their economic potential. Anaconda will continue to employ Guy J. Baileys as a contractor, who will see a shift of both human resources and equipment from the construction phase into the operations phase of the project.

Table 2: Estimated Full-time (FT), Contractor-Hired (CH) or Direct Employee (DE) for the Operations Phase, 2018-2019 by Occupation//NOC

Occupation	NOC	Duration of Work	Number of Employees	CH/DE
Project Management	**0211**	**2 years**	**2**	**DE**
Supervisors Skilled Trades	**7301, 7302, 8221, 9211**	**2 years**	**12**	**CH & DE**
Professionals	**2113**	**2 years**	**1**	**DE**
Semi-Professionals and Technicians	**2113, 2212, 2143**	**2 years**	**4**	**DE**
Skilled Trades	**7242, 7311, 9411, 9231, 7521, 7372**	**2 years**	**36**	**CH & DE**
Manual Workers	**8614**	**2 years**	**4**	**CH & DE**
Apprentices	**2212**	**2 years**	**2**	**DE**

1.2 Employment Diversity Commitments and Practices

Anaconda has developed the following commitments to advance gender equity in employment and smooth the transition of women into leadership roles:

- Establish senior executive responsibilities for gender equality, develop capabilities and lines of accountability among senior management;
- Develop and communicate an executive-level vision statement to all staff and contractors, including commitments and goals;
- Communicate policies and practices related to recruitment, orientation, hiring, remuneration, retention, promotion, complaint resolution and termination;
- Establish targets and timeframes to increase the number of women in leadership roles and occupations where women are under-represented
- Provide training and other supports to develop an inclusive workplace culture; and
- Implement a monitoring system for gender equity as part of general HR systems and project planning/implementation.

2 Recruitment and Employment

Anaconda commits to the following measures to reduce the barriers to women's participation and improve their employment on this project.

- Anaconda will contact the Office to Advance Women Apprentices (OAWA) and the Women in Resource Development Corporation (WRDC) to seek recommendations regarding how the company can increase the number of female applicants for job competitions to support identified targets.
- Anaconda's internal employment equity process will include the following measures:
    - The line of accountability for Anaconda's Women's Employment Plan will begin on-site with our Operations Manager, Tony Chislett and HR Coordinator, Linus Doyle;
    - At the executive level, progress will be reported to Chief Operating Officer Gordana Slepcev and Vice President of Public Relations, Lynn Hammond.
    - Mandatory Site Orientation will include Respectful Workplace Policies for all new employees;
    - Existing employees will partake in Respectful Workplace training before the Project begins;
    - HR policies and practices will be reviewed for gender equity assurance;
- Anaconda will work with contractors to ensure compliance by requesting for women employment progress reports bi-annually. Progress reports will be reviewed by all parties accountable for compliance including those at the executive level.

3 Communication

To assist with maximizing opportunities for women, Anaconda is committed to outreach with a range of stakeholder organizations and institutions to improve opportunities for women through the following activities:

- Use appropriate language and imagery in all job advertisements and other communications to encourage women to apply for all job opportunities. A gender equity and diversity statement will be included in any such promotional materials related to the development of Argyle;
- Outreach to organizations supporting women in science, trades and technical occupations such as the Office to Advance Women Apprentices (OAWA), Women in Resource Development Corporation (WRDC), Women in Science and Engineering Newfoundland and Labrador (WISE), the Provincial Advisory Council on the Status of Women (PACSAW) the NL Department of Advanced Education, Skills and Labour and the Women's Policy Office;
- Work with education and training institutions and relevant industry and stakeholder organizations to provide awareness of job opportunities and the necessary skills required associated with Argyle;
- Participate in information sessions at the community level in collaboration with government and non-government stakeholders;
- Provide support for Women's Job Information workshops;
- Outreach to women business owners and business organizations such as the Newfoundland and Labrador Organization for Women Entrepreneurs (NLOWE) to share information about procurement processes;
- Include statements in tender documents to inform potential contractors of their obligation to comply with Anaconda's Women's Employment Plan through the employment and retention of women and in reporting the results of such efforts and outcomes with regards to their employment, particularly in non-traditional occupations;

- Incorporate gender-based analysis gathered from external stakeholders regarding women's employment and procurement into Anaconda's policy and workplace design decisions; and
- Develop and maintain a corporate culture and work environment within Anaconda that facilitates the achievement of the career goals of women and provides them with the training and support they need to assist them in meeting their goals and the goals of the company.

4 Monitoring

Anaconda will work closely with its main contractor(s) to ensure compliance with the Women's Employment Plan. Anaconda will hold meetings with contractors to clarify and address any issues with implementation of the Women's Employment Plan.

Anaconda will compile a bi-annual report that will include quantitative and qualitative descriptions of the following:

- The representation (number and percentages) of workers (by gender), location and NOC according to each occupational group;
- The duration of work (hours) broken down by gender and location;
- An update of qualitative supports/initiatives undertaken to encourage the employment of qualified women and to ensure a respectful workplace.

Anaconda Contacts:

Linus Doyle
Safety & Human Resources Coordinator
ldoyle@anacondamining.com

Lynn Hammond
Vice President Public Relations
lhammond@anacondamining.com

Appendix: Employment Targets by Occupational Group

Occupation (NOC)	FT/PT/ Seasonal	# of Employees	Target Female (%)	Direct Hire (DH) or Contractor (CT)	Estimated Timeframe
Project Management (0211)	FT	2	50%	DH	2.5 years
Administration (1111, 1432, 1414, 1221)	FT	4	75%	DH	2.5 years
Supervisors of Skilled Trades (8221, 9211, 7301, 7302)	FT	12	10%	DH & CT	2.5 years
Semi-Professionals, Technicians (2113, 2212, 2143)	FT	4	25%	DH & CT	2.5 years
Skilled Trades (7242, 7311, 9411, 9231, 7372, 7511, 7521)	FT	36	20%	DH & CT	2.5 years
Manual Workers/Labourers (8614)	FT & PT	5	20%	DH & CT	2.5 years
Apprentices (2212)	PT	3	33%	DH	2.5 years

Meeting Minutes/Notes

Public Information Session (Ming's Bight) – Sept. 6, 2018

EPR – Argyle Project

Introduction (Jordan Cramm)

- Update on where we are with the Project
    - Environmental Assessment (EA) to the Environmental Preview Report (EPR)
- Information sessions @ Ming's Bight are used in the planning process

Presentation/Slideshow (Graeme Forrest)

- Conceptual Site Layout changes since last meeting
- Overview of construction and operation
- Overview of closure
- EPR
    - Comments from various departments including the Town of Ming's Bight
    - Wildlife Division – Botanical Survey for S2S3 ranked plant
    - Water Resources – Water Quality Management Plan
        - Testing sites and locations
    - Best Management Plan
        - Community Feedback
        - Noise, dust vibrations (ground and overpressure) mitigation measures
        - Monitoring Locations
    - Other additional comments from EPR committee
    - Town of Ming's Bight
        - Consultation
        - Permitting – Development Permit
        - Community Feedback
        - Community Liaison Committee
- Updated project timeline

Questions/Comments (Jordan Cramm/Graeme Forrest)

Q1: Water Quality Testing Periods?

- 4 times per year plus additional testing as required due to blasting or other development
- Testing results sent to Water Resources and the Town

Q2: What ponds are in the blast radius (500m)?

- Bear pond, approx. 50m inside

Q3: Where does Anaconda get water from for Project

- Small pond to the south of the Project
- Must be permitted
- Some processing/human needs require fresh water and other needs in the mill require reclaim water
    - Reference to Pine Cove operations

Q4: Blasting Pattern? People experiencing vibrations in the Town.

- Preshear are the smallest pattern but generate the most vibrations
    - Searching for other products to use
    - Adapt procedures from Timmins, if applicable
- Production pattern is 3m x 3m x 5m bench with a 1m collar
    - Proper stemming has provided best results and less vibrations
- Monitoring has been done to determine the blasting effects
    - Vibrations and noise
- Max vibrations reading to date is 2.3 mm/s

Q5: Hole Diameter

- 4” holes
- Resident suggested a 2.5m collar
- We will look into other options for blasting that minimize vibrations and provide good results

Q6: Difference between here and Timmins with respect to elevation between the Town and mine?

- We are at a higher elevation difference
- Guidelines associated with the amount of vibrations acceptable
- Max blast that we have is approximately 20,000t

C1: Protection for the Town is of the utmost importance in the minds of Anaconda. Sound will be evident but negative structure effects will be prevented

C2: Production of local jobs and taxation for the Town

Q7: What jurisdiction is the mine in?

- Ming’s Bight

Q8: Reclamation Program?

- Presently 2.6 million for present operations held in bonding for reclamation and closure
- Times have changed regarding what is acceptable for closure
- Waste rock sales, that we have done to date, helps footprint and will be explored
- We are from the area and that makes a difference
- If a company bails out, the bonding assurance protects the community and environment for reclamation
- Bonding requirements are a result of the days past

Q9: Any changes in lasting affects since last meeting and changes to the times were implemented (Questions from Jordan to the attendees)

- Earlier in the day is not as noticeable
- Blasting twice a week but public has not heard many lately and not as noticeable

Q10: Any issues with water contamination?

- No issues with contamination
- Dust is not an issue according to blasting near Pine Cove Pond and sampling results to date
- Regulations protect these water sources
- Windspeed and direction will be considered

Anaconda Mining

Public Information Session
Ming's Bight (Argyle) Gold Mine

Sign-In Sheet

All attendees are asked to please sign in below as a record of attendance for the Department of Municipal Affairs and Environment for the Public Information Session held on September 6, 2018 at the Ming's Bight Town Hall.

#	Name (please print)	Contact Number
1	TED REGULAR	204 870 0618
2	Timmy Fudge	709 293 4566
3	Charlene Drover	709 660 2755
4	Roxanne Dicks	709 254 8121
5	Ted Brown	709 254 6416
6	Juanita Burden	- 254-6148
7	David Wilkinson	254-6148
8	Gail Regular	254-7521
9	Sharlene Foster	254-6231
10		
11		
12		
13		
14		
15		
16		
17		
18		

Average Ambient Noise Level Monitoring (Baseline Data)

Location: 1 (Argyle Parking Lot)

Date:	Time:	Wind Gust:	Weather:	Average (dB)	Minimum (dB)	Maximum (dB)
Tuesday (July 3, 2018)	10:30 AM - 10:50 AM	30 km/h	Sunny, Clear skies. 26◦C.	42.6	39.0	53.0
Wednesday (July 4, 2018)	12:00 PM - 12:20 PM	13 km/h	Sunny, 26◦C.	45.4	39.5	67.1
Thursday (July 5, 2018)	1:54 PM - 2:14 PM	4 km/h	Sunny, 12◦C.	34.5	32.4	68.3
Monday (July 9, 2018)	1:38 PM - 1:58 PM	45 km/h	Cloudy, 25◦C.	51.5	42.2	71.8

Location: 2 (Ming's Bight Play Ground)

Date:	Time:	Wind Gust:	Weather:	Average (dB)	Minimum (dB)	Maximum (dB)
Tuesday (July 3, 2018)	2:40 PM -3:00 PM	50km/h	Slight Overcast. 24◦C.	47.2	37.7	76.4
Wednesday (July 4, 2018)	12:30 PM - 12:50 PM	13 km/h	Sunny 26◦C.	46.2	36.2	64.2
Thursday (July 5, 2018)	2:30 PM - 2:50 PM	4 km/h	Sunny, 12◦C.	47.3	43.1	56.8
Monday (July 9, 2018)	2:08 PM - 2:18 PM	45 km/h	Cloudy, 25◦C.	51.5	48.8	72.4

Blasting Vibration and Aiblast/Overpressure (Baseline Data)

Blast Number	Blast Date	Location	Distance From Blast (m)	und Vibration (mr	Air Blast (dB)	Equipment Used	Weather
28	19-Jun-18	Argyle Parking L	900	n/a	n/a	Micromate	cloudy
28	19-Jun-18	Town Hall	2400	n/a	n/a	Micromate	cloudy
28	19-Jun-18	Playground	2500	n/a	n/a	Micromate	cloudy
29	22-Jun-18	Argyle Trail	500	0.378	142	Micromate	clear skies
29	22-Jun-18	Argyle Parking L	900	n/a	86	PCE MSM 4	clear skies
29	22-Jun-18	Town Hall	2400	n/a	n/a	Micromate	clear skies
29	22-Jun-18	Playground	2500	n/a	n/a	Micromate	clear skies
30	26-Jun-18	Argyle Parking L	900	n/a	n/a	Micromate	cloudy
30	26-Jun-18	Playground	2500	n/a	n/a	Micromate	cloudy
30	22-Jun-18	Playground	2500	n/a	65.5	PCE MSM 4	cloudy
38	17-Jul-18	Playground	2500	1.892	92	Micromate	clear skies
36	20-Jul-18	500 m mark	500	2.27	126.3	Micromate	clear skies
40	07-Aug-18	500 m mark	500	0.9025	87.5	Micromate	cloudy
42	16-Aug-18	500 m mark	500	0.093	103.6	Micromate	cloudy

RE: EA Registration 1959 - Ming's Bight (Argyle) Gold Mine - Wetland Buffer

Fenske, Jana <janafenske@gov.nl.ca>

Mon 9/10/2018 2:48 PM

To: Graeme Forrest <gforrest@anacondamining.com>;

Cc: Jordan Cramm <jcramm@anacondamining.com>; Barney, Wayne <waynebarney@gov.nl.ca>;

Graeme,

The 30m undisturbed buffer is a general guideline that allows a lesser degree of negative impact to a wetland from surrounding disturbances. The *Sparganium fluctuans* was found on the west end of the wetland and therefore protected from the proposed berm – as long as the water level/ wetland is not impacted. As long as the proposed pit wall crest and ditches do not interfere with the function of the wetland, we support the monitoring proposal as mention below:

"We are proposing that a 10-15 m buffer be set along the southern-most (SE) boundary of the wetland complex, with the condition that Anaconda monitor the wetland and its functionality throughout the year and have a third-party inspection of the wetland when the Sparganium fluctuans is in bloom to ensure that the operations are not having an adverse effect on the wetland complex or S2S3 plant species. If the wetland is found to be affected, Anaconda will explore options to offset these effects in consultation with the Wildlife Division."

Thank you for the inquiry.
Regards,

Jana

Check out our current edition of **Our Wildlife**

The smaller the creature, the bolder its spirit. *Suzy Kassem*

From: Graeme Forrest [mailto:gforrest@anacondamining.com]
Sent: September 4, 2018 3:24 PM
To: Fenske, Jana <janafenske@gov.nl.ca>
Cc: Jordan Cramm <jcramm@anacondamining.com>
Subject: EA Registration 1959 - Ming's Bight (Argyle) Gold Mine - Wetland Buffer

Jana,

I understand you are just returning from vacation and no doubt have a lot of work to catch up on. I just have a few things to run by you as you are our Wildlife Division point of contact for the Argyle EPR.

Regarding the 30 m buffer around the wetland complex that is north of the open pits, we are wondering if the buffer could be set at 10-15 m, only around the southern-most boundary of the wetland complex. The main reason for requesting this is that a 30 m buffer in this area has a large impact on the resource availability of the deposit at depth. The highest grades of ore are found on the lower benches, which would not be recoverable with a 30 m buffer. The remaining area of the wetland complex will still have a 30 m undisturbed buffer, and the location of the Sparganium fluctuans will still be approximately 65 m from the open pit.

We are proposing that a 10-15 m buffer be set along the southern-most (SE) boundary of the wetland complex, with the condition that Anaconda monitor the wetland and its functionality throughout the year and have a third-party inspection of the wetland when the Sparganium fluctuans is in bloom to ensure that the operations are not having an adverse effect on the wetland complex or S2S3 plant species. If the wetland is found to be affected, Anaconda will explore options to offset these effects in consultation with the Wildlife Division.

With a 10-15 m buffer, the wetland boundary is 10-15 m from the pit crest and the wetland water level is approximately 20 m from the pit crest. The location of the Sparganium fluctuans will be 65 m from the nearest location of the open pit, and 45 m from the nearest location of the ditching network. The attached figures show this area and the mentioned distances.

As required, we will have ditching systems in place to prevent surface runoff into the wetland, and the pit wall crest will essentially meet the edge of the 10-15 m buffer zone. Operational controls, such as routine maintenance, dust mitigation and proper blast design will eliminate any potential impacts on the wetland complex. Anaconda also understands that no development is permitted inside the wetland without approval from Water Resources Management Division and the Wildlife Division (due to the presence of the Sparganium fluctuans).

Anaconda is willing to implement these measures and are open to suggestions on further mitigation measures in an effort to have the wetland buffer set at 10-15 m along the southern boundary and have the ability to recover the ore material at depth. Please let me know if what is being proposed will be sufficient, or feel free to give me a call to discuss how we can achieve this.

Thanks,
Graeme

Anaconda Mining

Graeme Forrest |
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