CAPSTONE MINING CORP.

MINTO MINE

OPERATED BY MINTO EXPLORATIONS LTD.

Minto Mine Phase V/VI Expansion
Waste Rock and Overburden Management Plan

June 2013

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1 Introduction

The objectives of the Phase V/VI Waste Rock and Overburden Management Plan (WROMP) are to define the categorization and quantities of both waste rock and overburden that will be produced during Phase V/VI mining, and to summarize how Minto proposes to manage these materials.

Phase V/VI mining activities will consist of open pit mining from four separate pits as well as underground mining accessed by portals at two locations. This document focuses primarily on the management of waste rock and overburden produced from mining of the open pits, and incorporates storage of waste rock produced underground and brought to surface into the overall disposal strategy.

2 Background

Minto Mine has been in operation since 2007; the current (2013) mining activities are collectively referred to as 'Phase IV' and will transition into Phase V/VI upon receipt of appropriate authorizations. Because the Phase V/VI WROMP will build on the site configuration that results from Phase IV operations, an overview of key Phase IV site components is provided here to establish context.

2.1 Key Phase IV Site Components for Management of Waste Rock and Overburden

The Phase IV site components that relate to the management of Phase V/VI waste rock and overburden are shown on the plan of arrangement (Figure 1) and briefly described here.

- Main Pit
  - The Main Pit is centered in the Minto Creek valley west of the mill area. It hosted the Minto deposit, which was the first deposit mined at the Minto Mine. Mining in the Main Pit ended in April 2011 with the completion of the Stage 5 push-back. The tailings management plan for Phase IV entails filling the Main Pit with slurry tailings, the deposition of which began on November 1, 2012.
- Area 2 Pit
  - The Area 2 Pit is located south of the mill area and southeast of the Main Pit. As part of the Phase IV mine plan, the pit is mined in two stages, the first of which was started in April 2011. The second stage, and the final one approved as part of Phase IV, pushes back the walls and deepens the pit; it is expected to be completed in Q1 2014. Once open pit mining of Area 2 Stage 2 is complete, it is scheduled to receive slurry tailings under the final stages of the Phase IV mine plan.
- Area 118 Pit
  - The Area 118 Pit is a small pit that is scheduled to be the final open pit mining under the Phase IV mine plan. It will be located uphill and southwest of the Area 2 Stage 2 Pit, and is scheduled to be backfilled with waste rock as part of the Phase IV reclamation activities.
- Main Waste Dump (MWD)
  - The MWD is located west of the Main Pit, and was the first waste rock storage facility constructed at Minto. The MWD contains waste rock from the initial phases of mining in the Main Pit, and is at its original design capacity.
- Southwest Waste Dump (SWD)
  - Construction of the SWD began in March 2009; it has received waste rock continuously since that time, initially from the final stages of mining of the Main Pit, and later from mining of Area 2 Pit

(Stage 1 and Stage 2). Expansions of the dump's height and footprint were permitted as part of Phase IV.

- Dry Stack Tailings Storage Facility (DSTSF)
    - The DSTSF received the mine's tailings output until the licensing of Phase IV authorized Minto to begin using the completed Main Pit for tailings storage. Tailings placement in the DSTSF ended on October 31, 2012. The DSTSF contains all tailings from milling of Main Pit ore as well as tailings from approximately seven months of milling of Area 2 ore.
- Mill Valley Fill Extension (MVFE)
    - This dump is located at the toe of the DSTSF in the Minto Creek valley, immediately east of the original Mill Valley Fill that was constructed early in the mine life to provide space for milling and related activities. Construction of the MVFE was proposed as part of the Phase IV mine plan as a buttress to mitigate the down-slope movement of the DSTSF.
- South Wall Buttress (SWB)
    - The SWB is a rockfill structure that is designed to buttress the south wall of the Main Pit and preserve the remaining volume in the Main Pit for tailings and water storage purposes. Construction of the SWB began in May 2011 and it has received rock from the Area 2 Stage 2 Pit since that time. It is scheduled for completion to its design capacity during the period of open pit mining under the Phase IV mine plan.
- Reclamation Overburden Dump (ROD)
    - The ROD is located west of the MWD, and contains overburden materials released from both the Area 2 Pit and the Main Pit. The ROD has capacity to store additional overburden material that will be released during Phase V/VI.

2.2 Overview of Phase V/VI Mine Plan

The components of the proposed Phase V/VI mine plan that will release overburden and waste rock are shown in Figure 2 and comprises the:

- Minto North Pit;
- Area 2 Stage 3 Pit;
- Ridgetop South Pit;
- Ridgetop North Pit;
- Minto South underground;
- East Keel underground;
- Wildfire underground.

The schedule for the development of the open pit mine components is shown in Figure 3 through Figure 5. Underground mining is not shown, but will be in progress when Phase V/VI begins and run until December of 2019; the small quantities of waste rock release are accounted for in this plan's dump volumes but are not scheduled out in detail. The remainder of this document summarizes the plans for management of the waste rock and overburden that will be mined as part of Phase V/VI.

MINTO MINE EXPANSION PHASE V/VI

FIGURE 1

KEY PHASE IV SITE COMPONENTS

JULY 2013

Minto Explorations Ltd.
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- Phase IV Tailings
- Phase IV Dumps
- Phase IV Pits

ACCESS

Aerial imagery obtained from Challenger Geomatics. Imagery acquired August 14th 2012.

Datum: NAD 83 Projection: UTM Zone 8N

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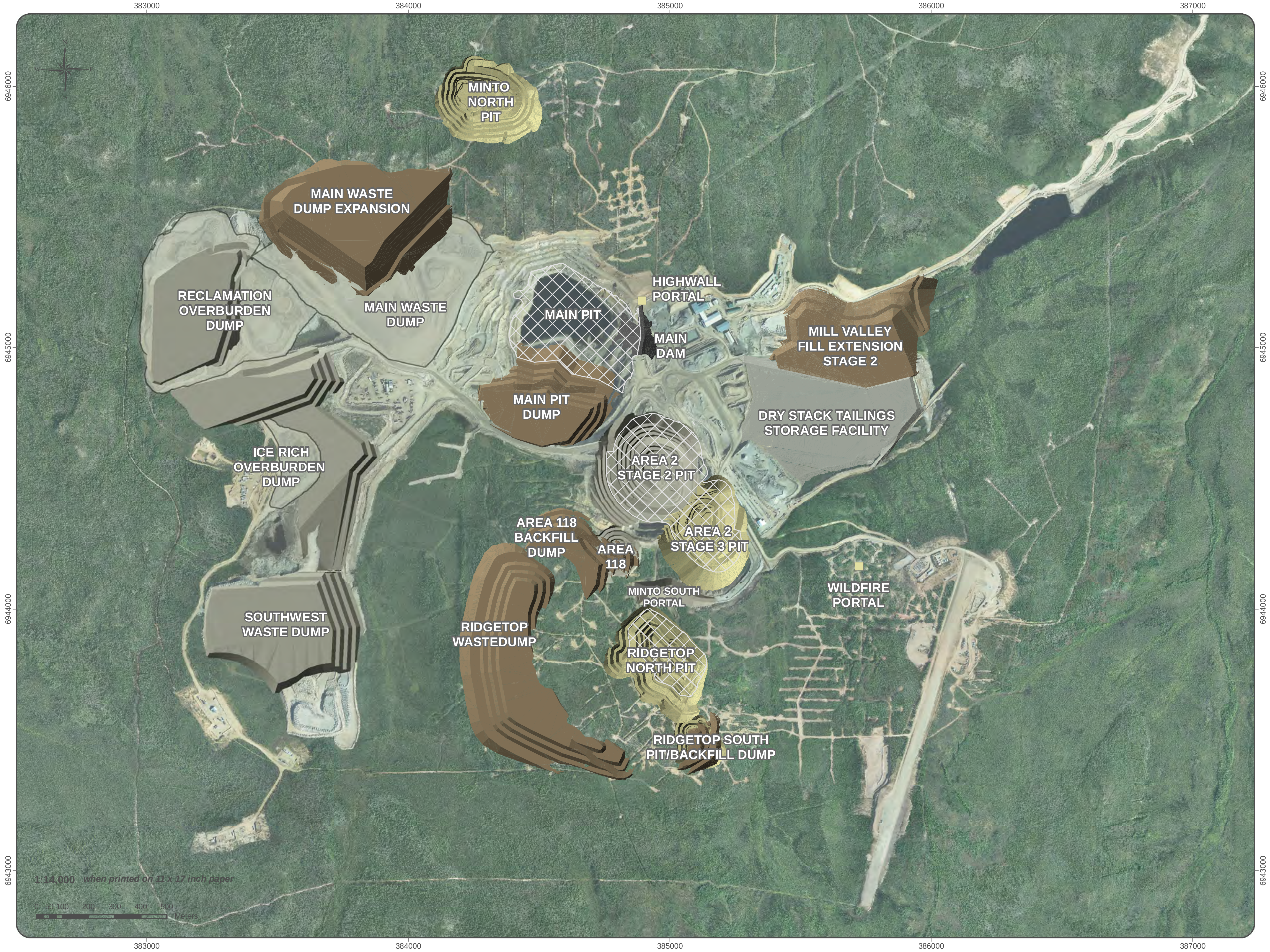

MINTO MINE PHASE V/VI EXPANSION

FIGURE 2
KEY PHASE V/VI SITE COMPONENTS

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- Phase V/VI Tailings
- Phase V/VI Pits
- Phase V/VI Dumps
- Phase V/VI Dam
- Phase IV Features

ACCESS

Aerial imagery obtained from Challenger Geomatics. Imagery acquired August 14[th] 2012.

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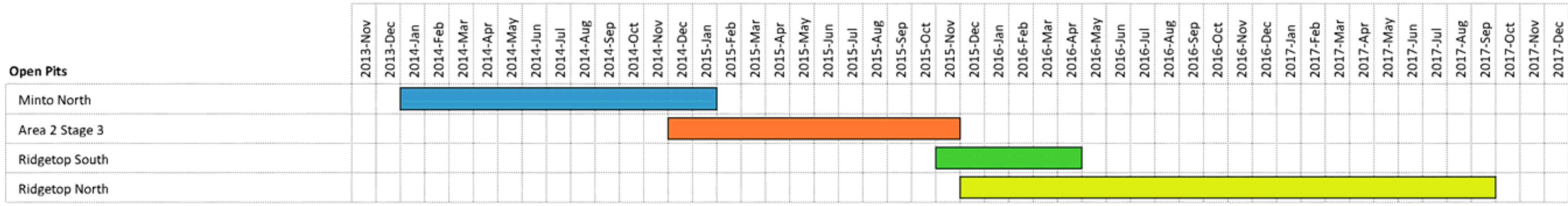

Figure 3: Phase V/VI Open Pit Mining Schedule.

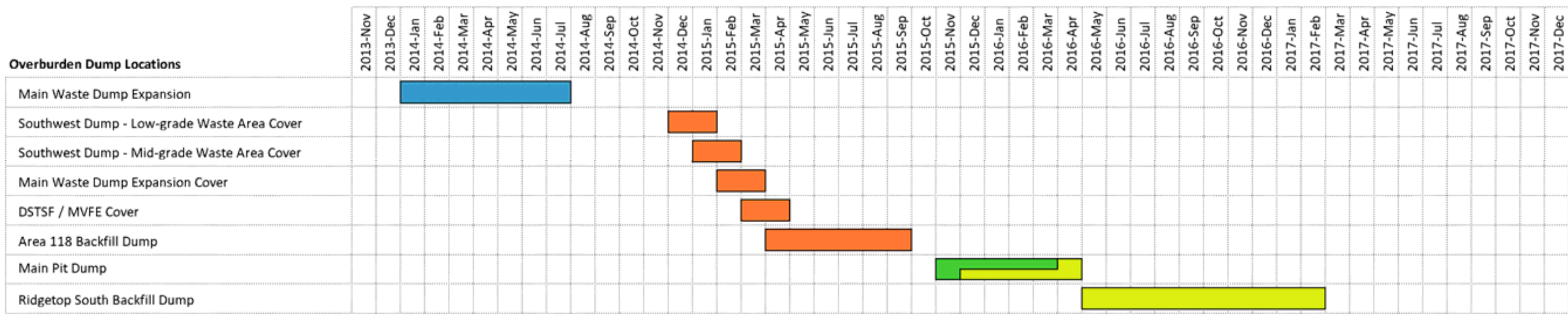

Figure 4: Phase V/VI Overburden Placement Schedule.

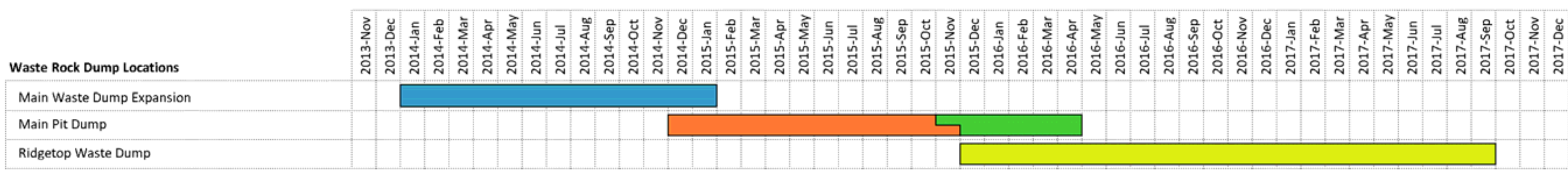

Figure 5: Phase V/VI Waste Rock Placement Schedule.

3 Summary of Phase V/VI Materials Release

3.1 Waste Rock and Overburden

The volumetric breakdown of total waste rock and overburden that will be released through Phase V/VI mining activities is shown in Table 1 and Table 2, respectively. For clarity, a bank cubic meter (BCM) is a measure of material volume (rock or overburden) in the ground, prior to mining. The process of blasting, transporting, and dumping the material increases the void space present in it; in this document, the volume of the material, when dumped, is quoted in m^3. A factor of 1.30 is applied to convert the above values into loose cubic meters (m^3).

Table 1: Volume of Waste Rock Released from Phase V/VI Mine Components.

Source Location	Quantity (BCM)	Swell Factor	Waste Rock Volume (m^3)
Minto North	3,269,000	1.3	4,250,000
Area 2 Stage 3	1,465,000	1.3	1,905,000
Ridgetop South	482,000	1.3	627,000
Ridgetop North	2,628,000	1.3	3,416,000
Underground	102,000	1.3	133,000
		Total Waste Rock (Phase V/VI)	**10,331,000**

Table 2: Volume of Overburden Released from Phase V/VI Mine Components.

Source Location	Quantity (BCM)	Swell Factor	Overburden Volume (m^3)
Minto North	697,000	1.3	906,000
Area 2 Stage 3	2,230,000	1.3	2,899,000
Ridgetop South	135,000	1.3	176,000
Ridgetop North	702,000	1.3	913,000
Underground	0	1.3	0
		Total Overburden (Phase V/VI)	**4,894,000**

3.2 Allowance for Waste Rock with NP:AP<3

During mining of the Main Pit, operational monitoring of waste rock for acid base accounting (ABA) parameters was carried out in accordance with water licence conditions. The results of that operational monitoring confirmed that the ABA characteristics of Main Pit waste rock were consistent with expectations based on pre-production testing (i.e., it could be classified as non-acid generating (NAG)). The water licence defined NAG material as material having a ratio of neutralization potential (NP) to acid potential (AP) greater than 3 (NP:AP>3).

During the metal leaching and acid rock drainage investigations that formed the basis of the Phase IV waste management strategy, a small proportion of drill core samples from the future Area 2 Stage 2 Pit were identified as having NP:AP<3. Due to the large proportion of samples with NP:AP>3, it was concluded that bulk disposal of waste rock was appropriate and that no allowance for separate disposal of NP:AP<3 material was required.

After Phase IV mining was under way, operational monitoring of Area 2 waste rock in 2012 using an off-site commercial laboratory indicated that the proportion of waste rock with NP:AP<3 was higher than anticipated from the pre-production testing. To minimize the long-term risk of development of acidic leaching conditions and associated high metal loadings, the mine adapted the waste rock management strategy to include on-site classification, and separate storage of waste rock with NP:AP>3 and NP:AP<3. To ensure that waste rock with NP:AP<3 would be stored in a location that would be saturated over the long term, the mine initiated dispatching of waste rock with NP:AP<3 to the mined-out Main Pit.

In order to ensure that sufficient saturated storage was available in Phase V/VI, there was a need to estimate the volume of NP:AP<3 rock that would be produced. The Phase V/VI pre-production testing on drill core samples presented a similar range of results for the Area 2 Stage 3 Pit (A2S3), the Ridgetop North Pit, and the Ridgetop South Pit as were found for the Phase IV deposits (i.e. there would not be significant waste rock volumes having NP:AP<3); however, Minto elected to plan for a certain volume of PAG release from Phase V/VI to ensure that sufficient storage volume below final water table elevations was reserved. Drill core from the waste rock intervals within the planned Minto North Pit had uniformly low total sulphur content and NP:AP>3, and on that basis, no allowance for waste rock with NP:AP<3 was made for Minto North.

Two independent methods were used to estimate saturated storage volumes that should be reserved for waste rock storage. These methods are described elsewhere in detail (SRK 2013a) and are summarized here for completeness.

- The first method was to review the production data from Phase IV mining in the Area 2 Pit and calculate the proportion of total waste rock volume that was determined to have NP:AP<3. This approach was based on samples collected and analysed (on-site) from every blast hole beginning in August 2012, with results interpreted by mine geologists and transmitted to pit operations for excavation and dispatching to either in-pit (for NP:AP<3 waste rock) or ex-pit (for NP:AP>3 waste rock) dump locations.
    - This approach indicated that roughly 17% of the waste rock assessed had NP:AP<3.
- The second method was to create a sulphur block model for the Phase V/VI Minto South pits (A2S3, Ridgetop North, and Ridgetop South) based on sulphur assays from exploration drill core. This approach consisted of estimating sulphur grades for all rock within the pit shells and calculating the volume of rock that was both below ore grade for copper and higher that 0.3% total sulphur (rock with lower than 0.3% sulphur was found to correlate well with rock with NP:AP>3).
    - This approach indicated that roughly 13% of the A2S3, Ridgetop North and Ridgetop South waste rock could be expected to have NP:AP<3.

For planning purposes, Minto has chosen to allow for 20% of the waste rock from the Minto South pits to be stored in locations that will be saturated post-closure. This approach is considered to be appropriately conservative in that it will ensure that more volume will be reserved for NP:AP<3 waste rock than will likely be produced. Actual dispatching of waste rock from the Minto South pits will be done on the basis of blast hole analyses, not pre-production estimates. Table 3 Summarizes the volumetric allowances that have been made for NP:AP<3 waste rock in Phase V/VI.

Table 3: Allowance for NP:AP<3 Waste Rock Volumes in Phase V/VI Waste Management Planning.

Source Location	Total Phase V/VI Waste Rock Volume (m^3)	Estimated Quantity of NP:AP<3 Waste Rock Volume (m^3)
Minto North	4,250,000	0
Area 2 Stage 3	1,905,000	381,000
Ridgetop South	627,000	125,400
Ridgetop North	3,416,000	683,200
Underground	133,000	26,600
Total Waste Rock (Phase V/VI)	**10,331,000**	
Total NP:AP<3 (Phase V/VI)		**1,216,200**

A summary of saturated storage locations for NP:AP<3 material is presented in the Phase V/VI Tailings Management Plan (Minto 2013).

To address the uncertainty around the estimation of NP:AP<3 volumes, this plan provides ex-pit dump capacity for the total volume of waste rock released by Phase V/VI mining; that is, 10,331,000 m^3.

4 Waste Rock Management

4.1 Introduction

Planning for storage of Phase V/VI waste rock began with estimation of the quantities of waste rock expected and consideration of alternatives for storage that would contain the required volumes. Alternatives were evaluated against a suite of criteria that included foundation stability, drainage control, minimizing the need for re-handling during closure, and developing landforms that would be appropriate for closure. The outcomes of that evaluation process were summarized in a memorandum (SRK 2013b).

As noted in Section 3.2, the Phase V/VI waste rock has been classified into two categories based on ABA characteristics. These two categories are “bulk waste rock” and “NP:AP<3 waste rock”; the two categories have different storage considerations. Management of each category of waste rock is discussed separately in the following sections.

4.2 Bulk Waste Rock

Waste rock from Phase V/VI operations will be stored in three primary facilities: an expansion to the Main Waste Dump, and two new waste dumps developed in Phase V/VI (Main Pit Dump and Ridgetop Waste Dump). There is also flexibility to divert waste rock from the Main Pit Dump to expand the Mill Valley Fill Extension if geotechnical studies demonstrate that additional buttress mass is required.

To ensure that sufficient dump volume is available to store all bulk waste rock, the Phase V/VI dumps have been designed to contain 100% of Phase V/VI’s waste rock volume. As a portion of the Phase V/VI waste rock will be classified as NP:AP<3 and stored separately, the Phase V/VI dump designs contain more capacity than will ultimately be required. Design capacities for each Phase V/VI dump are listed in Table 4.

Table 4: Waste Rock Dump Capacities.

Dump Location	Dump Capacity (m^3)
Main Waste Dump Expansion	5,156,000
Main Pit Dump	3,014,000
Ridgetop Waste Dump	3,416,000
Mill Valley Fill Extension stage 2 (optional)	2,930,000

The following sections summarize plans for each of the facilities that will (or may) receive Phase V/VI waste rock.

4.2.1 Main Waste Dump Expansion

The MWD (Main Waste Dump) is closest to Minto North and thus represents an ideal location for its waste rock and overburden. The existing MWD is built on a foundation of solid rock and has exhibited no signs of creep movement thus far; this makes an expansion of the dump an attractive concept from a geotechnical perspective.

To minimize the potential for water quality impacts in the McGinty Creek catchment in which the Minto North deposit is located, all Minto North waste rock and overburden will be stored in the Main Waste Dump Expansion (MWDE), which is wholly located within the Minto Creek catchment. As such, the MWDE has been designed to accommodate the storage of 906,000 m^3 of overburden and 4,250,000 m^3 of waste rock from Minto North, for a total design volume of 5,160,000 m^3.

Dump development will begin from the north and advance to the south, allowing an overburden pile to be created in the northwest corner of the dump. This overburden placement strategy is illustrated in Figure 6, with the overall dump design in Figure 7. As the dump develops, waste rock will be placed around the overburden pile and against its front slope, eventually buttressing it and thereby obviating any stability concerns. Should Minto North produce ice-rich overburden, it can be effectively contained in this zone without the need to segregate it.

In Minto North, overburden is released in parallel with a larger quantity of waste rock for the first 11 of the pit's 23 benches (each of which is 6m high). Deposition of waste rock will therefore take place in parallel with overburden; while Figure 6 shows the overburden as a free-standing pile, it will be partly contained even during dump development.

The storage of 5.16 Mm^3 is achieved by increasing the elevation of the MWD from 930 m to 961 m. Figure 8 provides a perspective view (looking northwest) of the facility design in relation to the Minto North Pit.

The dump's faces are designed at a 2.5H:1V slope to simplify reclamation. A 15 m-wide bench is included at the 930 m elevation to allow for dumping of reclamation overburden from that height and to provide a platform for the installation of a water interception ditch. This bench brings the overall slope to approximately 3H:1V.

The MWD expansion provides the required volume—4.9 Mm^3—while introducing only an additional 10.44 ha of land disturbance (Figure 9).

The dump is designed to avoid impinging upon the footprints of the low-grade and partially-oxidized ore stockpiles since, in the current mine plan, these stockpiles won't be depleted by the time mining commences in the Minto North Pit.

Figure 6: Overburden Zone within the Main Waste Dump Expansion.

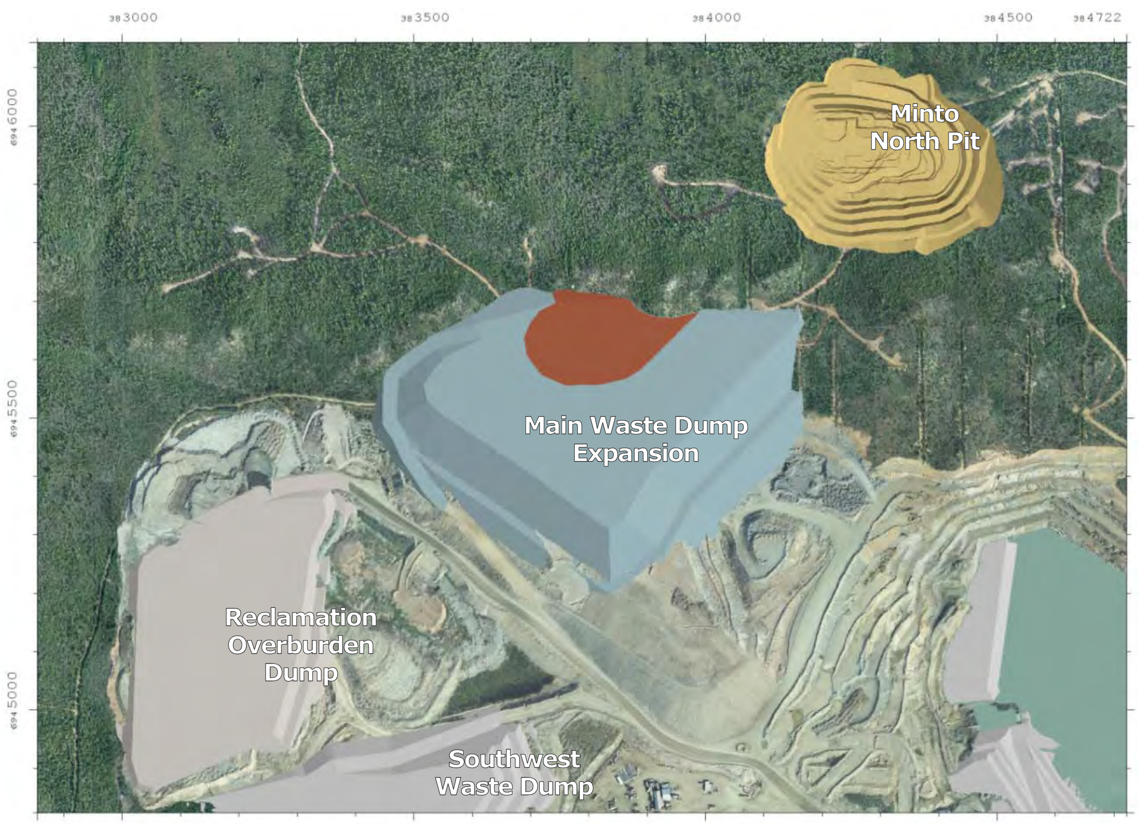

Figure 7: Main Waste Dump Expansion.

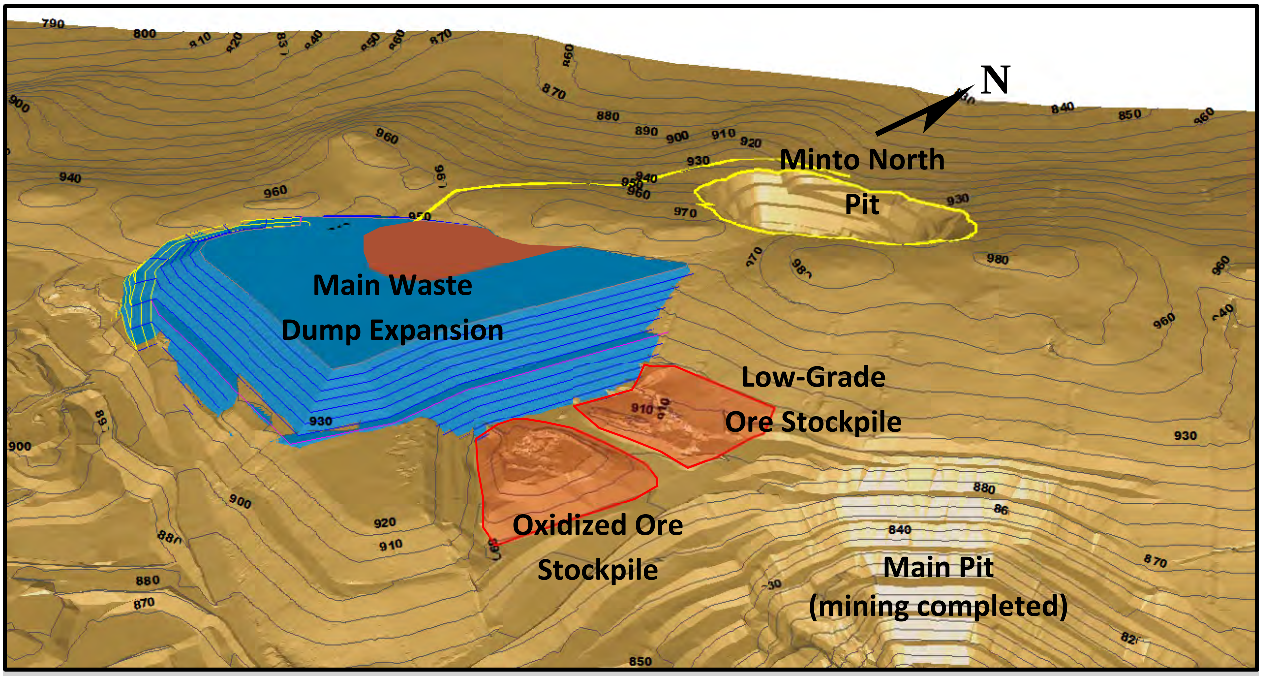

Figure 8: Perspective View of the Main Waste Dump Expansion, the Minto North Pit, and the Haul Road between them.

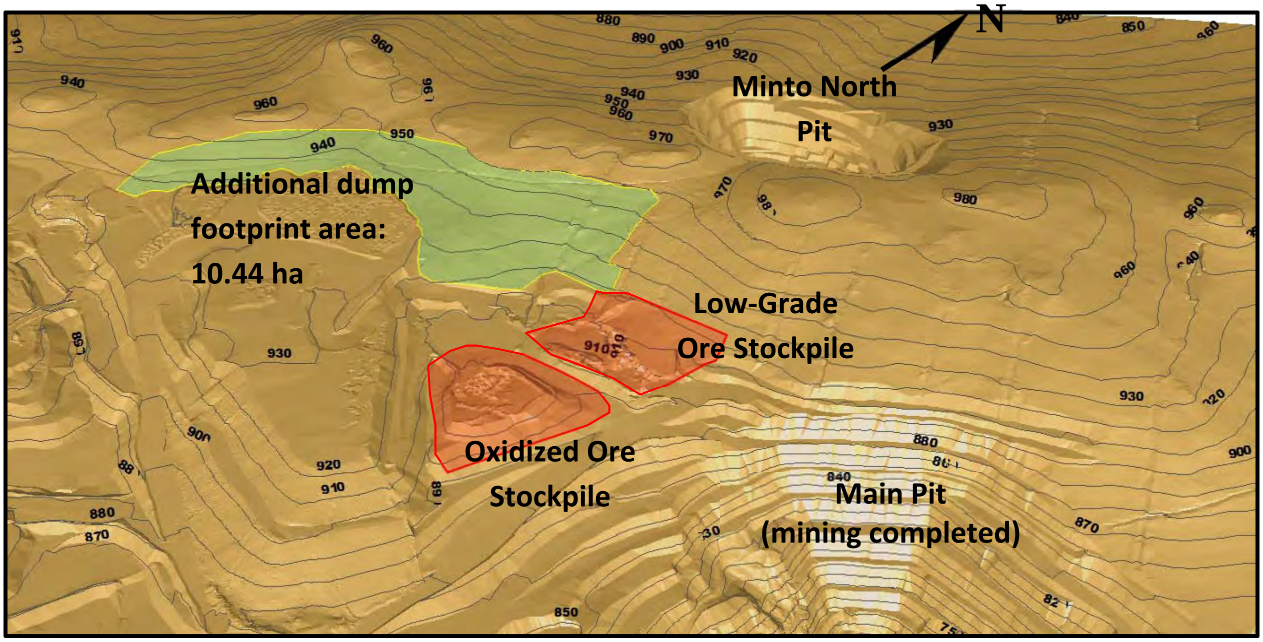

Figure 9: Perspective View of the Additional Footprint Taken by the Main Waste Dump Expansion.

4.2.2 Main Pit Dump

The basic principle of the Main Pit Dump (MPD) design is to use the footprints of the completed Main Pit (Figure 10 and Figure 11) and the south wall buttress to store waste rock. The MPD will receive 2.67 Mm^3 of waste rock from A2S3, as well as from Ridgetop South and underground. It will also receive 349,000 m^3 of overburden from both Ridgetop South and North, bringing the total volume requirement to 3.01 Mm^3.

The design reaches a maximum elevation of 840 m, with its crest reaching the southwest rim of the Main Pit; the design is fully contained within the existing pit footprint.

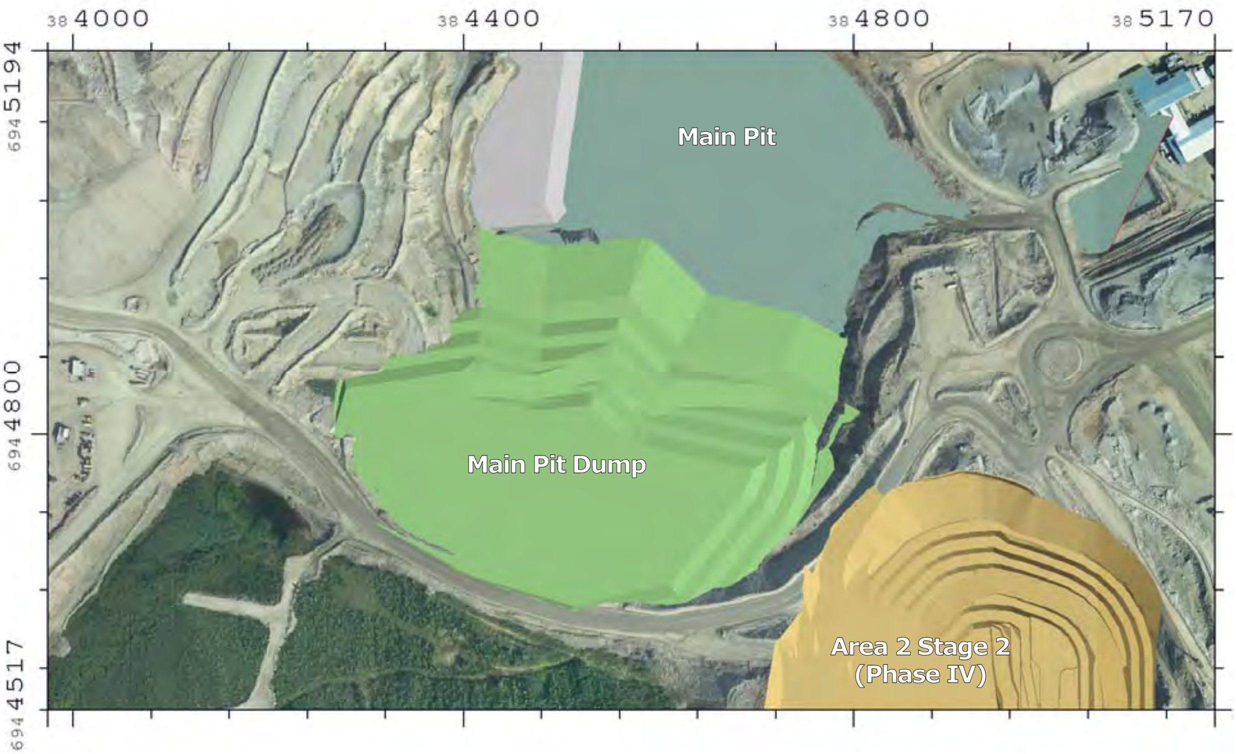

Figure 10: Plan View of the Main Pit Dump.

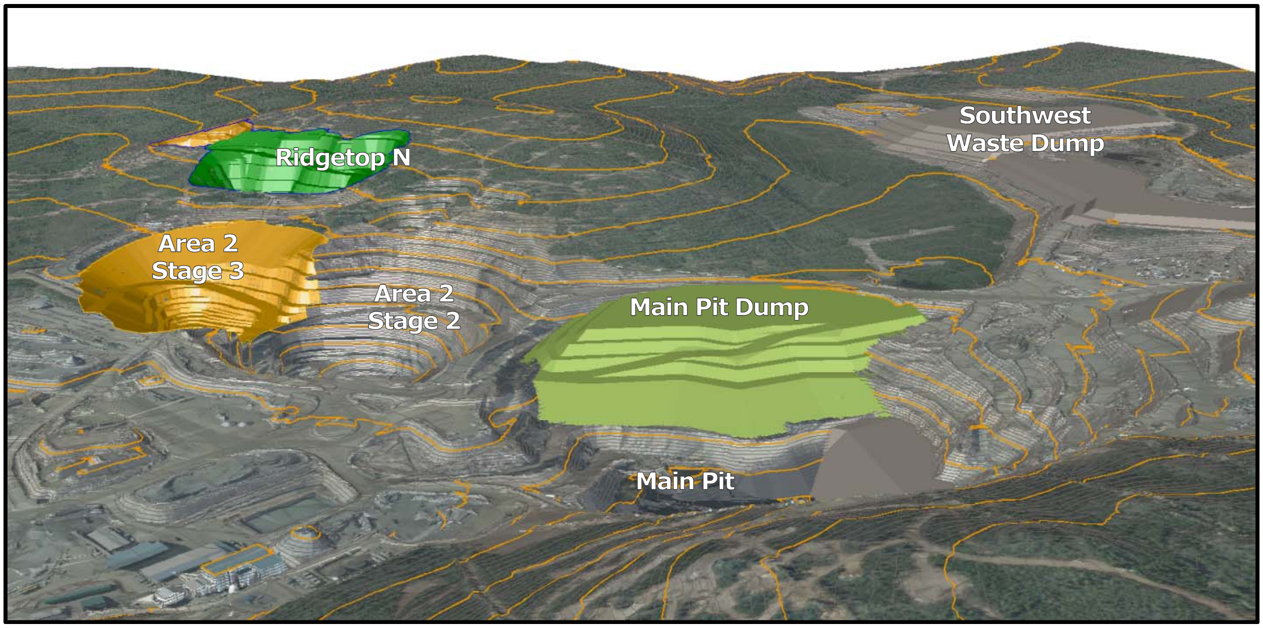

Figure 11: Perspective View (Looking Southwest) of the Completed Main Pit Dump.

The dump has 2.5H:1V slopes along its front face, and a catchment is included at 810 m elevation. This allows for dumping of reclamation overburden from that height and provides a platform for the installation of a water interception ditch. A 26 m-wide access road is designed into the front face of the dump above the 810 m elevation; this will become the primary access linking the east and west sides of the property. The combination of the bench and the road bring the average slope angle for the entire front face of the dump to approximately 32% (3.1H:1V).

The portion of the dump below the pit's spill elevation is designed to rest entirely upon the footprint of the Phase IV south wall buttress so as not to reduce the volume available for tailings in the Main Pit.

4.2.3 Ridgetop Waste Dump

The Ridgetop Waste Dump (RWD) concept was developed as part of the evaluation of alternatives for Phase V/VI waste storage (SRK 2013b). The proposed RWD is located west of, and on the opposite side of the ridge from, the Ridgetop North Pit (Figure 13 and Figure 14).

The RWD design was developed to take advantage of good foundation conditions (i.e. weathered bedrock and residual soils over a large area of the proposed dump footprint) and to avoid areas underlain by ice-rich overburden. A secondary design consideration was to locate the footprint of the RWD primarily on the west side of the north-south drainage divide located west of (and at higher elevation from) the Ridgetop pits; this would ensure that most of the RWD drainage would report to the western catchment (the W15 catchment) that already contains the SWD and the MWD, and would minimize the waste dump seepage reporting eastward to the eastern catchment (the W35 catchment).

The RWD will be constructed of waste rock from Ridgetop South. The dump is designed at an average slope angle of 3H:1V. The first lift of the dump will be constructed by end-dumping from the 930 m elevation, creating a slope approximately 30 m high at the angle of repose for waste rock (37°). A large bench has been left at this elevation to allow for eventual re-sloping to a 2.5H:1V face. Above this elevation, the dump will be constructed in three lifts, at 940 m, 950 m, and 960 m elevations. Catchments of sufficient size are left to create an average slope angle of 3H:1V: while dozer work will be required to smooth the dump surface, the overall slope angle will not be altered.

The RWD will have a capacity of 3.4 Mm^3; based on the mining schedule (Figure 3), all Ridgetop North waste rock will report to the RWD. The disturbance area of the reclaimed RWD is estimated to be 28.8 ha, of which 25.4 ha is located within the W15 catchment and 3.4 ha is within the W35 catchment; the dump's footprint is shown in Figure 12.

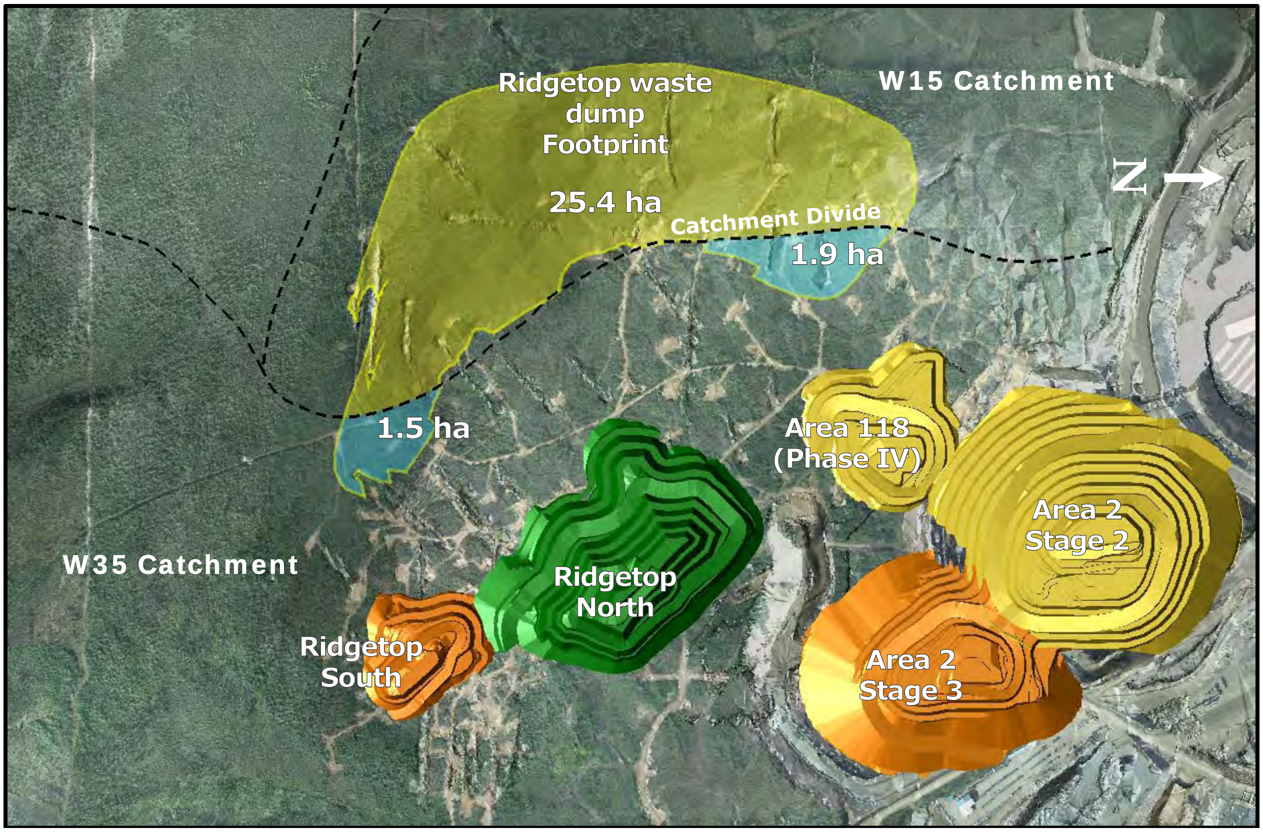

Figure 12: Footprint of the Ridgetop Waste Dump in Relation to Catchment Area Divisions.

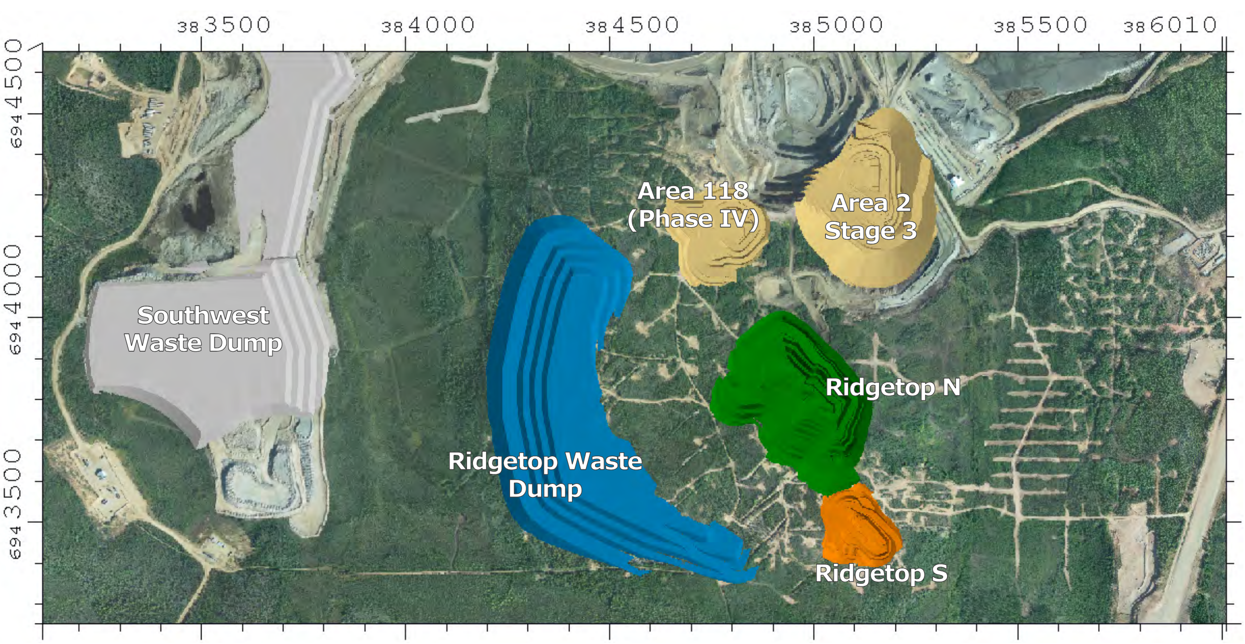

Figure 13: Plan View of the Ridgetop Waste Dump.

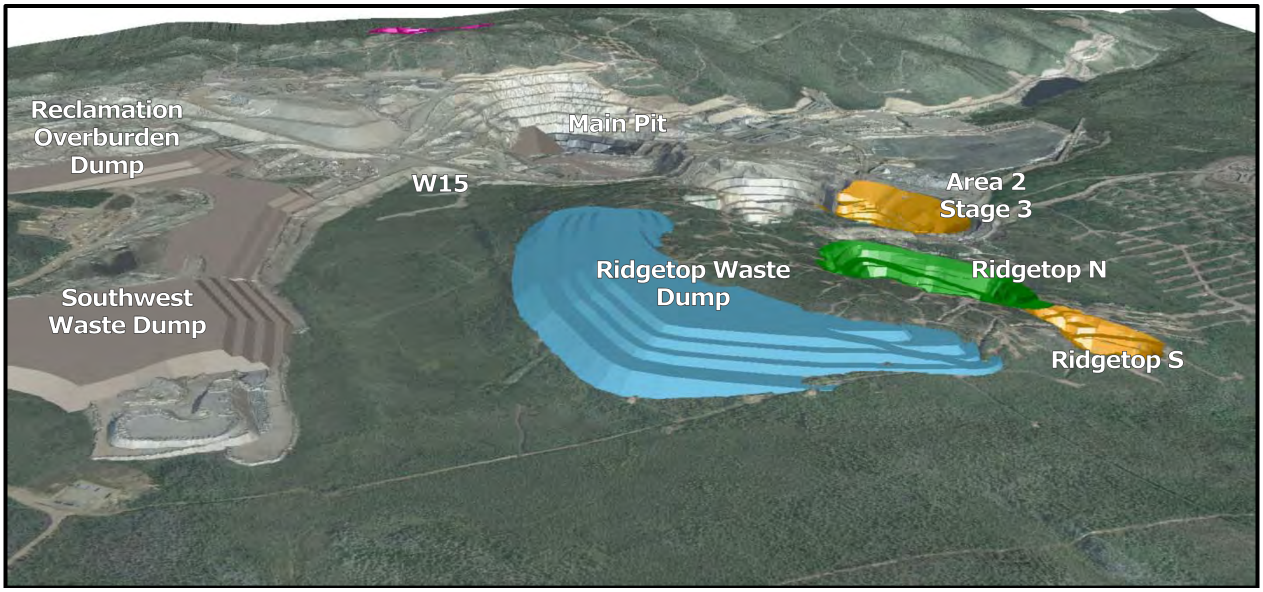

Figure 14: Perspective View of the Ridgetop Waste Dump.

4.2.4 Mill Valley Fill Extension Stage 2

The existing Mill Valley Fill Extension was designed as a buttress to arrest the movement of the slope underlying the DSTSF (dry stack tailings storage facility). Although monitoring of survey hubs at various locations around the DSTSF has shown that rates of movement have decreased since the start of MVFE construction, slope movement has not halted.

An extensive program of geotechnical investigation and analysis is underway to better define the mechanism causing the DSTSF slope movement and to evaluate what additional mitigation (if any) is required to fully halt movement and stabilize the slope. One candidate measure of additional mitigation is to expand the MVFE buttress; expansion could include adding more rockfill to the existing buttress both vertically as well as to the east along the axis of the Minto Creek valley. To allow the environmental implications of a potential expansion of the MVFE to be included in the Yukon Environmental and Socio-economic Assessment Board's evaluation of the Phase V/VI Expansion application, the following description and related figures have been included in the WROMP and reflect Minto's thinking of the maximum potential extent of expansion of the MVFE. As described elsewhere (SRK 2013a), any expansion of the MVFE will use waste rock and overburden that would otherwise be stored in the Main Pit Dump or one of the overburden storage locations. The Phase V/VI site water quality prediction has been structured to include the Stage 2 expansion of the MVFE in the estimation of chemical loadings affecting water leaving the site.

Figure 15 shows an example MVFE Stage 2 concept that represents the maximum extent of rockfill that could be placed without encroaching on the footprint of the Water Storage Pond. In this concept, the top of the dump is at the 790 m elevation, which approximately matches the final height of the DSTSF. The front and side slopes are designed at 2.5H:1V face angles, with a catchment bench/road mid-slope for erosion control upon closure, which results in a 3H:1V overall slope.

The front face is designed such that its toe is 120 m upstream of the water storage pond, permitting the construction of a new Minto Creek Detention Structure (MCDS) to capture impacted water; the existing MCDS would be buried by the dump.

The north slope is designed to toe out along the current site access road, which would form the foundation of a water conveyance channel for the re-establishment of Minto Creek at closure; an additional benefit of this concept would be that the re-established Minto Creek alignment would occupy the lowest point in the newly established topography. Long-term access to the site would be along a new road designed into the front (east) face of the buttress. In this concept, the east face of the buttress is designed with front face angles of 2.5H:1V and an overall front face slope measuring approximately 3H:1V, but varying slightly due to the road cut into the face.

The total volume of the Stage 2 expansion is 2.93 Mm^3. Stage 2 places rockfill on top of the completed Phase IV MVFE (what will be referred to as Stage 1, if Stage 2 is constructed) and extends the buttress eastward to further support the east side of the DSTSF. Figure 16 shows the footprint of the new disturbance that would be created if the MVFE Stage 2 buttress were built to its full extent according to this concept.

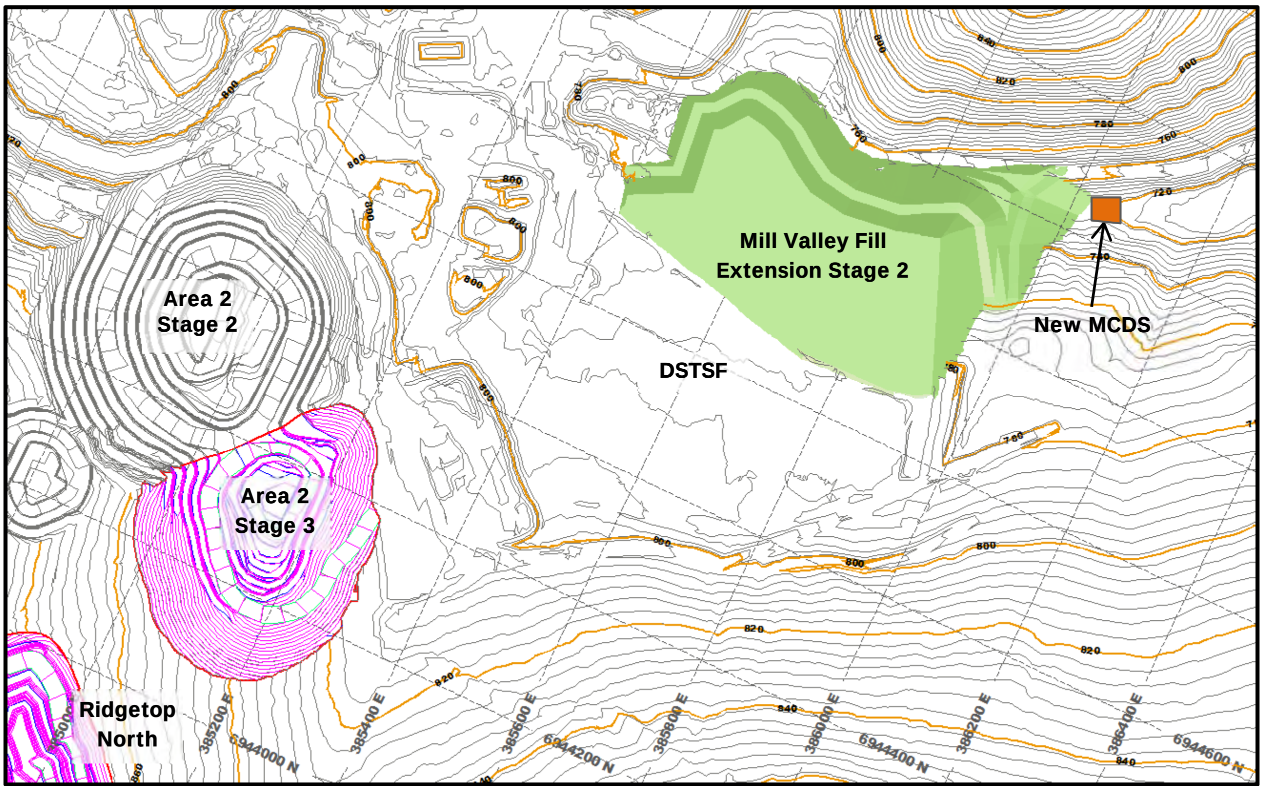

Figure 15: Plan View Showing Concept of Mill Valley Fill Extension Stage 2.

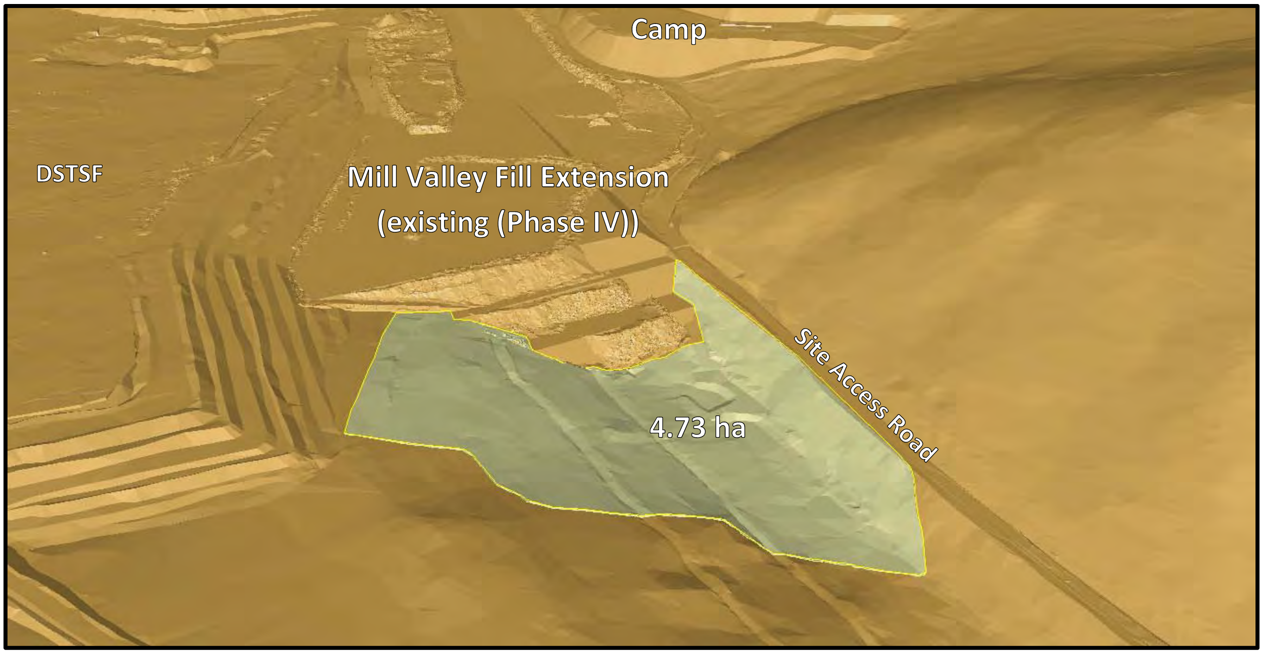

Figure 16: Land Disturbance Associated with the Mill Valley Fill Extension Stage 2.

4.3 NP:AP<3 Waste Rock

4.3.1 Storage

As noted in Section 3.2, the Phase V/VI Waste Management Plan has been developed with an allowance for 1.2 Mm^3 of waste rock with NP:AP<3 to be stored in locations that will be saturated over the long term. For planning purposes, 20% of the waste rock from A2S3, Ridgetop North and Ridgetop South pits is assumed to have NP:AP<3, and that this material should be stored such that it is saturated post-closure. It is not necessary to saturate NP:AP<3 waste rock during the operational period—there is sufficient neutralization potential in the NP:AP<3 waste that any acid generated at the mineral grain scale will be neutralized by contact with nearby neutralizing minerals and porewater that is in contact with those neutralizing minerals (SRK 2013a).

Minto plans to dispose of all rock with NP:AP<3 in the both the Main Pit and the Area 2 Pit below the final water table elevation in the respective pits. Rock will be both free-dumped over dump crests, and end-dumped in lifts and spread by dozer. Although deposition of tailings and NP:AP<3 waste rock will occur simultaneously, mixing of rock and tailings will be minimal and limited to coincidental mixing only. To the extent that tailings occupy waste rock void space, storage efficiency will increase; for planning purposes, it is assumed that no mixing of waste rock and tailings occurs and that discrete storage volumes are required for the scheduled release of both products. The tailings management plan has been developed to allow for disposal of both tailings and NP:AP<3 waste rock as described here (Minto 2013). Minto may consider using NP:AP<3 rock as underground mine backfill at some point, although planning is not sufficiently advanced at this stage to define whether this is feasible. If underground backfill of waste rock is undertaken, all NP:AP<3 waste rock backfill will placed in workings that are below the respective portal elevation and are expected to be saturated in the long term. This underground backfill strategy is consistent with the concept of disposing of NP:AP<3 waste rock under saturated conditions.

4.3.2 Classification and Segregation

Minto intends to continue the classification and segregation practices developed and implemented in 2012 as part of pit operations in the Phase IV Area 2 Stage 1/ 2 Pit. These practices can be summarized as follows:

- Classification
    1. Samples of cuttings from each blast hole are collected for grade control purposes. One sample is collected per hole.
    2. Cuttings samples are split into aliquots for grade control (copper analysis) and for determination of total sulphur (S(T)) and total carbon (C(T)) content.
    3. S(T) and C(T) are measured for each sample using an Eltra CS-800 induction furnace with infrared detectors.
    4. Test results are imported into the mine's grade control software for processing by the mine geologists.
    5. S(T) and C(T) values are converted into equivalent acid potential (AP-S(T)) and neutralization potential (NP-C(T)) values, and NP-C(T):AP-S(T) ratios are calculated for each sample.
    6. NP-C(T):AP-S(T) values are plotted for each drill hole in a given blast pattern, and mine geologists use the mine's grade control software to define polygons outlining contiguous zones of waste rock types: either bulk waste or waste with an NP-C(T):AP-S(T) ratio less than 3.0.
    7. Ore grade polygons are drawn for material above the mine's operational cutoff grade, with the result being that all material in a blast is classified as ore, bulk waste, or NP:AP<3 waste rock.
    8. A map of the final ore and waste classifications is provided to the pit operations team to guide the dispatching of all rock released from the pit.
- Segregation
    1. The pit operations team uses the blast classification maps to stake out the boundaries of each ore and waste class. Each class is represented by stakes in different colours. The maps are also used to communicate the shift's plans with equipment operators and supervisors at the beginning of each shift.
    2. Haul trucks are loaded by a loader or excavator, the operator of which is responsible for knowing the material class being excavated and for communicating the class of each load to the haul truck operator.
    3. The haul truck driver then delivers the load to the crusher or to the appropriate stockpile (if ore) or waste storage facility (if waste).

5 Overburden Management

Overburden produced during mining of Phase V/VI open pits will be used for progressive reclamation of completed mine facilities, bulk-disposed in waste dumps with waste rock, or stored in overburden-specific dumps and reclamation stockpiles. The following sections summarize how the Phase V/VI overburden will be managed.

5.1 Progressive Reclamation

Minto intends to carry out reclamation work on certain completed facilities during Phase V/VI mining. As indicated in Table 2, the largest quantity of overburden will be released during mining of the A2S3 Pit. The A2S3 overburden will be dispatched to the following locations for use as reclamation cover:

- Main Waste Dump Expansion;
- Southwest Waste Dump (low-, mid-, and high-grade waste areas);
- Dry Stack Tailings Storage Facility and Mill Valley Fill Expansion.

The overburden volumes to be dispatched to these locations are listed in Table 5.

Table 5: Destinations for Overburden Released from Phase V/VI Mine Components.

Location	Volume (m^3)
Southwest Waste Dump - low-grade waste area cover	365,000
Southwest Waste Dump - mid- and high-grade waste area cover	306,000
Main Waste Dump Expansion cover	400,000
DSTSF / MVFE cover	490,000
Main Waste Dump Expansion	906,000
Area 118 Backfill Dump	1,338,000
Main Pit Dump	349,000
Ridgetop South Backfill Dump	740,000
Total	4,894,000

5.2 Area 118 Backfill Dump

A new overburden dump will be developed as part of Phase V/VI in the general area of the Phase IV Area 118 Pit, first backfilling it and then constructing a dump on and around the footprint of the pit. All material dispatched to this dump will be overburden sourced from A2S3. Below the low point in the pit rim (approximate elevation 862 m), backfill will be a combination of thaw-stable and ice-rich overburden. Above this elevation, the pit backfill will consist of thaw-stable overburden only.

The footprint of the Area 118 Backfill Dump is shown in Figure 17 and, excluding the portion within the mined-out Area 118 Pit, measures 3.6 ha.

The Area 118 Backfill Dump shown is shown in Figure 18. It is designed with overall side slopes of 3H:1V, face angles of 3H:2V, and has a capacity of 1.3 Mm^3 (Table 5).

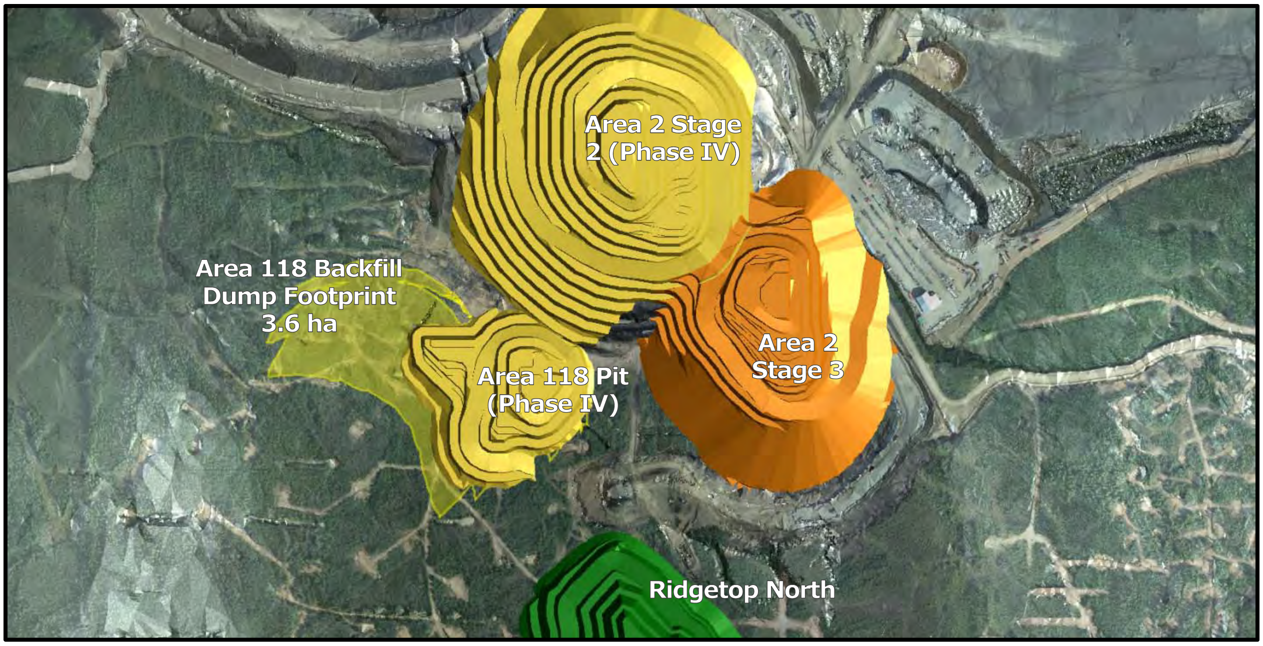

Figure 17: Footprint of the Area 118 Backfill Dump.

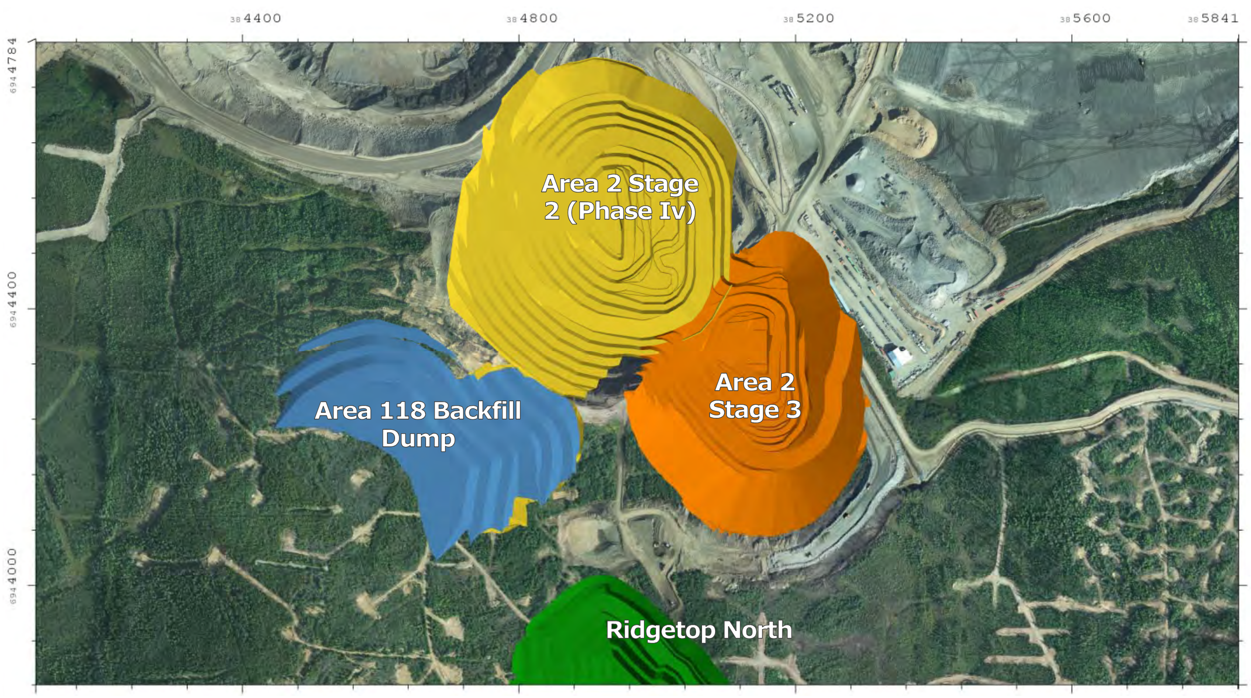

Figure 18: Area 118 Backfill Dump.

During Phase V/VI reclamation activities, the Area 118 Backfill Dump will be used as a source of cover material for the Ridgetop area facilities. The overburden volumes that will be used for reclamation and the final post-closure configuration of the Area 118 Backfill Dump are summarized in the Phase V/VI reclamation and closure plan (ACG 2013).

5.3 Main Waste Dump Expansion

Overburden from Minto North will be segregated from Minto North waste rock in the MWDE (Main Waste Dump Expansion) as described in Section 4.2.1. Approximately 906,000 m^3 of overburden will be released from Minto North.

5.4 Ridgetop South Backfill Dump

Mining of the Ridgetop North and South pits will overlap in time; however, the former continues for ~1.5 years after mining is completed in the latter. Of the 913,000 m^3 of overburden in Ridgetop North Pit, 173,000 m^3 is released while Ridgetop South is still being mined; this quantity will be dispatched to the Main Pit Dump, where it will be used for reclamation. The remaining 740,000 m^3, released after Ridgetop South Pit is complete, will be placed into a dump that backfills and builds upon the footprint of the Ridgetop South Pit (Figure 19 and Figure 20).

The Ridgetop South Backfill Dump will be mounded up above the pre-mining surface topography such that final side slopes will form 3H:1V (or shallower) surfaces. The purpose of mounding backfill above the original topography is fourfold:

- to eliminate the Ridgetop South Pit as a long term surface feature at the site;
- to avoid surface depressions that could result from settling of backfill;
- to provide positive drainage and maximize surface runoff during the post-closure period; and
- to maximize volume of waste stored within the footprint of the Ridgetop South Pit.

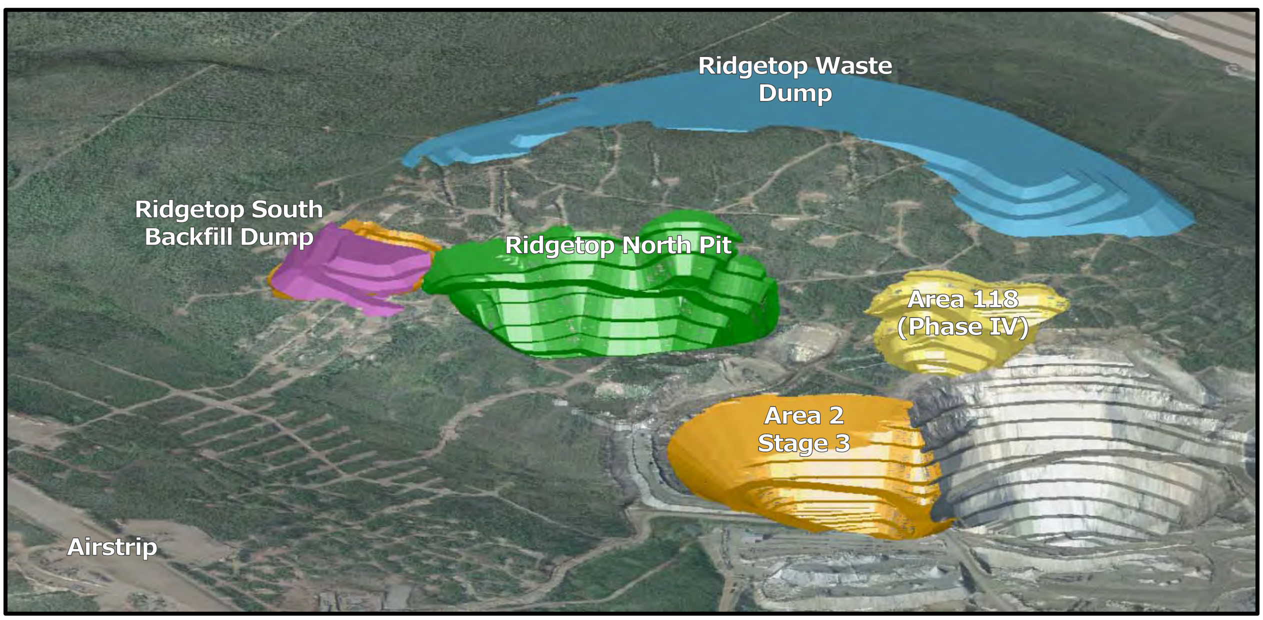

Figure 19: Perspective View of the Ridgetop South Backfill Dump.

Figure 20: Plan View of the Ridgetop South Backfill Dump.

5.5 Main Pit Dump

The Main Pit Dump is scheduled to receive a minor volume of overburden. For planning purposes, this volume is assumed to be 349,000 m^3 as noted in Table 5. The overburden material will be placed on areas of the dump where waste rock deposition is complete, will be spread over the dump as a cover.

5.6 Reclamation Overburden Dump

The existing Reclamation Overburden Dump will be left with some capacity relative to the extents of the Phase IV design; it will therefore serve as a contingency dumping location, but is not scheduled to receive material as part of this plan.

5.7 Ice-rich Overburden

Under the Phase IV authorizations, Minto manages ice-rich overburden separately from thaw-stable overburden to avoid the potential stability issues that could arise from thawing of ice-rich overburden that could otherwise be incorporated into storage facilities designed for bulk disposal. Thaw-stable overburden is defined in Water License QZ96-006 Amendment 8 as follows:

a) overburden material that is field-classified in accordance with the *Guide to a Field Description of Permafrost for Engineering Purposes* prepared by National Research Council Technical Memorandum 79 as Nf or Nbn permafrost, alternatively described as permafrost without excess ice; and

b) overburden material that has a moisture content of less than 20%.

Overburden that does not meet these thaw-stable criteria will be designated 'ice-rich overburden' and will be handled separately as follows:

- Ice-rich overburden from Minto North will be co-disposed with thaw-stable overburden as described in Section 4.2.1; briefly, all overburden will be placed in the northwest corner of the dump, where it will be buttressed by a large quantity of waste rock.
- The portions of the Area 118 and the Ridgetop South backfill dumps that are below the elevations of the lowest point along the pit rim will be able to receive ice-rich overburden co-disposed with thaw-stable overburden.
- Ice-rich overburden will be placed together with thaw-stable overburden as part of the progressive reclamation work done on Phase IV dumps. With anticipated placed overburden thicknesses of up to a few metres thick, and with only a small proportion of overburden expected to be classified as ice-rich, any ice entrained in the cover layer is expected to thaw within one year of placement and any excess water that results will drain or evaporate.

6 References

Access Consulting Group. 2013. Minto Mine Phase V/VI Expansion, Preliminary Reclamation and Closure Plan.

Minto Explorations Ltd. 2013. Minto Mine Phase V/VI Expansion, Tailings Management Plan v.2013-01.

SRK Consulting. 2013a. Minto Mine Phase V/VI Expansion, Metal Leaching and Acid Rock Drainage Assessment and Inputs to Water Quality Predictions. Report prepared for Capstone Mining Corporation.

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