APPENDIX KK

CONCEPTUAL CLOSURE PLAN

NOTE TO READER
APPENDIX KK

In April 2015, Treasury Metals submitted an Environmental Impact Statement (EIS) for the proposed Goliath Gold Project (the Project) to the Canadian Environmental Assessment Agency (the Agency) for consideration under the Canadian Environmental Assessment Act (CEAA), 2012. The Agency reviewed the submission and informed Treasury Metals that the requirements of the EIS Guidelines for the Project were met and that the Agency would begin its technical review of the submission. In June 2015, the Agency issued a series of information requests to Treasury Metals regarding the EIS and supporting appendices (referred to herein as the Round 1 information requests). The Round 1 information requests included questions from the Agency, other federal and provincial reviewers, and members of Indigenous communities, as well as interested stakeholders. As part of the Round 1 information request process, the Agency requested that Treasury Metals consolidate the responses to the information requests into a revised EIS for the Project.

Appendix KK (Conceptual Closure Plan) describes the main reclamation objectives, summary of proposed progressive reclamation activities, the reclamation plan for final closure, anticipated post-closure site conditions, and a summary of proposed reclamation and environmental monitoring for the Goliath Gold Project. The document also incorporates information presented in the answers to the Round 1 information requests.

Appendix KK has been prepared to support the final Environmental Impact Assessment Report for the proposed Goliath Gold Project (*the Project*) and Goliath Mine Site (*the Site*). The plan is purposefully structured in the same manner as set out in Schedule 2 of the Ontario *Mining Act* – Ontario Regulation 240/00, Mine Development and Closure Under Part VII of the Act. Appendix KK was developed largely to support the responses to the information request by various Indigenous communities.

As part of the process to revise the EIS, Treasury Metals has undertaken a review of the status for the various appendices. The status of each appendix to the revised EIS has been classified as one of the following:

- **Unchanged**: The appendix remains unchanged from the original EIS, and has been re-issued as part revised EIS.
- **Minor Changes:** The appendix remains relatively unchanged from the original EIS, and has been re-issued with relevant clarification.
- **Major Revisions**: The appendix has been substantially changed from the original EIS. A re-written appendix has been issued as part of the revised EIS.
- **Superseded:** The appendix is no longer required to support the EIS. The information in the original appendix has been replaced by information provided in a new appendix prepared to support the revised EIS.

- **New**: This is a new appendix prepared to support the revised EIS.

The following table provides a listing of the appendices to the revised EIS, along with a listing of the status of each appendix and their description.

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix A	Major Revisions	Table of Concordance
Appendix B	Unchanged	Optimization Study
Appendix C	Unchanged	Mining Study
Appendix D	Major Revisions	Tailings Storage Facility
Appendix E	Minor Changes	Traffic Study
Appendix F	Major Revisions	Water Management Plan
Appendix G	Superseded	Environmental Baseline
Appendix H	Minor Changes	Acoustic Environment Study
Appendix I	Unchanged	Light Environment Study
Appendix J	Minor Changes	Air Quality Study
Appendix K	Minor Changes	Geochemistry
Appendix L	Superseded	Geochemical Modelling
Appendix M	Minor Changes	Hydrogeology
Appendix N	Unchanged	Surface Hydrology
Appendix O	Superseded	Hydrologic Modeling
Appendix P	Unchanged	Aquatics DST
Appendix Q	Major Revisions	Fisheries and Habitat
Appendix R	Major Revisions	Terrestrial
Appendix S	Major Revisions	Wetlands
Appendix T	Unchanged	Socio-Economic
Appendix U	Minor Changes	Heritage Resources
Appendix V	Major Revisions	Public Engagement
Appendix W	Unchanged	Screening Level Risk Assessment
Appendix X	Major Revisions	Alternatives Assessment Matrix
Appendix Y	Unchanged	EIS Guidelines
Appendix Z	Unchanged	TML Corporate Policies
Appendix AA	Major Revisions	List of Mineral Claims
Appendix BB	Unchanged	Preliminary Economic Assessment
Appendix CC	Unchanged	Mining, Dynamic And Dependable For Ontario's Future
Appendix DD	Major Revisions	Indigenous Engagement Report
Appendix EE	Unchanged	Country Foods Assessment
Appendix FF	Unchanged	Photo Record Of The Goliath Gold Project
Appendix GG	Minor Changes	TSF Failure Modelling
Appendix HH	Unchanged	Failure Modes And Effects Analysis

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix II	Major Revisions	Draft Fisheries Compensation Strategy and Plans
Appendix JJ	New	Water Report
Appendix KK	New	Conceptual Closure Plan
Appendix LL	New	Impact Footprints and Effects

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1.0 INTRODUCTION

This conceptual closure plan has been prepared to support the final Environmental Impact Assessment Report for the proposed Goliath Gold Project (*the Project*) and Goliath Mine Site (*the Site*). The plan is purposefully structured in the same manner as set out in Schedule 2 of the Ontario *Mining Act* – Ontario Regulation 240/00, Mine Development and Closure Under Part VII of the Act. The conceptual closure plan is not intended to constitute an entire closure plan nor fulfill requirements of the *Mining Act*, although aspects of this document will be used to develop the certified closure plan.

The conceptual closure plan describes the main reclamation objectives, summary of proposed progressive reclamation activities, the reclamation plan for final closure, anticipated post-closure site conditions, and a summary of proposed reclamation and environmental monitoring.

1.1 Project Description

The main components of the Goliath Gold Project (Figure 1) and associated infrastructure that will require closure include:

- An open pit mine comprised of three interconnected pits mined sequentially, approximately 1,500 metres (m) by 500 m with a total area of 31.8 hectares (ha). Open pit mining will be achieved by conventional drill-and-blast techniques and will last for approximately five years over which 24.6 million tonnes (Mt) of waste rock will be produced.
- An underground mine, to a depth of 600 m, with an underground mine life of 10 years (partially concurrent with open pit mining) over which 2 Mt of waste rock will be produced and brought to surface.
- A waste rock storage area (WRSA) with a total area of 37 ha, 30 m above grade, providing capacity of up to 12.9 Mt of waste rock.
- An overburden stockpile, with a total area of 26 ha, a maximum height of 20 m above grade, providing capacity of up to 5.9 Mt.
- A low-grade ore stockpile, with a total area of 9 ha, a height of approximately 10 m to 15 m, providing a capacity of up to 2.2 Mt.
- A tailings storage facility (TSF), with a catchment area of approximately 70.6 ha, providing capacity of up to 9.1 Mt of tailings over the total projected mine life.
- Water management and drainage system, including ditches, berms and other structures directing the flow of contact and non-contact waters.
- Buildings, equipment and infrastructure, including the process plant.

The total lifespan of the Project is approximately 18 to 20 years, beginning with site preparation and ending with the completion of care and maintenance during the post-closure phase. The estimated duration of each key Project phase is the following:

- Site preparation and construction for 2 years;

- Operations for 12 years (concurrent open pit and underground mining for approximately three years);
- Closure for 3 years; and
- Post-closure (care and maintenance) for 10+ years (anticipated).

1.2 Reclamation Objectives

The following closure objectives have been established for the Project:

- Provide for mine closure using currently available proven technologies in a manner consistent with sustainable development;
- Restore the Project Site to a land use that maintains public safety;
- Reclaim disturbed landscapes in a manner that includes:
    - Revegetation to stabilize surface materials
    - Provides protection from wind and water erosion
    - Improves the appearance and aesthetics
    - Enhances natural vegetation growth and establish self-sustainable vegetation growth;
- Ensure the long-term physical stability of tailings dams and other containment structures; and
- Meets applicable regulatory requirements, including the Mine Reclamation Code of Ontario (the Code) under Ontario Regulation 240/00 of the Ontario *Mining Act*.

In addition to and in consideration of the component objectives outlined in the Code, the conceptual closure plan also addresses progressive reclamation opportunities during operations.

2.0 PROGRESSIVE RECLAMATION

Reclamation activities that can be performed prior to final closure and that do not pose a barrier to daily operations will be considered for progressive reclamation. Progressively reclaiming facilities and site features wherever practical will reduce the amount of work and time required at site closure. It also provides useful knowledge to improve final reclamation success. Progressive reclamation strategies are proposed for the open pit mine and various stockpiles, as described below.

2.1 Open Pit Mine

The sequential development and mining of the three interconnected open pits provides the opportunity to conduct progressive reclamation prior to final closure as each pit reaches its final extent. The measures taken to reclaim the open pit progressively may include, but are not limited to:

- Construction of a boulder or overburden fence around the perimeter of the open pit and a barricade at pit access ramp(s) during or following active mining operations within the pit to ensure safety.
- Removal of all infrastructure and equipment within the open pit, and clean up any fuels and lubricant spills, such as from vehicles and mechanical equipment, if necessary in accordance with the Emergency and Spill Response Management Plan.
- Removal or stabilization of drainage channels and water management structures constructed for dewatering and diversion purposes.
- Backfilling with waste rock from other pits still in operation; approximately 40% of produced waste rock from the open pit mine, equivalent to 12 Mt of waste rock will be stored in this manner.
- Re-vegetation overburden slopes of the open pit and placement of erosion protection (such as rip rap) at the final pit lake level.
- Construction of a permanent overflow spillway to safely convey runoff from the open pit to the natural drainage of Blackwater Creek.

2.2 Stockpiles

Once a determination is made of the volume of overburden required for the remainder of the site, a portion of the overburden stockpile may be progressively reclaimed by seeding to ensure stability and protect from erosion. Once overburden stripping is completed on the Site, the entire stockpile may be re-seeded, if appropriate, to reduce sediment loadings to the collection ditches.

Progressive reclamation of the WRSA will be undertaken, where practical, once the maximum height of the stockpile has been reached and/or as each lift is completed, to minimize the amount of reclamation required upon closure. The stockpile will be contoured, covered with overburden or topsoil material and reseeded once the stockpile has reached its design capacity.

Progressive reclamation of the low-grade ore stockpile is not proposed as the plan is to process all low grade ore during operations.

3.0 RECLAMATION AT FINAL CLOSURE

Final closure of the mine site will be completed after mining and processing operations cease, and a decision is made to close the site. The following sub-sections describe the reclamation approach for final closure for the open pit and underground mines, stockpiles, TSF, project infrastructure, and related drainage and water management structures.

3.1 Open Pit Mine

Final reclamation of the open pit will begin once in-pit operations cease. Once the pit is cleared of equipment, dewatering activities will cease and the backfilling of waste rock will continue (if not completed during progressive reclamation). The pit will be allowed to fill with water, keeping the level below that of the waste rock being actively backfilled (if any).

The final filling of the open pit with water will be achieved by enhanced flooding through a combination of the following:

- Natural groundwater, flowing into the open pit at a rate of 700 cubic metres per day (m^3/d) once dewatering activities cease. The flow rate will decrease to 100 m^3/d as the open pit fills to the spillway elevation at 388 metres above sea level (masl) and to a final volume of approximately 12 million cubic metres (Mm^3).

- Surface water, from the graded operations area, directing 20 m^3/d from the capped WRSA, 10 m^3/d from the TSF, and all other precipitation runoff towards the flooding open pit. All runoff from the operations area will continue to be directed towards the open pit after the open pit is fully flooded.

- A one-time batch transfer of 970,000 m^3 of supernatant water present within the TSF will be withdrawn, treated and discharged into the open pit to aid in the filling process.

Hydrologic modelling indicates that enhanced flooding of the open pit should take between 6 and 8 years to fill with water, depending on the meteorological conditions experienced. Under average climatic conditions, the open pit is expected to take approximately 6.7 years to fill with water.

3.2 Underground Mine

Infrastructure and equipment of value in the Project underground mine workings will be removed, dismantled and taken off site for sale or reuse if economically feasible. Any non-hazardous waste material (i.e., concrete, steel, wallboard and other inert materials) will be placed in an approved, onsite demolition landfill. Equipment of no value will be left underground, after purging of

lubricants, fuels and coolants to be left in an inert state. Any hazardous material will be removed from the site. The underground workings will then be allowed to flood naturally through groundwater inflow and potentially through the flooding of the open pit. It is not expected that any of the surface openings to underground will discharge to the environment during or after flooding.

The entrance or portal to the underground workings will be sealed using non-acid generating (NAG) rock. The entire ramp opening will be backfilled and overfilled with waste rock to ensure no potential entry point is visible or accessible. After sealing, the area will be regraded, covered with overburden and re-seeded.

3.3 Stockpiles

Treasury proposes to process all stockpiled ore during operations, therefore reclamation of the low grade ore stockpile should not be required. This is anticipated to remove most potentially acid-generating (PAG) rock from the Site. Any PAG rock that remains at the Site would be managed using one of the below alternatives:

- Re-location to the open pit and/or underground mine below the final static water level;
- Placement on the WRSA prior to installation of the final cover; and/or
- Placement on top of the tailings in the TSF prior to final flooding / rehabilitation.

The specific closure strategies for the WRSA, overburden stockpile and low-grade ore stockpile on site are described further in the sub-sections below.

3.3.1 Waste Rock Storage Area

For the area above surface containing PAG rock (i.e. WRSA, process plant site, etc.), Treasury proposes to design and place a multi layered, low permeability cover. The main purpose of this cover would be to control long term acid rock drainage (ARD) by achieving encapsulation and limiting oxygen to the PAG rock. The dry cover would be in accordance with Section 59 of the Mine Rehabilitation Code of Ontario (O. Reg. 240/00).

Confirmed PAG rock would be placed beneath the static water level in the open pit and/or underground mine to the extent practical, thereby minimizing the volume of PAG rock in the WRSA. If operational monitoring of the WRSA confirms that it is PAG, a low-permeability dry cover will be constructed over it at closure. Clay would not be used in the dry cover over the WRSA due to potentially poor performance associated with desiccation, freezing and cracking.

3.3.2 Overburden Stockpile

At closure the overburden will be used as cover material for the TSF closure as well as other reclamation activities requiring fill, including the berms surrounding the open pit. Any material remaining in the stockpile not used during progressive or final reclamation, will be graded and vegetated.

3.3.3 Low-Grade Ore Stockpile

The low-grade stockpile will be mixed and milled with the higher-grade ore produced during the underground mining phase. and will be depleted by the completion of underground mining. At closure, any residual ore or PAG material on the stockpile pad will be removed and placed in the TSF. The stockpile pad will then be covered with overburden and/or growth material and vegetated.

3.4 Tailings Storage Facility

At closure, the water in the TSF will be withdrawn, treated and used to help fill the open pit. The TSF will then be covered with a granular material to physically isolate the tailings. Next, either a low permeability cover (i.e., dry cover) or non-process water cover (i.e., wet cover) will be applied to ensure that the tailings are isolated from oxygen and water to preclude acidification.

Hydrologic modeling has shown that a minimum non-process water cover of 300,000 m^3 at closure would be sufficient to ensure that the tailings remain in a covered, saturated condition following closure even if an extreme dry year is encountered.

Currently, geochemical data suggests that the placement of an engineered wet cover of non-process water over the TSF at post-closure is more effective at eliminating acid rock drainage concerns for the TSF runoff and seepage. This remains under investigation.

3.5 Buildings and General Infrastructure

3.5.1 Buildings, Machinery and Equipment

Salvageable machinery, equipment and other materials will be dismantled and taken off site for sale or re-use if economically feasible, or cleaned of oil and grease and disposed of in a licensed facility. Gearboxes or other equipment containing hydrocarbons that cannot be readily cleaned will be removed from equipment and machinery and trucked offsite for disposal at a licensed facility.

All above grade concrete structures will be broken up and demolished to near grade elevation. Concrete structures and below grade facilities (if applicable) will be infilled as needed. Affected areas will be contoured, scarified, covered with overburden and vegetated.

3.5.2 Petroleum Products, Chemicals and Explosives

All petroleum products and chemicals will ultimately be removed from the Site. Empty tanks will be sold as scrap, reused off-site, or cleaned to remove any residual fuel or chemicals and disposed of in the appropriate off-site facility.

An environmental site assessment (ESA) will be conducted at the end of operations or early into the closure phase. The ESA will allow for the identification of potential soil contamination,

particularly around fuel handling areas. Soil found to exceed acceptable criteria will be remediated on site or transported off site to an approved off-site facility.

Any remaining explosives will be either detonated on site or disposed of in the appropriate off-site facility.

3.5.3 Roads, Pipelines and Power Distribution

Site roads and dedicated access roads will be scarified and reseeded when no longer needed to support final reclamation, long term management and environmental monitoring, assuming they are not required to support any developments on site or local needs. Improvements to Trans-Canada Highway 17 entrance will remain in place continuing to provide better access to local populace. Access trails built at the Site will remain in place to support local recreational activities after final closure when access is returned.

The water reclaim pump, reclaim pipeline, and tailings delivery and distribution pipelines will be decommissioned and removed from the Site. Pipelines will be drained / purged, and either sealed and left in place; or dismantled and disposed of in the appropriate off-site facility.

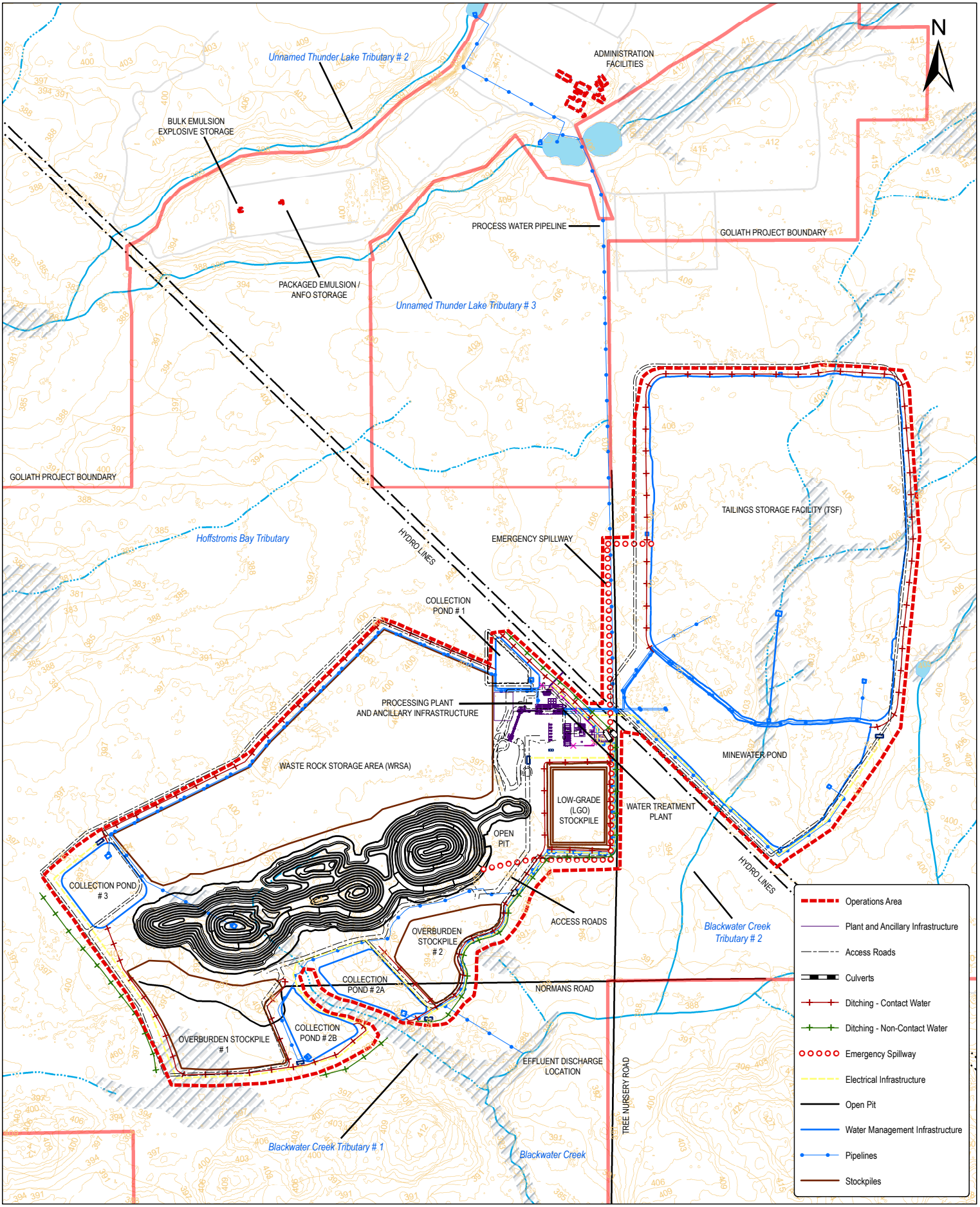
Power infrastructure, equipment and materials will be taken off site for sale or re-use where practical. Other power-related materials that have no salvage value will be dismantled and disposed of in the appropriate off-site facility.

3.6 Site Drainage and Water Structures

The pattern of general site drainage developed during operations will remain in place at closure, with the exception of the removal of culverts at water crossings during site road reclamation activities. A general arrangement depicting post-closure surface water runoff is provided in Figure 1.

Water intake structure(s) at the Ministry of Natural Resources and Forestry (MNRF) Tree Nursery (or any other waterbodies) will be removed and the area reclaimed. Components will be sold, reused off site or disposed of in the appropriate off-site facility.

Pumps, pipelines, sumps and associated equipment used for open pit dewatering during the operations phase will be removed from the open pit and sold, reused, or disposed of in the appropriate off-site facility.



GOLIATH GOLD PROJECT
DRYDEN, ONTARIO, CANADA

General Arranagement
Operations Phase

Figure 3.0-1A | REV.01

TREASURY METALS

DESIGN:	MP	01/08/2017
GIS:	MP	01/08/2017
CHECK:	MW	01/08/2017
REVIEW:	MW	01/08/2017

- Hydro Line
- Natural Gas Pipeline
- Provincial Parks
- Railway
- Expressway / Highway
- Local Roads
- Resource / Recreation
- Contours (3 meters)
- Intermittent Watercourses
- Permanent Watercourses
- Waterbody
- Wetland

SCALE 1:16,000

Coordinate System: NAD 1983 UTM Zone 15N
Projection: Transverse Mercator
Datum: North American 1983

0 250 500 750
Meters

Base Data:
Treasury Metals Inc., LIO Database, KBM Resources Group

Notes:
All details preliminary and subject to change as engineering designs are updated.

4.0 POST-CLOSURE SITE CONDITIONS

The overall vision of the site post-closure is to reclaim the mine site such that long-term physical and chemical stability is achieved and public safety is maintained. The following sub-sections describe the post-closure site conditions of the infrastructure, the overall terrain, surface water and groundwater, and the aquatic and terrestrial environment.

4.1 Terrain

Terrain at the Site will be similar to pre-development conditions with the exception of the closed WRSA and TSF. At the WRSA, a low hill of approximately 37 ha and rising to 30 m above the pre-development terrain grade will remain. Contouring, reclamation, and vegetation will allow the hill to blend into the surrounding terrain. A flattop plateau of approximately 70.6 ha and 10 m above the pre-development terrain grade will remain at the site of the TSF where there was previously a depression. As with the WRSA, contouring, reclamation, and vegetation will blend the TSF into the surrounding terrain features. The remaining site will have limited topographic relief. It will be regraded to support drainage and after revegetation will blend into the surrounding terrain.

4.2 Local Surface Waters

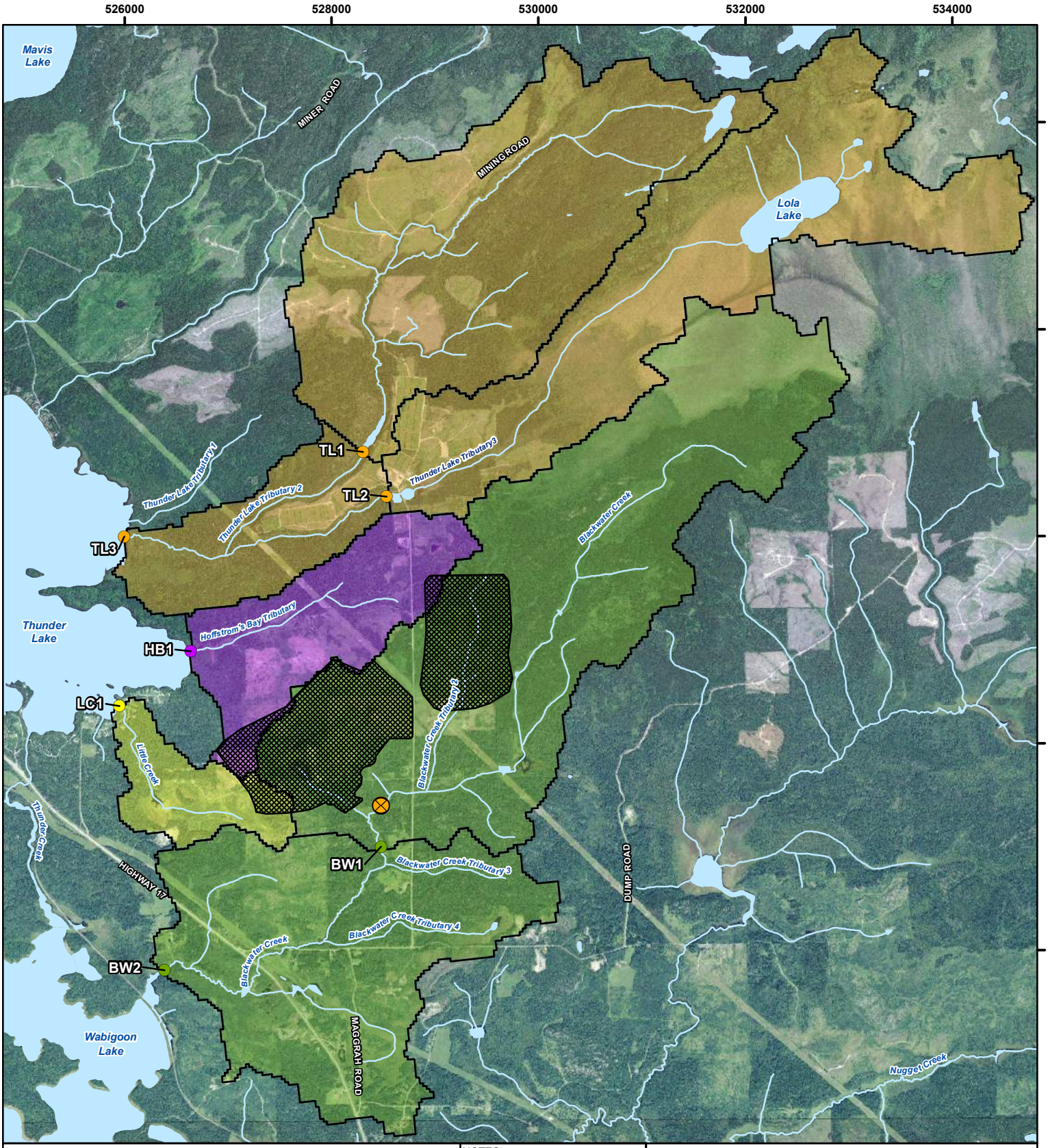
4.2.1 Hoffstrom's Bay and Little Creek

During the site preparation and construction phase, a perimeter ditch will be established to collect surface water runoff from within the operations area (Figure 2). During operations, the footprint of this ditch will overlay small portions of the Hoffstrom's Bay and Little Creek sub-watersheds. A decrease in annual flow is predicted for the Hoffstrom's Bay Tributary and Little Creek due to this loss in drainage area. Similar to operations, a decrease in annual flow is predicted for the Hoffstrom's Bay Tributary and Little Creek due to the loss in drainage area in the post-closure phase. This is due to portions of the perimeter ditch remaining in place to direct runoff towards the open pit (Figure 3).

4.2.2 Blackwater Creek

The majority of the Project footprint will be located within the Blackwater Creek watershed. Blackwater Creek Tributaries 1 and 2 will be partially overprinted by the open pit and TSF, respectively (Figure 2). All runoff collected from the operations area will be collected, managed, treated and discharged to Blackwater Creek. As a result, an increase in annual flow in Blackwater Creek is predicted as a result of the proposed treated effluent discharge to this system.

At final closure, the perimeter ditch will remain in place and the majority of the operations area will drain to the open pit (Figure 3). A segment of the perimeter ditch that crosses Blackwater Creek Tributary 1 will be rehabilitated, during closure, to allow for the discharge of water from the flooded open pit to Blackwater Creek (Figure 3). Similar to operations, an increase in annual flow is predicted in Blackwater Creek during post-closure as a result of open pit water discharge.



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LEGEND

Operations Area

Effluent Discharge Location

Sub-Watershed Outlet Locations

- Blackwater Creek
- Hoffstrom's Bay Tributary
- Little Creek
- Thunder Lake Tributary 2

Sub-Watershed

- Blackwater Creek
- Hoffstrom's Bay Tributary
- Little Creek
- Thunder Lake Tributary 2 and 3

NOTES:
- Topographic data extracted from Land Information Ontario, MNRF.
- Imagery extracted from Agriculture Information Atlas, OMAFRA.

Datum: NAD83
Projection: UTM Zone 15N

0 0.25 0.5 1 1.5 2 2.5 3 Kilometres

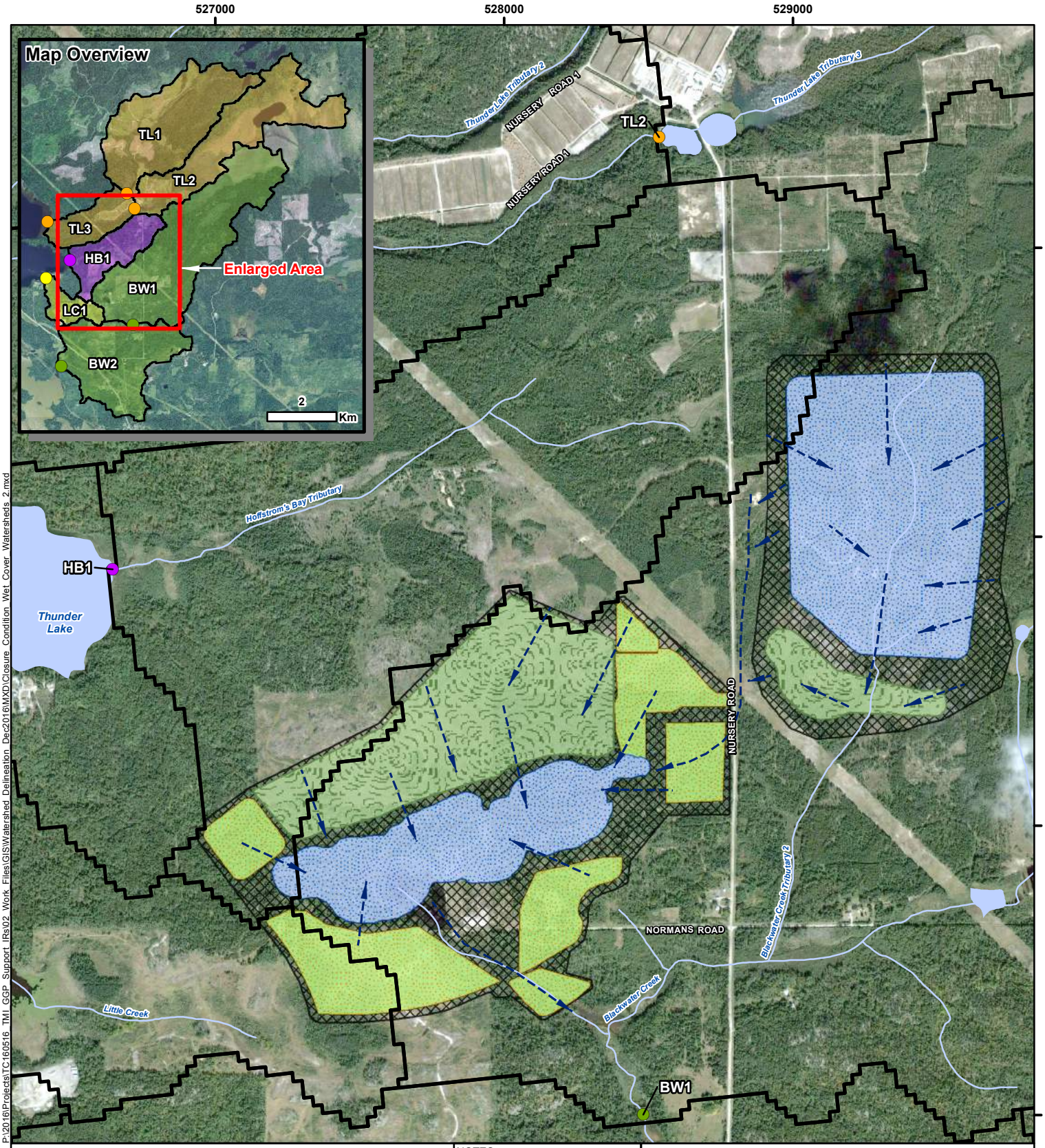
N W E S

amec foster wheeler

GOLIATH GOLD PROJECT

Operational Sub-Watersheds

PROJECT N°: TC160516	FIGURE: 4-2
SCALE: 1:50,000	DATE: April 2017



LEGEND

Post Closure Land Use

- Flooded Open Pit/Wet TSF Cover
- Restored Operations Area
- Return to Prior State
- Semi-impervious Membrane
- Post Closure Flow Direction
- Sub-Watershed Boundary

Sub-Watershed Outlet Locations

- Blackwater Creek
- Hoffstrom's Bay Tributary
- Little Creek
- Thunder Lake Tributary 2

Sub-Watershed

- Blackwater Creek
- Hoffstrom's Bay Tributary
- Little Creek
- Thunder Lake Tributary 2 and 3

NOTES:
- Topographic data extracted from Land Information Ontario, MNRF.
- Imagery extracted from Google Earth Pro, 2006

Datum: NAD83
Projection: UTM Zone 15N

0 0.25 0.5 1 1.5 Kilometres

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GOLIATH GOLD PROJECT

Post Closure Land Use Wet TSF Cover

PROJECT N°: TC160516 | **FIGURE: 4-4**

SCALE: 1:18,000 | DATE: March 2017

4.2.3 Open Pit

It is estimated that it will take 6.7 years for the open pit to flood through precipitation and surface runoff and augmented by secondary treatment discharge and other groundwater / surface water sources. Once the open pit mine, comprised of three interconnected pits, is flooded and begins to discharge into the Blackwater Creek tributary, the excess water will be derived of surface runoff and precipitation while groundwater contributions are anticipated to be negligible.

4.3 Local Groundwater

During the operations phase, active dewatering of the open pit and underground mine will result in a localized zone of influence where the groundwater table will be drawn down. Following closure, dewatering activities will cease and the groundwater table will be allowed to return to conditions similar to those prior to the development of the Project. Once this happens, a portion of seepage from the TSF and WRSA that escapes the perimeter ditch seepage collection system will leave the Site and report to various receiving waterbodies. At final closure (once the open pit is fully flooded), groundwater modelling indicates a total seepage quantity of 30 m^3/day from the capped WRSA will report to Thunder Lake (at Hoffstrom's Bay) and Blackwater Creek. Total seepage quantities predicted for the closed TSF are different depending on whether the dry cover or wet cover option is employed. A seepage quantity of 50 m^3/day is predicted for the TSF dry cover option and a seepage quantity of 90 m^3/day is predicted for the TSF wet cover option. Seepage from the closed TSF is predicted to report to various waterbodies including: Thunder Lake (at Hoffstrom's Bay), Thunder Lake Tributary 3, Hoffstrom's Bay Tributary and Blackwater Creek.

4.4 Aquatic Environment

A long, narrow pit lake comprised of three basins from the open pit mine will be developed where there once was a headwater wetland of beaver ponds. The lake will be shallower in the west and increase in depth to the east, as a result of the waste rock backfill placed in the west and central basins of the open pit. The west basin will be shallow (i.e., 2 m to 3 m) and well within the euphotic zone for primary productivity. The east basin will be deep (i.e., 140 m) while the central basin depth will provide a transition zone.

The central and east basins are expected to undergo thermal stratification which would separate the epilimnion from the hypolimnion. The stratification could either be seasonal or permanent. If the stratification remains permanent, then the hypolimnion would become anoxic while the epilimnion would seasonally mix. Under both scenarios, it is expected the central and east basins of the lake would support aquatic life. The shallow west basin and the contoured shores would provide productive littoral zone habitat which would give the pit lake a much higher proportion of productive aquatic habitat than most pit lakes. The pit lake would also provide habitat for small- and large-body fish species in a marshy area that is periodically impounded by beaver dams.

4.5 Terrestrial Environment

All disturbed areas will be seeded with plant species selected for rapid growth and colonization to provide soil stabilization and prevent erosion. It is anticipated that the initial vegetation will gradually be replaced by natural vegetation communities through natural succession.

5.0 POST-CLOSURE MONITORING

A post-closure monitoring program compliant with the Code will be implemented to ensure reclamation measures remain effective and continue to provide a high level of public and environmental protection. A monitoring strategy for post-closure to ensure physical and chemical stability in addition to biological monitoring has been developed. The strategy is summarized below and full details of the post-closure monitoring program are located in Section 13 of the EIS.

5.1 Physical Stability Monitoring

Physical stability monitoring will be conducted in accordance with the Code (Part 8) as a minimum, during the closure and post-closure phases of the Project. General site inspections will be completed regularly, as needed to ensure sustainable vegetation is established, with remediation provided as needed. Monitoring of the closed Project site will include an annual Dam Safety Inspections by a qualified professional engineer and Dam Safety Reviews every 10 years following closure (or as otherwise required by regulations).

5.2 Chemical Stability Monitoring

In accordance with the Code and other regulatory approvals, chemical stability monitoring will be conducted during the closure and post-closure phases. A conceptual surface water and groundwater monitoring program has been developed and is provided in Section 13 of the EIS which includes details on sampling locations, frequency of sampling and parameters. The proposed plan includes details on water quality monitoring of effluent, receiving waterbodies, groundwater, sediment and pit water during post-closure to confirm closure success.

5.3 Biological Monitoring

Biological monitoring will be conducted during the closure and post-closure phases in accordance with the federal Metal Mining Effluent Regulations and any other regulatory requirements.