AMENDED EIS/EA REPORT
CHAPTER 5: PROJECT DESCRIPTION
VERSION 3

CANADIAN MALARTIC CORPORATION

TABLES

Table 5-1: Project Activities

Component	Facilities	Construction Phase Activities	Operations Phase Activities	Closure Phase Activities	Post-closure Phase Activities
Management, Permitting and Employment	■ N/A	■ Source and hire construction workforce. ■ Source operational workforce. ■ Source and obtain equipment and materials. ■ Maintain construction permits/monitoring. ■ Finalize operational permits/plans and monitoring. ■ Restrict Project Site access.	■ Maintain operational workforce. ■ Maintain and manage Project Site. ■ Maintain operational permits and monitor. ■ Implement and adjust plans as necessary. ■ Restrict Project Site access.	■ Change workforce activities. ■ Manage closure process. ■ Implement closure. ■ Implement monitoring programs. ■ Restrict Project Site access.	■ Monitor and maintain as necessary. ■ Maintain post-closure workforce if necessary. ■ Restrict Project Site access if necessary.
Linear Infrastructure	■ Access road (Hardtack/Sawbill). ■ Project transmission line. ~~■ Fibre optic line.~~	■ Upgrading/construction of access road (Hardtack/Sawbill). ■ Construction of project transmission line and electrical substations (tie-in and on-site substation). ■ Construction of fibre optic line. ■ Clearing and grubbing. ■ Drill and blast.	■ Maintaining access road (Hardtack/Sawbill). ■ Maintain project transmission line. ~~■ Maintain fibre optic line.~~	■ Maintaining appropriate access. ■ Decommission project transmission line when no longer necessary. ~~■ Decommission fibre optic line when no longer necessary.~~ ■ Return applicable portions of access road (Hardtack/Sawbill) to MNR control.	■ Work with MNR to allow for appropriate road use and access.
Aggregate	■ Nearby aggregate sites.	■ Clearing, grubbing and installation of temporary sediment control measures. ■ Stripping and stockpiling of topsoil and overburden as necessary. ■ Operation of mobile crushing and screening plant. ■ Excavation crushing and screening aggregate material. ■ Hauling and transporting material as required.	■ Clearing, grubbing and installation of temporary sediment control measures. ■ Stripping and stockpiling of topsoil and overburden as necessary. ■ Operation of mobile crushing and screening plant. ■ Excavation crushing and screening aggregate material. ■ Hauling and transporting material as required. ■ Decommission following appropriate guidelines once they are no longer required.	■ Closure and decommission following appropriate guidelines once they are no longer required.	■ None.

Table 5-1: Project Activities

Component	Facilities	Construction Phase Activities	Operations Phase Activities	Closure Phase Activities	Post-closure Phase Activities
Support and Ancillary Infrastructure	■ Mine site road and on-site roads. ■ Worker accommodation camp. ■ Office and support facilities. ■ Warehouses, workshops and maintenance facilities. ■ Chemicals, fuel and explosives manufacturing facilities. ■ Fuel storage area. ■ Explosive storage and preparation. ■ On-site power distribution (grid). ■ Off-site waste disposal. ■ Other ancillary and support infrastructure.	■ General operation of support and ancillary structure and facilities. ■ Operation, fuelling and maintenance of vehicles. ■ Transportation of people and materials. ■ Operation and maintenance of backup power generation facilities. ■ Hazardous and non-hazardous waste management. ■ Control of dust. ■ Fuel and chemical transportation handling and storage. ■ Clearing and grubbing of development areas. ■ Stripping and stockpiling of topsoil. ■ Preparation of construction facilities (offices, shops, dry, cafeteria and nursing station). ■ Grading and granular surfacing of laydown areas, including drill and blast and site preparation. ■ Grading of development areas. ■ Operation of concrete batch plant. ■ Construction of facilities. ■ Construction of on-site roads. ■ Construction of piping and electrical between buildings. ■ Construction of diversion ditching and linking water management systems from various facilities. ■ Construction of support and ancillary infrastructure (explosive storage area, , fuel storage areas, natural gas farm, parking areas, sewage, worker accommodation camp, truck shop, warehouses, backup power generation, other facilities to be determined as part of detailed design). ■ Haulage of waste from Project Site to disposal in appropriately licensed facilities when required.	■ General operation of support and ancillary structure and facilities. ■ Operation, fuelling and maintenance of vehicles. ■ Transportation of people and materials. ■ Operation and maintenance of backup power generation facilities. ■ Hazardous and non-hazardous waste management. ■ Control of dust and erosion. ■ Fuel and chemical transportation handling and storage. ■ Explosive manufacturing, handling and storage. ■ Haulage of waste from Project Site to disposal in appropriately licensed facilities when required.	■ Decommissioning of Project facilities. ■ Operation of temporary offices during closure. ■ Operation, fuelling and maintenance of vehicles during closure activities. ■ Transportation of people and materials. ■ Hazardous and non-hazardous waste management. ■ Control of dust. ■ Fuel transportation handling and storage. ■ Removal of re-useable supplies and materials. ■ Salvage of equipment and sale of scrap where economical. ■ Remediation of hydrocarbon impacts as per applicable guidelines if necessary. ■ Demolition of facilities and disposal in licences landfills. ■ Project Site reclamation. ■ Close (scarify and vegetate) all non-essential site roads. ■ Implement closure monitoring programs. ■ Haulage of waste from Project Site to disposal in appropriately licensed facilities when required.	■ Periodic Project Site access only. ■ No additional waste materials will be placed on-site. ■ Haulage of waste from Project Site to disposal in appropriately licensed facilities when required.
Ore Processing Facility	■ Ore crushing. ■ Crushed ore stockpile. ■ Processing plant (including ore grinding and processing). ■ Conveyor.	■ Site grading. ■ Construction of foundation, superstructure and process components including delivery and assembly. ■ Construction and surfacing of ore pad. ■ Construction of ore crushers, grinding mills and conveyors. ■ Ditching where necessary.	■ Crushing, grinding and concentration of ore. ■ Leaching of concentrate. ■ Electro-winning and smelting of gold. ■ Operation of cyanide destruction plant and tailings thickener.	■ Decommissioning of processing plant as per general activities.	■ None.
Mine	■ East pit. ■ West pit. ■ Haul roads. ■ Service roads. ■ Ramps. ■ Pumping stations.	■ Clearing and grubbing. ■ Strip haul and stockpile topsoil and overburden. ■ Construction of haul roads. ■ Blasting and excavation of pre-strip material and haul to WRMF. ■ Set up open pit dewatering system (including use of portable generators where necessary). ■ Ditching where necessary.	■ Ongoing removal and stockpile of topsoil and overburden. ■ Ongoing dewatering of open pits. ■ Drilling, loading of explosives and blasting. ■ Loading of ore, low-grade ore, and waste rock. ■ Hauling of ore to the crusher. ■ Hauling of waste rock to the WRMF.	■ Undertake appropriate studies to establish a "safe line" around open pits. ■ Construct a fence or boulder wall around safe line to prevent inadvertent public access. ■ Cease pumping and allow the open pits to flood back. ■ Pump water from the TMF reclaim pond and seepage collection to the open pits. ■ Excavate a trench (spillway) connecting the east pit, west pit, and Marmion Reservoir such that the flooded open pits will eventually overflow through a spillway to Marmion Reservoir.	■ Periodically maintain fence or boulder wall if necessary. ■ Monitor open pits water quality. ■ Allow the flooded open pits to discharge to Marmion Reservoir. Implement contingency plan for in-pit or passive treatment of water, if necessary.

Table 5-1: Project Activities

Component	Facilities	Construction Phase Activities	Operations Phase Activities	Closure Phase Activities	Post-closure Phase Activities
Stockpiles	■ Overburden/topsoil stockpile. ■ Low-grade ore stockpile.	■ Clearing and grubbing. ■ Set up seepage collection ditches sumps and pump system. ■ Trucking, dumping and dozing of overburden.	■ Trucking dumping and dozing of material. ■ Excavation and trucking of marginal ore to the mill. ■ Use part of overburden and topsoil for progressive reclamation.	■ Excavation and use of part of overburden and topsoil for reclamation. ■ Allow surface to revegetate naturally. ■ Provide erosion protection and drainage channels as necessary.	■ None
Waste Rock Management Facility (WRMF)	■ Waste Rock Area. ■ Transfer Area.	■ Clearing and grubbing as necessary. ■ Set up seepage collection ditches sumps and pump system. ■ Trucking, dumping and dozing of waste rock.	■ Trucking dumping and dozing of material.	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge. ■ Construct erosion protection drainage channels as necessary.	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge. ■ Monitor for erosion and repair if necessary.
Tailings Management Facility (TMF)	■ Tailings containment. ■ TMF service road and pipeline access roads. ■ Pipelines (tailings and water reclaim).	■ Construction of TMF service road and pipeline access roads. ■ Clearing, grubbing and installation of temporary sediment control measures. ■ Construction of pipelines (tailings and water reclaim). ■ Installation of pump stations and power to pump stations. ■ Strip topsoil from dam foundations and truck to stockpile. ■ Construct first stage perimeter containment (include construction of coffer dams, dewatering of foundation, and preparation of dam foundations). ■ Construction of seepage collection system and pumping stations. ■ Installation of tailings distribution system. ■ Ditching where necessary.	■ Deposition of tailings from processing plant. ■ Staged raising and extension of TMF dams. ■ Pumping of water from the reclaim pond back to the processing plant. ■ Operation of the seepage collection ponds and pump back to TMF.	■ Decommission. ■ Decommissioning and removal of tailings pumping and pipeline system. ■ Direct revegetation to stabilize the tailings surface in the TMF. ■ Providing erosion protected drainage channels in TMF as necessary. ■ Monitoring and maintaining the TMF dams. ■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge. ■ Decommissioning and removal of reclaim pumping and pipeline system.	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge. ■ Monitor for erosion and repair if necessary.
Water Management System	■ On-site water containment. ■ Effluent treatment plant (ETP). ■ Ditches and seepage collection ponds (TMF, WRMF, stormwater, stockpiles). ■ Pumping stations from water containment ditches/sumps.	■ Dewatering of Mitta Lake including fish rescue and discharge of water to Marmion Reservoir. ■ Construction of ditches, and ponds (processing plant collection pond, emergency spill pond, seepage collection ponds). ■ Construction of treatment facilities including an ETP, if necessary, potable water treatment and sewage treatment facility. ■ Construction of pumping stations (mine water, surface water, fire water, potable water). ■ Construction of site discharge lines and diffuser (if required).	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge. ■ Operation of ETP, if necessary. ■ Operation of potable water treatment and sewage treatment facility.	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge.	■ Operation of seepage collection ponds, pumping water to open pits until water is suitable for direct discharge.

Table 5-2: Annual Estimated Mine Ore and Mine Rock Production

Year	Mined Ore and Mine Rock		
	Mined Ore (t/y)	Mine Rock (t/y)	Total (t/y)
Pre-production 1	2,709,027	7,936,361	10,645,388
Pre-production 2	9,081,863	17,021,166	26,103,029
1	17,629,734	21,575,158	39,204,892
2	26,568,847	19,503,995	46,072,842
3	25,290,734	20,081,012	45,371,746
4	22,376,622	20,115,478	42,492,099
5	17,158,299	27,937,427	45,095,725
6	22,266,622	19,952,798	42,219,420
7	22,736,771	23,716,668	46,453,439
8	23,336,356	16,544,549	39,880,906
9	13,384,634	23,801,849	37,186,483
10	14,874,160	26,502,847	41,377,006
11	9,829,623	5,480,029	15,309,652
Total	**227,243,293**	**250,169,336**	**477,412,629**

Note:
Amount of Mine Rock for backfill may change as a function of mine plan.
t/y = tonnes per year.

Table 5-3: Process Plant Reagent Use, Supply and Storage

	Consumption (kg/t)	Delivery Method	Product (t/truck)	Storage Type	Storage Trucked (t)	Estimated Dimensions	Storage 100% Pure	
							Capacity (t)	Days
Flocculant	0.04	750 kg super sacs	18	Heated storage room	36	+ 46m^2	36	18.2
Lime	0.15	Bulk tanker	44	Outdoor silo	300	7.5 m D x 22.5 m H	300	6.7
Sodium Cyanide	0.15	Bulk tanker (ISO)	30	ISO containers	30	6 x ISO Containers	180	9.2
PAX	0.078	900 kg super sacs	22	Heated storage room	44			
MIBC	0.0633	Bulk tanker						
Caustic Soda	0.0096	Bulk tanker	30	Bulk tankers	15	2 x Bulk Tankers	30	9.4
Anti-Scalant	0.0085	1-t totes	20	Heated storage room	40	++ 40 m^2	40	85.6
Activated Carbon (Coconut)	0.0345	500 kg super sacs	20	Non-heated Storage room	60	110 m^2	60	37.6
Grinding Media (Ball Mill and SAG.)	1.143	Bulk truck	34	Indoor concentrator pad	450	5 m L x 4 m W x 5 m D	450	15.2
Grinding Media (Regrind)	0.0241	Bulk truck						
Nitric Acid	0.0173	Bulk tanker	30	Outdoor vertical tank	60	3.5 m D x 7.0 m H	12	19.8
Liquid SO_2	0.3036	Bulk tanker	28	Outdoor horizontal tank	210	2 x 4.0 m D x 7.0 m L	210	8.7
Copper Sulfate ($CuSO_4$)	0.021	1,000 kg super sacs	20	Heated storage room	40	40 m^2	40	13.9
Smelting Fluxes	0.001	Bulk truck	0.5	Heated storage room	2	7.2 m^2	2	36.4
Natural gas (Process and Heating)	0.1821	Bulk tanker	58	Pressurized outdoor tank	120	6.5 m D * 8.5 m L	120	15.0
Oxygen	0.5989	VPSA plant	N/A	N/A	N/A	N/A	N/A	N/A

Note: All numbers are provided for information purposes only. During actual operations, values are expected to vary.

AMENDED EIS/EA REPORT
CHAPTER 5: PROJECT DESCRIPTION
VERSION 3

CANADIAN MALARTIC CORPORATION

FIGURES

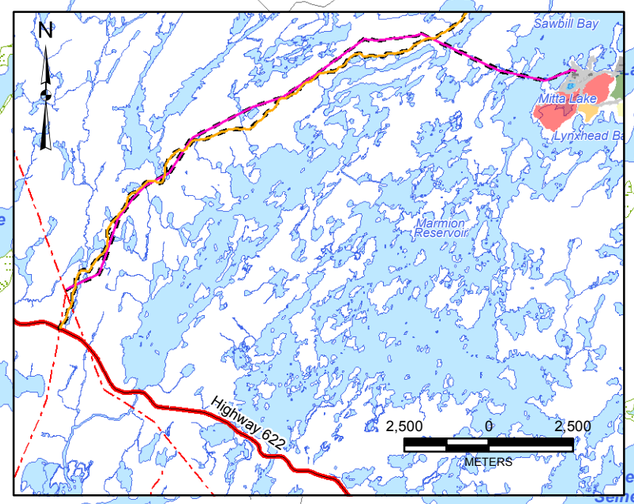
610000 615000 620000

5430000 5425000 5420000

Serpent Lake
Cornell Lake
Long Hike Lake
Vista Lake
Lizard Lake
Mitta Lake
Lynxhead Bay
Sawbill Bay
Marmion Reservoir
Turtle Bay
Trap Bay

ACCOMMODATION CAMP
TAILINGS MANAGEMENT FACILITY
PUMPING STATION
FRESHWATER INTAKE - CAMP SITE POTABLE
CAMP SITE EFFLUENT DISCHARGE POINT
PUMPING STATION
DETONATOR STORAGE
EMULSION PLANT
CONCENTRATOR
PEBBLE CRUSHING STATION
PARKING LOT
FRESHWATER INTAKE - PROCESS AND PLANT POTABLE
LIVE ORE STOCKPILE
SECURITY STATION
TRUCK SHOP / MINE OFFICE
POWER SUBSTATION
PROPANE FARM
EFFLUENT TREATMENT PLANT
FUEL BAY
PARKING LOT
PROCESS PLANT COLLECTION POND
EFFLUENT DISCHARGE POINT
EAST PIT
GYRATORY CRUSHER PAD
WASTE ROCK STOCKPILE
WEST PIT
LOW-GRADE ORE STOCKPILE
OVERBURDEN STOCKPILE

N



LEGEND

- Freshwater Intake - Camp Site Potable
- Freshwater Intake - Process and Plant Potable
- Mine Effluent Discharge
- Camp Effluent Discharge
- Lake
- Wetland
- Mine Site Road
- Access Road (Hardtack / Sawbill)
- Project Transmission Line
- Accommodation Camp
- Laydown Area
- Office and Truck Shop, Explosives Storage and Processing Plant
- Open Pits
- Low-Grade Ore Stockpile
- Overburden Stockpile
- Process Plant Collection Pond
- Pumping Station
- Tailings Management Facility
- Tailings Management Facility Reclaim Pond
- Waste Rock Stockpile

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd.
Base Data - MNR NRVIS, obtained 2004
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N

500 0 500 1,000 1,500 2,000 2,500
SCALE 1:50,000 METERS

PROJECT
HAMMOND REEF GOLD PROJECT
ATIKOKAN, ONTARIO, CANADA

TITLE
SITE LAYOUT

Golder Associates
Mississauga, Ontario

PROJECT NO. 1408383			SCALE AS SHOWN	VERSION 2
DESIGN	CGE	14 Nov. 2008		
GIS	CGE	17 Feb. 2016		
CHECK	AA	17 Feb. 2016		
REVIEW	AA	17 Feb. 2016		

FIGURE: 5-1

G:\Projects\201313-1118-0010_Osisko_Hammond_Reef\GIS\MXDs\Reporting\1408383SiteLayout.mxd

612500 613000 613500

5423000 5422500 5422000

Sawbill Bay

PROPANE FARM

SPILL CELL

RUNOFF CELL

WEST PIT

EAST PIT

413.12

416

N

LEGEND

- Low Water Level (413.12m)
- Lake Maximum Water Level (416m)
- Clean Fill Requirement
- Fill Area Slope
- 2h: 1v Fill Below High Water Level (416m)
- Process Plant Collection Pond
- Waterbody
- Open Pit

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd.
Base Data - MNR NRVIS, obtained 2004
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N

75 0 75 150 225 300
SCALE 1:5,000 METRES

PROJECT
HAMMOND REEF GOLD PROJECT
ATIKOKAN, ONTARIO, CANADA

TITLE
PROCESSING PLANT SLOPES

Golder Associates
Mississauga, Ontario

PROJECT NO. 13-1118-0010			SCALE AS SHOWN	VERSION 2
DESIGN	SR	14 Nov. 2008		
GIS	JO	2 Dec. 2013		
CHECK	SP	2 Dec. 2013		
REVIEW	SP	2 Dec. 2013		

FIGURE: 5-2

G:\Projects\2013\13-1118-0010_Osisko_Hammond_Reef\GIS\MXDs\Reporting\EIS\Chapter 5\ProcessingPlant_Slopes.mxd

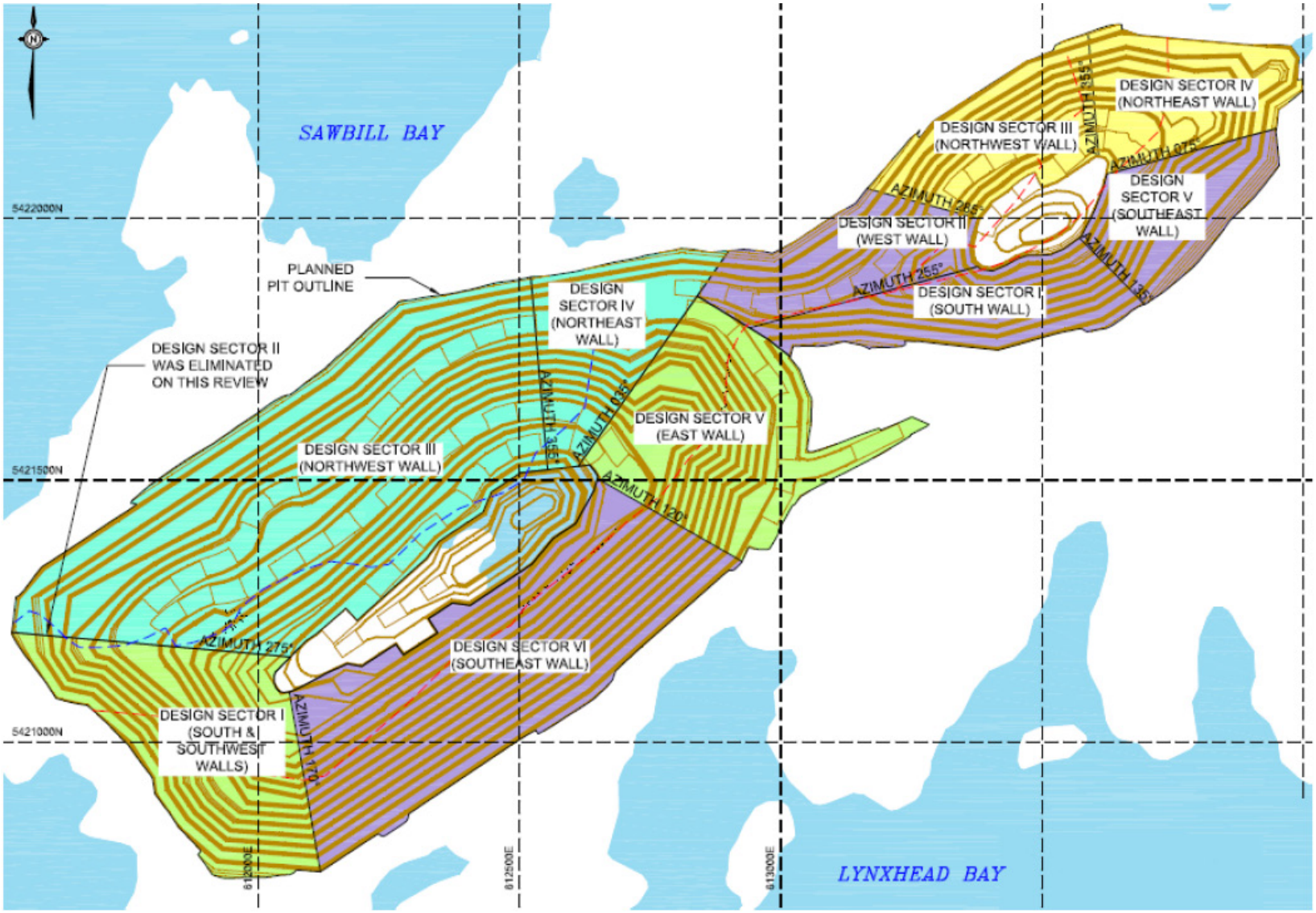


Figure 5-3: Pit Slope Design

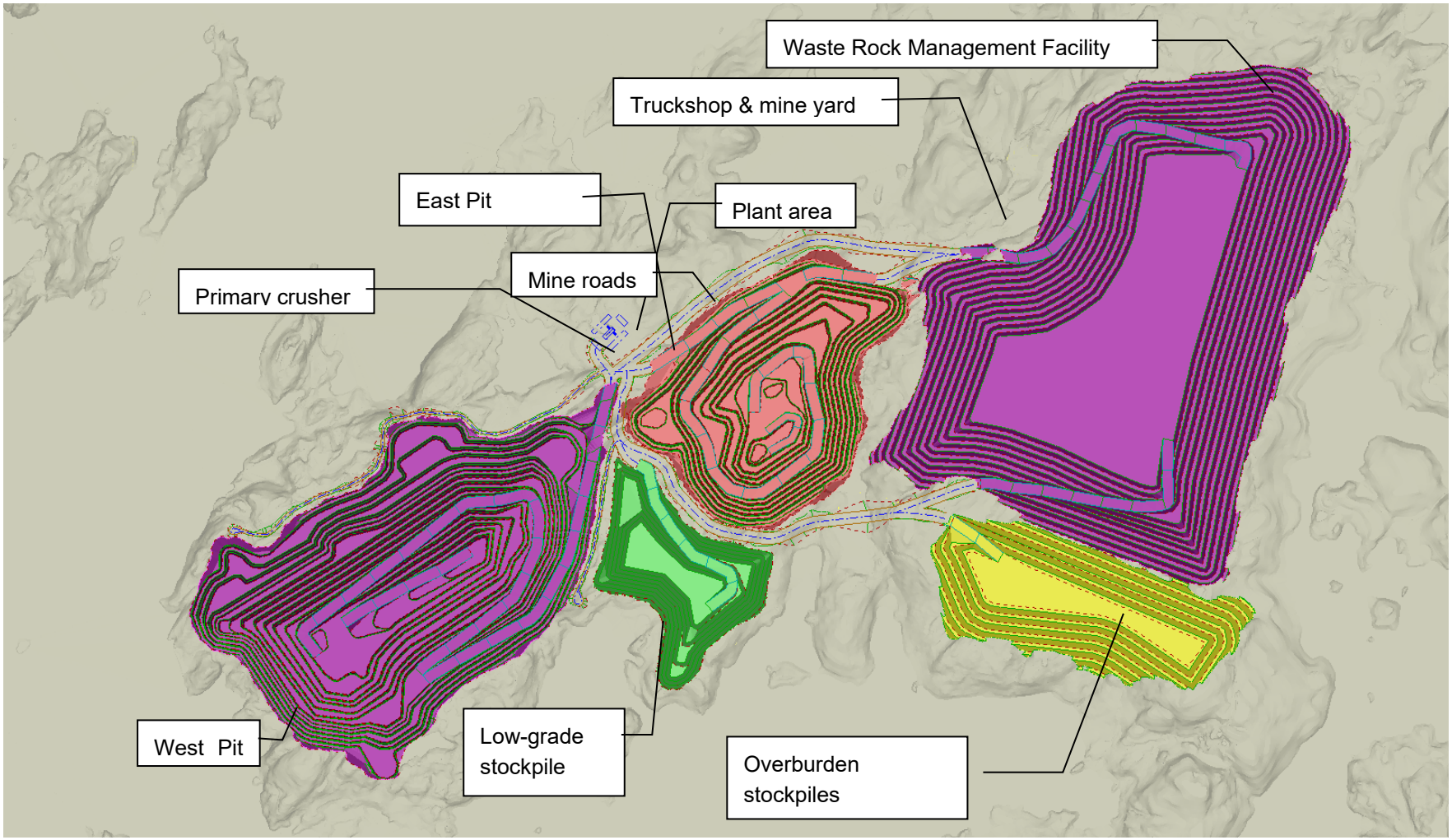


Figure 5-4: Open Pit, Stockpile and Waste Rock Management Facility Configuration

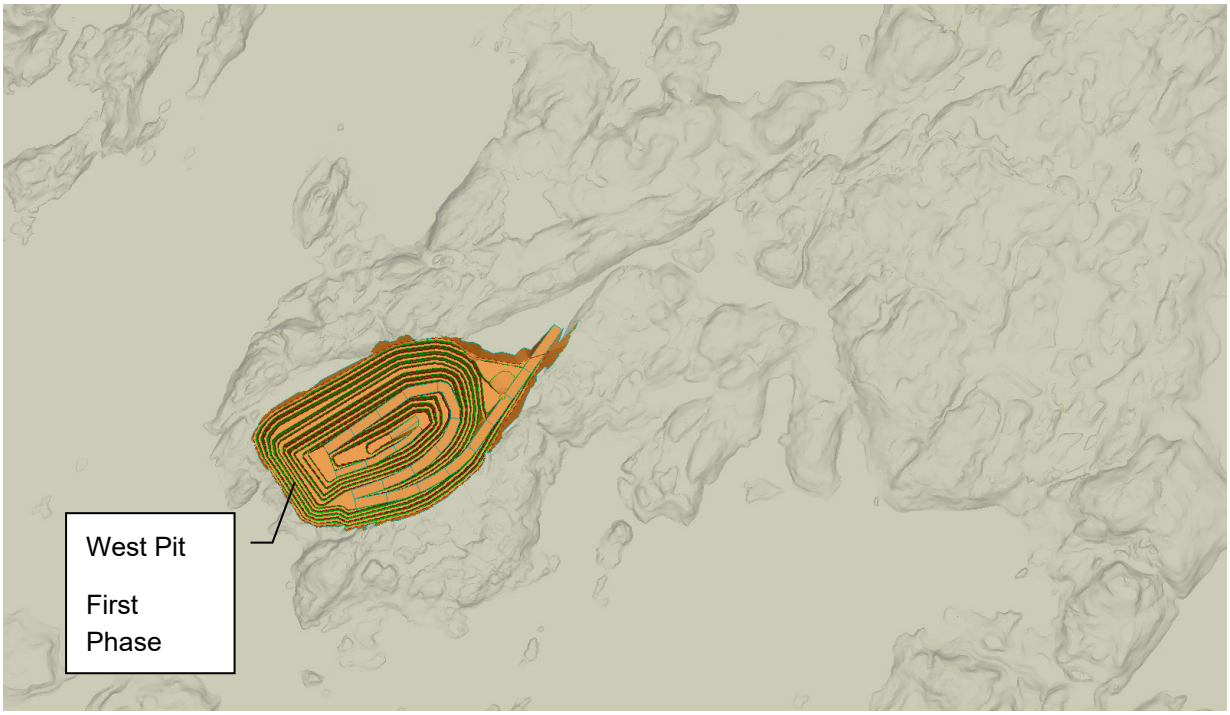


Figure 5-5: Pit Shells – Initial Phase of Operations

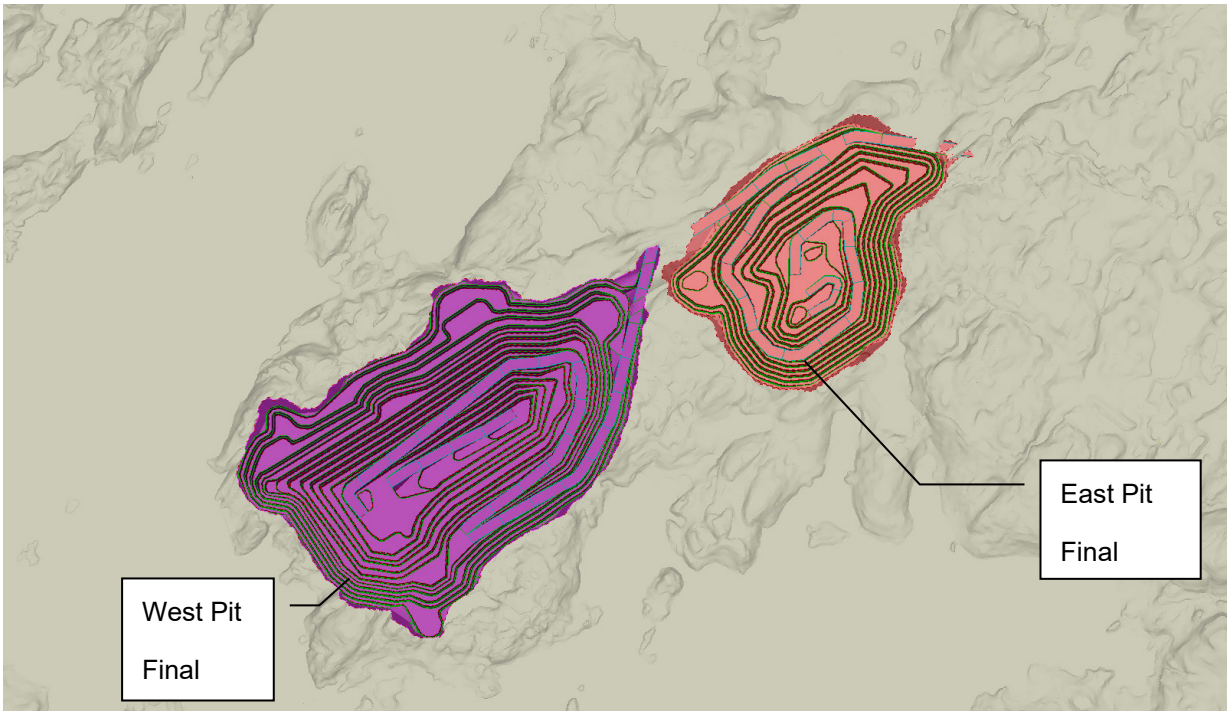
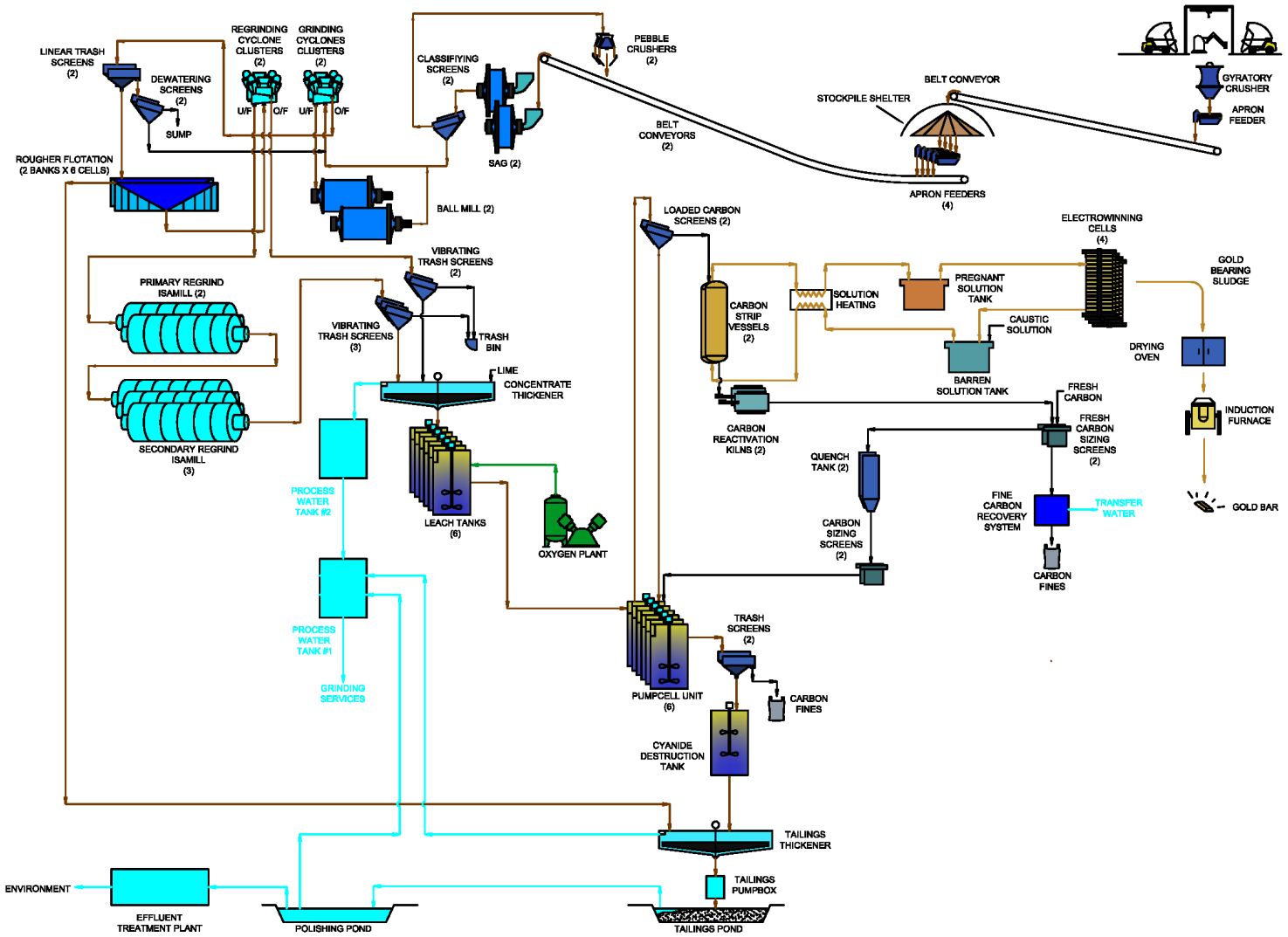


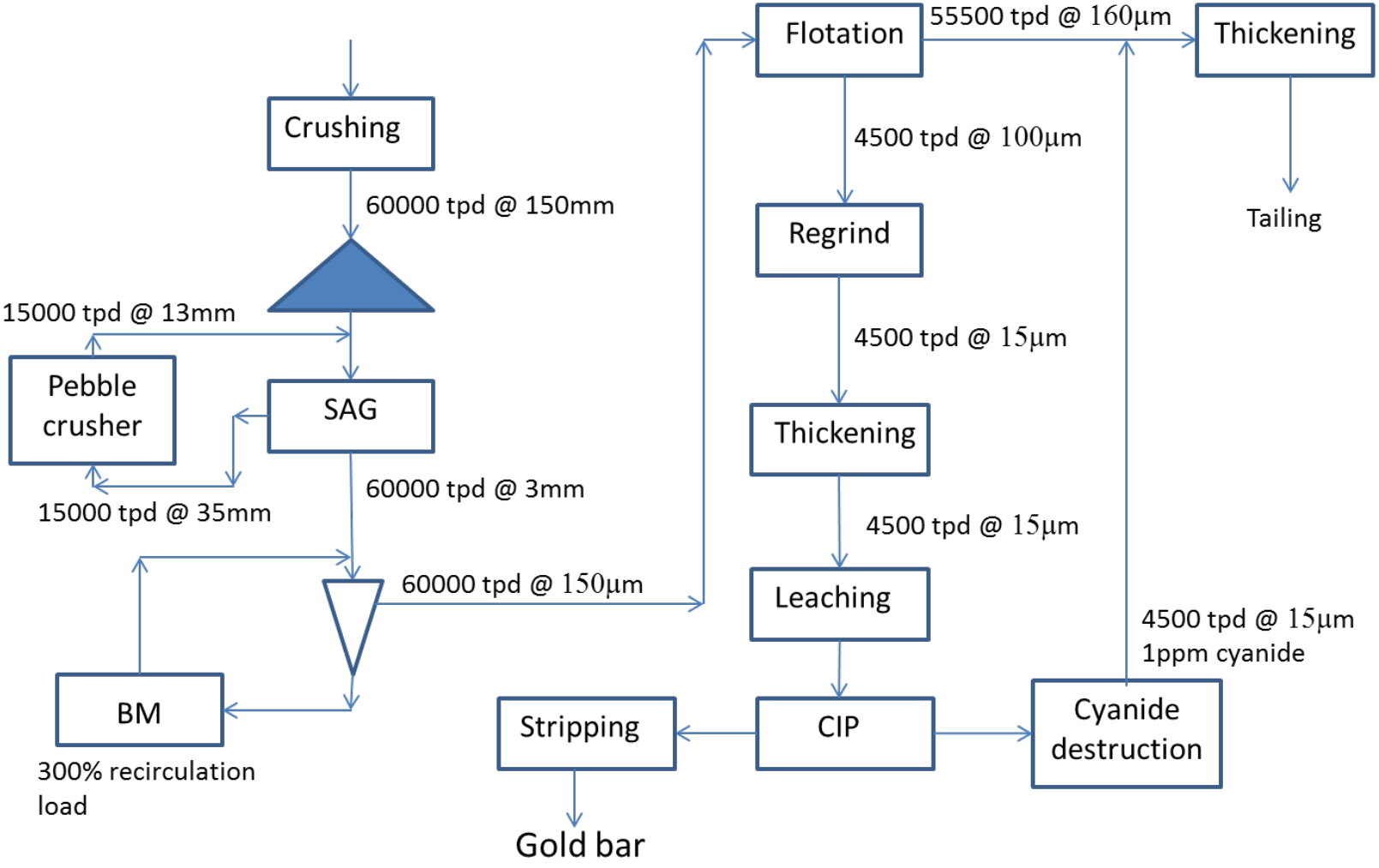
Figure 5-6: Pit Shells – Final Phase of Operations

AMENDED EIS/EA REPORT
CHAPTER 5: PROJECT DESCRIPTION
VERSION 3



Source: OHRG 2013.

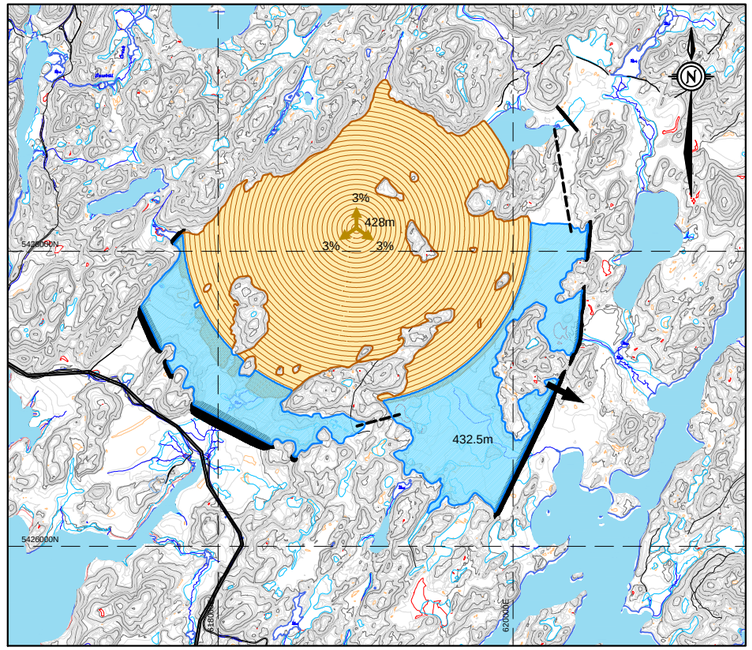
Figure 5-7: Simplified Process Overview



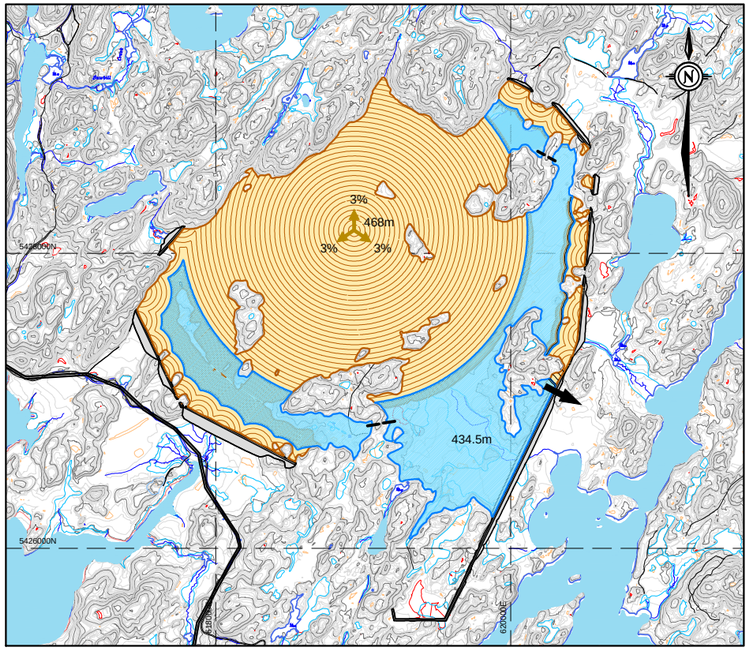
Source: OHRG 2013.

Note: Production rates are estimates and may be improved or increased over time.

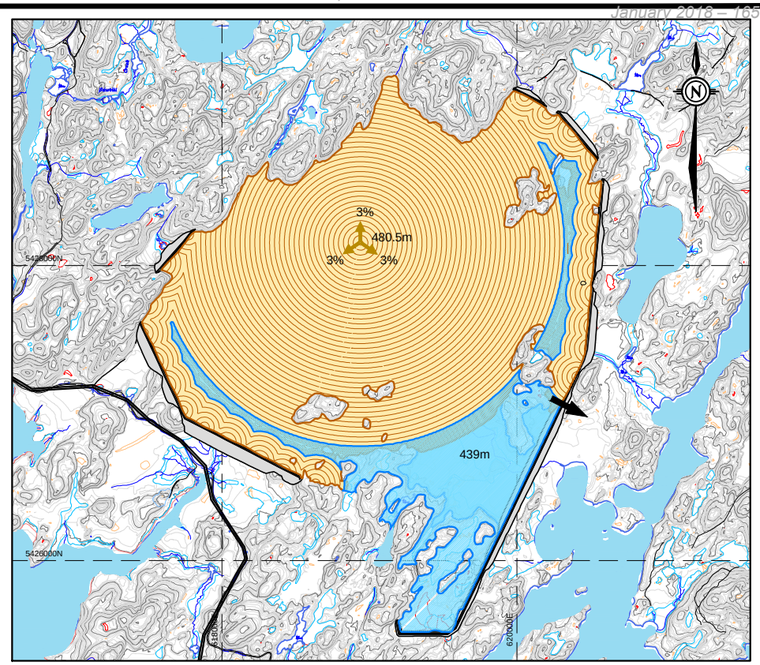
Figure 5-8: Process Flowsheet



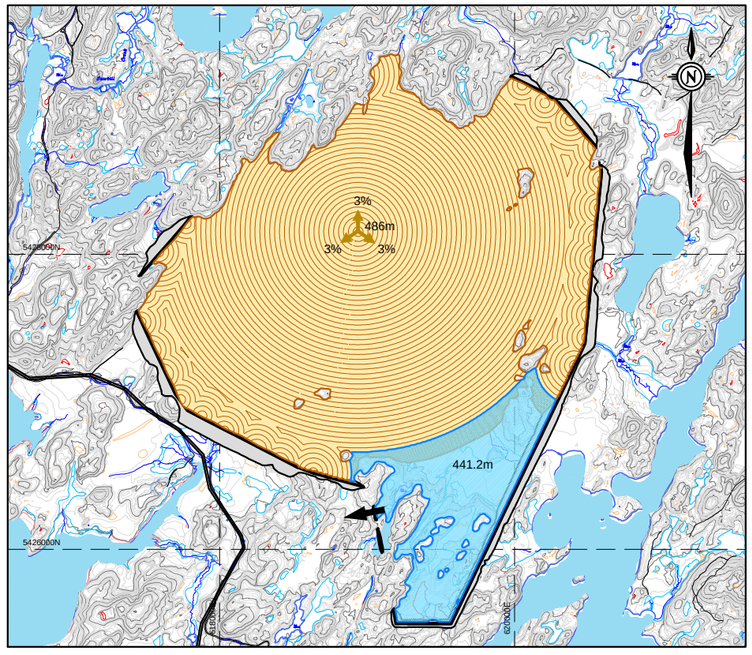
STAGE 1A (LINER) - YEAR 0 T0 2.3



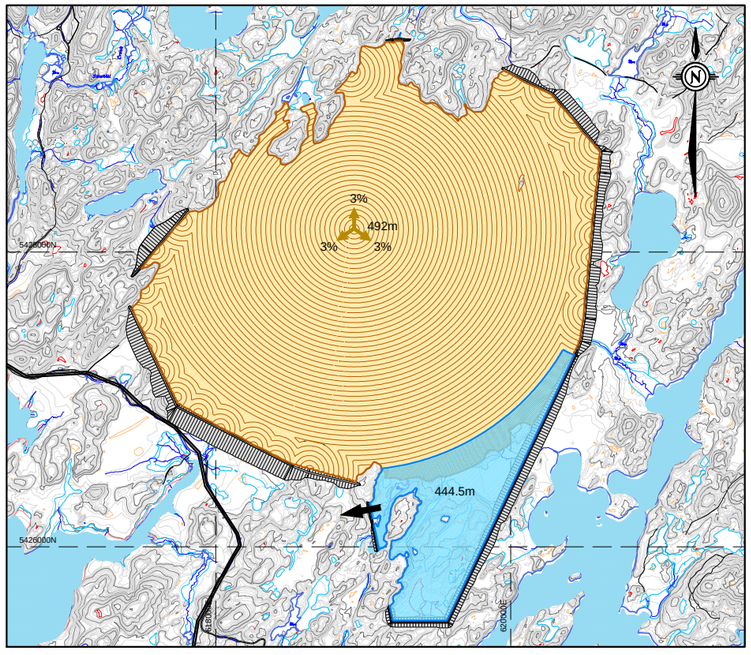
STAGE 1B (ROCKFILL) - YEAR 2.3 TO 3



STAGE 2 - YEAR 3 TO 6



STAGE 3 - YEAR 6 T0 8



STAGE 4 (ULTIMATE) - YEAR 8 TO 10.5

800 0 800 1600
SCALE 1:40000 METRES

LEGEND:

- TAILINGS / RECLAIM DAM
- DEPOSITED TAILINGS
- TAILINGS DISCHARGE LOCATION
- RECLAIM POND
- EMERGENCY SPILLWAY
- INTERNAL RECLAIM POND CONNECTION DITCH
- EXISTING GROUND SURFACE CONTOURS (1m INTERVAL)
- EXISTING WATERBODIES

NOTES:

1. GRID IS NAD83 ZONE 18. ELEVATIONS ARE GEODETIC (masl).
2. TOTAL TAILINGS STORAGE AT END OF STAGE 4 IS 165 M-m³.
3. RECLAIM POND CAPACITY IS 6.2 M-m³ DURING ALL STAGES.
4. EMERGENCY SPILLWAY LOCATION MOVES FROM EAST SIDE TO WEST SIDE OF RECLAIM POND PRIOR TO STAGE 3 (YEAR 6)

REFERENCE:

LIDAR CONTOURS - PROVIDED BY AEROGEOMATICS LTD AND BRETT RESOURCES (1m RESOLUTION, JULY 2010)

Golder Associates
Mississauga, Ontario, Canada

FILE No.	1311180010CA059.dwg
PROJECT No.	13-1118-0010
REV.	VERSION 2
SCALE	AS SHOWN
DATE	2 DEC. 2013
DESIGN	RM
CAD	TDR
CHECK	DCJ
REVIEW	JKB

TITLE

TAILINGS DEPOSITION AND DAM CONSTRUCTION STAGING PLAN

HAMMOND REEF GOLD PROJECT

FIGURE 5-9

PLOT DATE: November 22, 2013
FILENAME: T:\Projects\2013\13-1118-0010 (OHGH, Atikokan)\-CA-\1311180010CA059.dwg

610000 612000 614000 616000 618000 620000

5430000 5428000 5426000 5424000 5422000

N

LIVE ORE STOCKPILE
PARKING
SECURITY STATION
TRUCK SHOP
EFFLUENT DISCHARGE POINT
CRUSHED ORE STOCKPILE
FUEL BAY
INTERMEDIATE COLLECTION POND
WASTE ROCK STOCKPILE
EAST PIT
LOW-GRADE ORE STOCKPILE
OVERBURDEN STOCKPILE
100 0 100 200 300
METRES

ACCOMODATION CAMP
PUMPING STATION
TAILINGS MANAGEMENT FACILITY
CAMP SITE EFFLUENT DISCHARGE POINT
PUMPING STATION
FRESHWATER INTAKE - CAMP SITE POTABLE
EMULSION PLANT
PARKING
SECURITY STATION
PARKING
DETONATOR STORAGE
PEBBLE CRUSHING STATION
FRESHWATER INTAKE - PROCESS AND PLANT POTABLE
Sawbill Bay
LIVE ORE STOCKPILE
INTERMEDIATE COLLECTION POND
PROPANE FARM
SUBSTATION
PROCESSING PLANT
TRUCK SHOP
FUEL BAY
EFFLUENT DISCHARGE POINT
PROCESS PLANT COLLECTION POND
EAST PIT
Jutta Lake
WEST PIT
GYRATORY CRUSHER PAD
WASTE ROCK STOCKPILE
DISCHARGE LOCATION
OVERBURDEN STOCKPILE
LOW-GRADE ORE STOCKPILE
Lynxhead Bay

LEGEND

- Freshwater Intake - Camp Site Potable
- Freshwater Intake - Process and Plant Potable
- Effluent Discharge Point
- Discharge Location
- Pumping Station
- Proposed Ditch
- Index Contour (5m interval)
- Ditch
- Marsh/Swamp
- River/Stream
- Road
- Trail
- Intermediate Collection Pond
- Watershed Boundary
- Lake
- Mine Site Road
- Access Road (Hardtack / Sawbill)
- Project Transmission Line
- Tailings Management Facility
- Pumping Station
- Processing Plant Collection Pond
- Office and Truck Shop, Explosives Storage and Processing Plant
- Accommodation Camp
- Open Pits
- Waste Rock Stockpile
- Overburden Stockpile
- Low-Grade Ore Stockpile
- Tailings Management Facility Reclaim Pond
- Laydown Area

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd
Base Data - MNR NRVIS, obtained 2004
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N

500 0 500 1,000 1,500 2,000 2,500
SCALE 1:40,000 METRES

PROJECT
HAMMOND REEF GOLD PROJECT
ATIKOKAN, ONTARIO, CANADA

TITLE
SURFACE WATER DRAINAGE PLAN

Golder Associates
Mississauga, Ontario

PROJECT NO. 13-1118-0010			SCALE AS SHOWN	VERSION 2
DESIGN	CGE	14 Nov. 2008		
GIS	JO	2 Dec. 2013		
CHECK	SP	2 Dec. 2013		
REVIEW	SP	2 Dec. 2013		

FIGURE: 5-10

G:\Projects\2013\13-1118-0010_Osisko_Hammond_Reef\GIS\MXD\sReporting\EIS\Chapter 5\Prelim_Surfacewater_Drainage.mxd

612500 615000

5422500

N

Sawbill Bay

DETONATOR STORAGE

PEBBLE CRUSHING STATION
PROPANE FARM
POWER SUBSTATION
PROCESSING PLANT
EFFLUENT TREATMENT PLANT
PROCESS PLANT COLLECTION POND
PUMP STATION
GYRATORY CRUSHER PAD

PARKING LOT
SECURITY STATION
TRUCK SHOP / MINE OFFICE
ORE STOCK PILE
PARKING LOT
FUEL BAY

EAST PIT
WASTE ROCK STOCKPILE

Mirta Lake
WEST PIT
LOW-GRADE ORE STOCKPILE
OVERBURDEN STOCKPILE

612500 615000

5422500

LEGEND

- Road
- Trail
- River/Stream
- Lake
- Wetland
- Mine Site Road
- Access Road
- Project Transmission Line
- Exploration Camp
- Tailings Management Facility
- Pump Station
- Process Plant Collection Pond
- Office and Truck Shop, Explosives Storage and Processing Plant
- Accommodation Camp
- Open Pits
- Waste Rock Stockpile
- Overburden Stockpile
- Ore Stockpile
- Tailings Management Facility Reclaim Pond
- Laydown Area

DRAFT

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd.
Base Data - MNR NRVIS, obtained 2004
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N

250 0 250 500 750
SCALE 1:15,000 METERS

PROJECT
HAMMOND REEF GOLD PROJECT
ATIKOKAN, ONTARIO, CANADA

TITLE
PLAN VIEW OF PROCESS PLANT SITE

Golder Associates
Mississauga, Ontario

PROJECT NO. 13-1118-0010			SCALE AS SHOWN	VERSION 2
DESIGN	CGE	14 Nov. 2008		
GIS	JO	2 Dec. 2013		
CHECK	KDV	2 Dec. 2013		
REVIEW	KDV	2 Dec. 2013		

FIGURE: 5-11

G:\Projects\2013\13-1118-0010_Osisko_Hammond_Reef\GIS\MXDs\Reporting\EIS\Chapter 5\PlanView_Process_Site.mxd

590000 600000 610000 620000 630000

5430000 5420000 5410000 5400000

Gull Lake
Garbage Bay
Serpent Lake
Cornell Lake
Sawbill Bay
Mitta Lake
Lynxhead Bay
Upper Marmion Reservoir
Finlayson Lake
Eye Lake
Steep Rock Lake
Lower Marmion Reservoir
Turtle River
Hawk Bay
Turtle Bay
Upper Seine Bay
Light Lake
Dart Lake
Sapawe Lake
Atikokan
Highway 622
Highway 11

R-1 R-2 R-3 R-4 R-5 R-6 R-7 R-8 R-9 R-10 R-11 R-12 R-13 R-14 R-15
P-3 P-4 P-5 P-6 P-7 P-8 P-9 P-10 P-11 P-12 P-13 P-14 P-15 P-16 P-17 P-18 P-19
F-1 F-2 F-3
B-1 B-2 B-3
AF-2

N

LEGEND

- City/Town
- R1 Existing Water Crossing
- B1 New Water Crossing
- Provincial Highway
- Road
- Trail
- Existing Railway
- Power Transmission Line
- River/Stream
- Lake
- Watershed Boundary
- Fibre Optics Line
- Mine Site Road
- Access Road (Hardtack / Sawbill)
- Project Transmission Line
- Project Facilities

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd.
Base Data - MNR NRVIS, obtained 2004
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N

2,000 0 2,000 4,000 6,000 8,000
SCALE 1:150,000 METRES

PROJECT
HAMMOND REEF GOLD PROJECT
ATIKOKAN, ONTARIO, CANADA

TITLE
EXISTING AND NEW WATER CROSSINGS

Golder Associates
Mississauga, Ontario

PROJECT NO. 13-1118-0010			SCALE AS SHOWN	VERSION 2
DESIGN	CGE	14 Nov. 2008		
GIS	JO	2 Dec. 2013		
CHECK	SP	2 Dec. 2013		
REVIEW	SP	2 Dec. 2013		

FIGURE: 5-12

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