REHABILITATION REPORT
19 January 2019 to 18 January 2020

Wonawinta Silver Project

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Rehabilitation Report

Manuka Silver Mine

19 January 2019 to 18 January 2020

Prepared by:

Manuka Resources Ltd
ABN: 80 611 963 225
Grafton Bond Building
201 Kent Street
SYDNEY NSW 2000

Telephone: (+61) 421 370 902
Email: hlynch@manukaresources.com.au

With the assistance of:

R.W. Corkery & Co. Pty. Limited
Geological & Environmental Consultants
ABN: 31 002 033 712

Brooklyn Office:
1st Floor, 12 Dangar Road
PO Box 239
BROOKLYN NSW 2083

Telephone: (02) 9985 8511
Facsimile: (02) 9985 8208
Email: brooklyn@rwcorkery.com

Orange Office:
62 Hill Street
ORANGE NSW 2800

Telephone: (02) 6362 5411
Facsimile: (02) 6361 3622
Email: orange@rwcorkery.com

Brisbane Office:
Suite 5, Building 3
Pine Rivers Office Park
205 Leitchs Road
BRENDALE QLD 4500

Telephone: (07) 3205 5400
Facsimile: (02) 9985 8208
Email: brisbane@rwcorkery.com

TITLE BLOCK

Name of Mine	Manuka Silver Mine (Wonawinta)
MOP Commencement Date	31 October 2019
MOP Completion Date	31 December 2021
Mining Authorisations	ML 1659
Name of Authorisation holders	Manuka Resources Ltd
Name of Mine Operator (if different)	n/a
Name and Contact Details of the Mine Manager (or equivalent)	David Power (+61 419 298 359)
Name of Representative(s) of the Authorisation Holder(s)	Haydn Lynch
Title of Representative(s) of the Authorisation Holder(s)	Chief Operating Officer
Signature of Representative(s) of the Authorisation Holder(s)	
Date	
Version	1

FOREWORD

This Rehabilitation Report for the Manuka Silver Mine has been prepared by Manuka Resources Ltd ("the Company" or "Manuka Resources"). Manuka Resources is the lease holder of Mining Lease (ML) 1659. The Manuka Silver Mine ("the mine"), commonly known as the Wonawinta Silver Mine and is located approximately 85km south of Cobar, via Bedooba Road (Shire Road 13) on the Manuka property (see Figure 1.1).

This Rehabilitation Report has been prepared in accordance with Condition 4 of ML1659 and follows the format and content requirements identified in *Environmental Management Guidelines for Industry: The Annual Environmental Management Report* (last updated January 2006) prepared by NSW Department of Primary Industries – Mineral Resources.

This is the sixth Rehabilitation Report (formerly known as the Annual Environmental Monitoring Report or AEMR) for the Manuka Silver Mine and is applicable for the period 19 January 2019 to 18 January 2020 (the "Reporting Period").

History of Site Ownership

Ownership and management of the Manuka Silver Mine remained unchanged during the reporting period.

- The Manuka Silver Mine was established by Cobar Consolidated Resources (CCR) in 2012, who conducted site development, mining and processing activities.

- CCR entered administration on 18 March 2014. PPB Advisory managed the site during liquidation and the proceeding sale to Southern Cross Goldfields Ltd in September 2014.

- Southern Cross Goldfields Ltd changed its name to Black Oak Minerals Limited on 28 November 2014 and operated the site until it too entered administration on 27 November 2015. Black Oak Minerals had conducted mining before converting wholly to processing operations from September 2015, including the processing of gold ore from Mt Boppy. PPB Advisory managed the site during liquidation and the proceeding sale to Manuka Resources Ltd on 31 August 2016.

- Manuka Resources Ltd currently operates the site.

- After several years of care and maintenance activities the company commenced refurbishment of the processing plant during September 2019 together with other site activities including commencing works for a lift on the tailings facility, hiring of a plant commissioning team, review of drilling plans on the mining lease and general infrastructure improvements.

FIGURES

TABLES

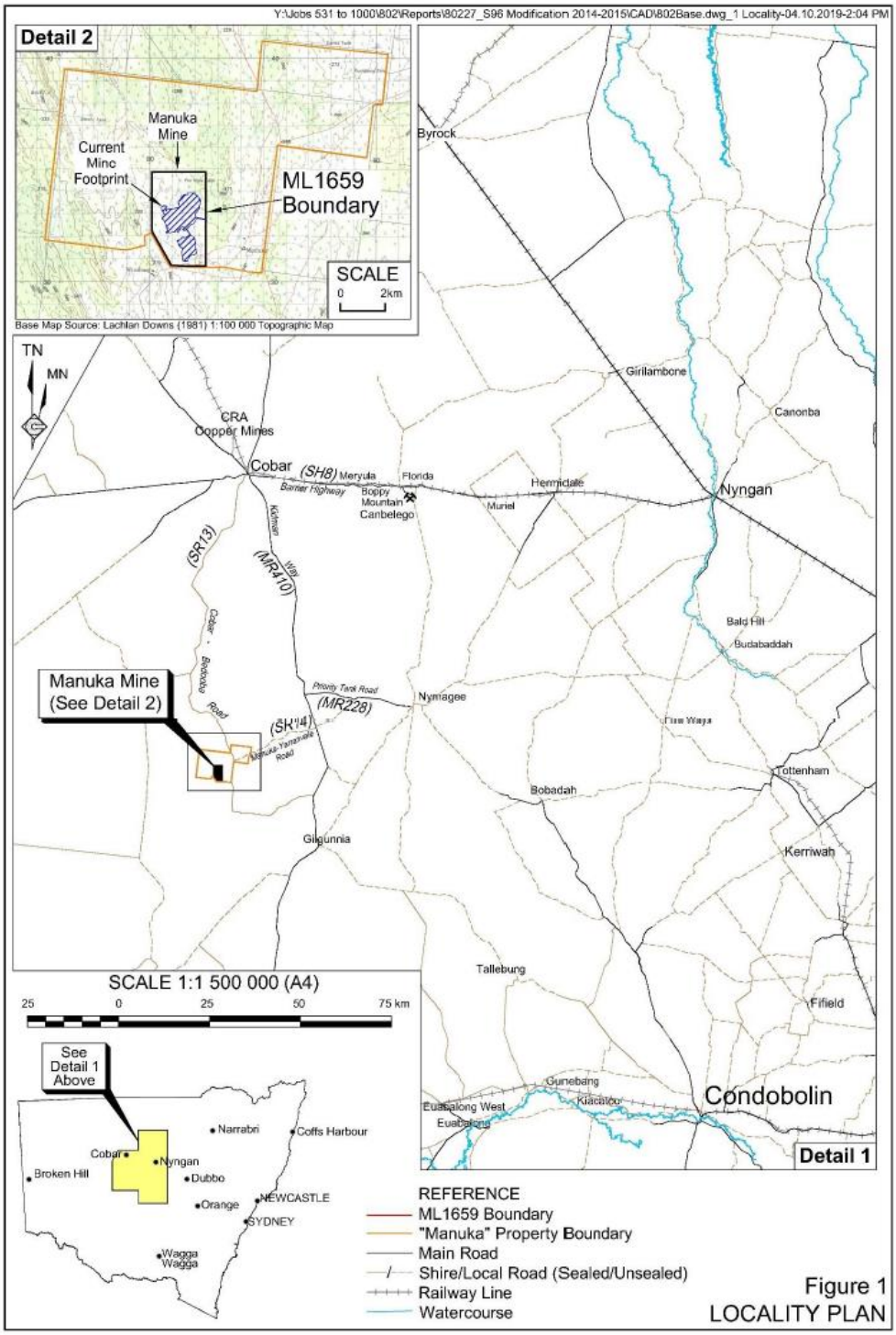
LIST OF ACRONYMS

AEMR	Annual Environmental Management Report
bgl	Below Ground Level
BOM	Black Oak Minerals
CCR	Cobar Consolidated Resources
DA	Development Approval
DRE	Division of Resources and Energy
EL	Exploration Licence
ESCP	Erosion and Sediment Control Plan
EPA	NSW Environment Protection Authority
ML	Mining Lease
MOP	Mining Operations Plan
RL	Relative Level
ROM	Run-of-Mine
TSF	Tailings Storage Facility
WRE	Waste Rock Emplacement

1. INTRODUCTION

1.1 MINING LEASE 1659

The Manuka Silver Mine ("the mine") is located within Mining Lease (ML) 1659, issued to Manuka Resources Ltd. ML 1659 covers an area of 923 ha within the "Manuka Station" property, approximately 85km south of Cobar, via Bedooba Road (Shire Road 13). The Manuka tenements are highlighted in red on **Figure 1** below.



1.2 CONSENTS, LEASE, LICENCES AND PERMITS

The consents, leases and licences applicable to the Manuka Silver Mine are detailed below.

Development Consent DA 2010/LD-00074

DA 2010/LD-0004 relates to establishment of the mine and associated operations including two modifications approved on 29 February 2012 and 6 November 2012. Approvals were granted by the Western Region Joint Regional Planning Panel (the "JRPP"). Cobar Shire Council retains administrative responsibility for ensuring compliant operation of the mine against the conditions of the development consent.

Development Consents DA 2012/LD/00005 and DA 2012/LD/00035

DA's 2012/LD/00005 and 2012/LD/00035 relate to the establishment of a permanent mine camp upon the Manuka property, approved on 22 March 2012 and 10 August 2012 respectively. Cobar Shire Council retains administrative responsibility for ensuring compliant operation of the mining camp against the conditions of the development consents.

Environmental Protection Licence (EPL) 20020

Issued by the NSW Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997* for the scheduled activities of:

- Crushing, grinding or separating (>500,000t – 2,000,000t);
- Metal processing (0-100,000t);
- Mineral processing (>500,000t-2,000,000t); and
- Mining for metals (>500,000t-2,000,000t).

Mining Lease 1659

Issued following approval of DA 2010/LD-00074, ML 1659 provides conditions of operations within the nominated lease area under the *Mining Act 1992*. The preparation of this Rehabilitation Report is required by Condition 4 of ML 1659.

Water Access Licences

Extraction of groundwater from a borefield on the neighbouring "Wirlong" property for clean water supply to the plant, camp and administrative buildings.

- Water Access Licence 36531 for 300 ML per annum.
- Water Access Licence 30322 for 750 ML per annum.

1.3 MINE CONTACTS

Current Ownership

Mr Haydn Lynch is appointed Chief Operating Officer of Manuka Resources and is responsible for the overall environmental and operational performance of the mine during its ownership by Manuka Resources.

Mr David Power is the appointed site General Manager and is responsible for the everyday activities on the mine site and achievement of the nominated and conditioned operational and environmental goals for the mine.

The contact details for the mine are as follows.

Postal Address:	Manuka Resources Ltd P.O. Box 273 Cobar NSW 2835	Physical Address:	Manuka Silver Mine Shire Road 13 Cobar NSW 2835
Phone:	0421 370 902		
Email:	hlynch@manukaresources.com.au		

1.4 ACTIONS REQUIRED AT PREVIOUS REHABILITATION REVIEW

The previous Rehabilitation Report was lodged by Manuka Resources in February 2019. While there were no specific actions required out of the previous review, there were already agreed actions taking place in relation to the 2018 EPL restoration site inspections and audit. Those discussions were ongoing over August 2018 and formed the focus of works and preparations at the site over 2019. These are addressed where appropriate throughout this document.

Immediate rehabilitation areas have now been agreed with the Resources Regulator and now that the site is active with personnel and equipment, these agreed priority action areas will be addressed during this reporting period.

2. OPERATIONS DURING THE REPORTING PERIOD

This section outlines the operations that have occurred at the mine within the 2019-2020 reporting period.

Figure 2 illustrates the current status of the Mine, identifying the activities noted throughout this section together with the approved disturbance footprint of the open cut pits, waste dumps and soil stockpiles which have not yet been developed, but are included in the MOP.

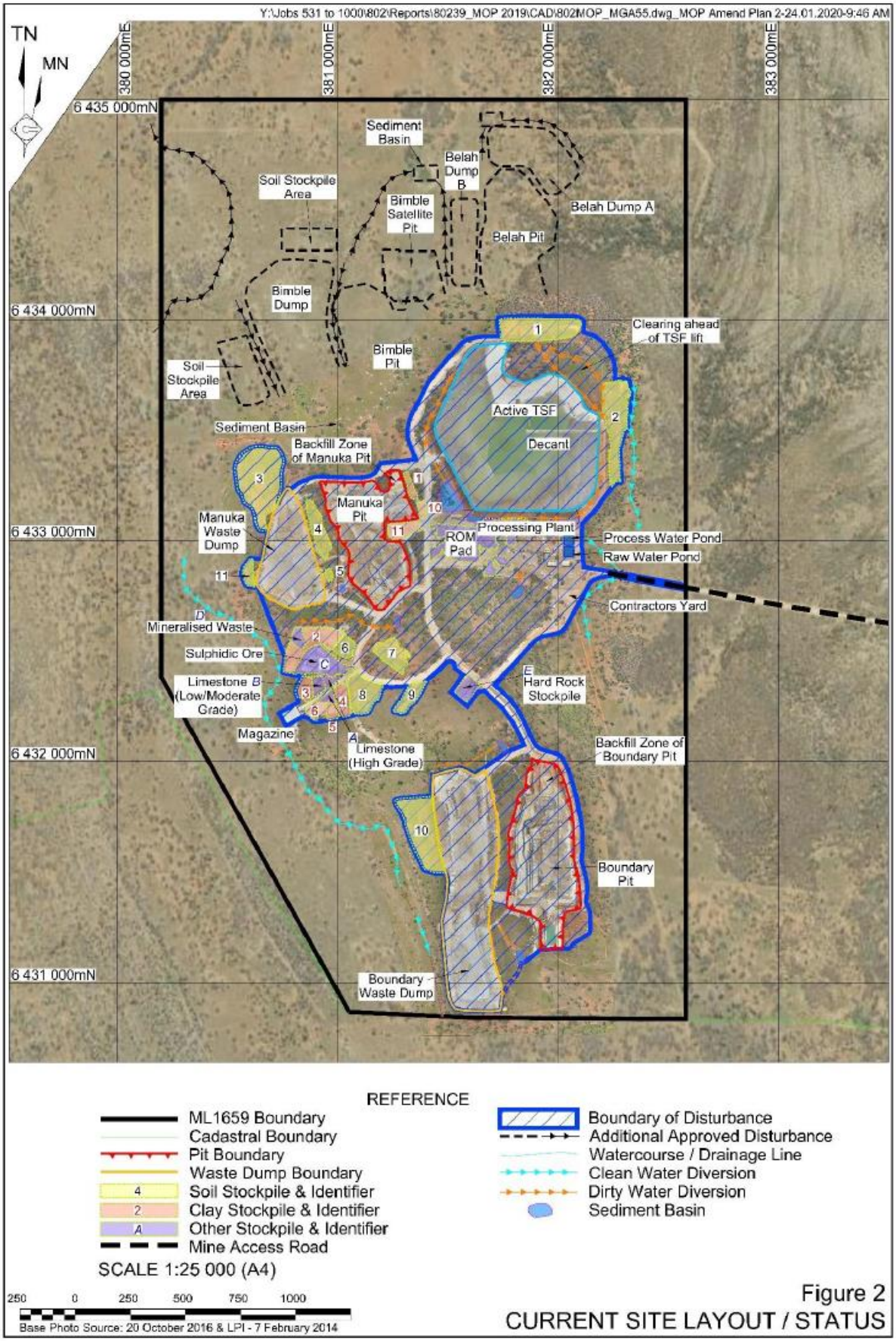


Figure 1: **Current site status / layout**

2.1 EXPLORATION

Manuka Resources

No exploration activities were undertaken during the reporting period.

The Geological Survey of NSW and Geoscience Australia have completed their aeromagnetic surveys over Manuka's northern EL's and data is expected in March 2020. This data may result in additional targets on those leases once results have been assessed.

Exploration drilling programs have been designed to drill within the boundaries of disturbed land and it is expected these will be progressed during calendar 2020. The Company will complete up to 12 exploration holes totalling up to 4 000m within ML 1659. Adjacent to each of the four open cut pits, two Reverse Circulation (RC) holes and one Diamond (DD) hole will be completed within the footwall of the Manuka thrust fault zone to better define the base metal sulphide mineralisation. No drilling will take place before approval is obtained under Part 5 of the EP&A Act for drill sites located beyond the current or approved disturbance footprint.

Additional infill drilling to better define the resource of the Belah and Bimble Pits will also be undertaken within the defined and approved impact footprint of these pits. Timing for these drilling programs is yet to be determined.

Figure 3 provides a map of the current tenements held by Manuka Resources Ltd.

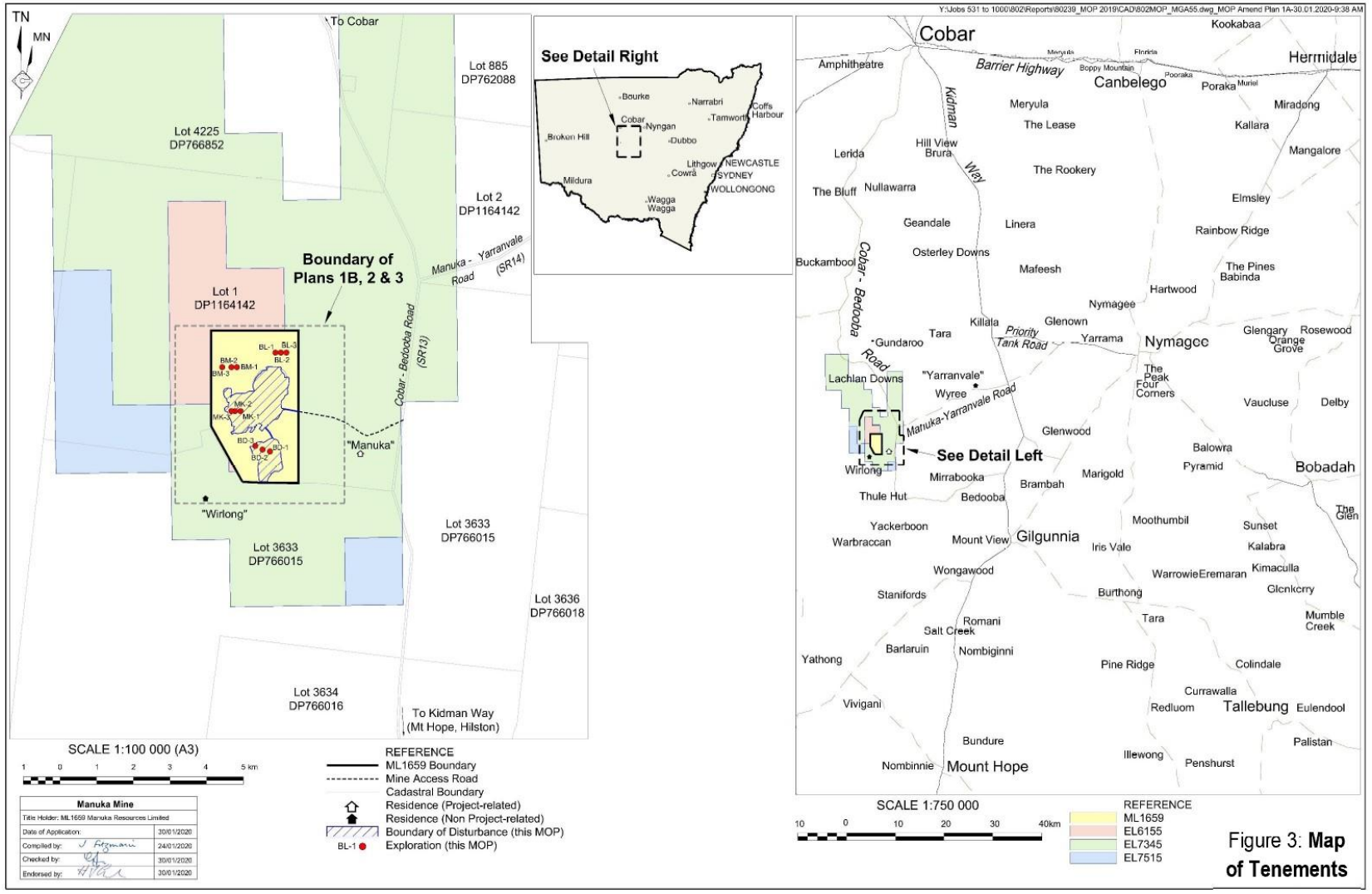


Figure 3: **Map of Tenements**

Figure 3: **Map of Tenements Currently Held by Manuka Resources Ltd.**

2.2 LAND PREPARATION

All land clearing and site construction works within ML 1659, including TSF, waste dumps and new mining camp, were completed prior to the 2019-2020 reporting period. No further disturbance to land has occurred during the current reporting period.

2.3 CONSTRUCTION

Manuka Resources has not undertaken any construction works under its term of ownership. No construction activities are forecast as all site infrastructure is in place for the proposed near-term activities. The construction of an additional lift on the existing TSF wall from the current elevation of 262.2 AHD (maximum embankment height of 11m) to 264.2m AHD, does not exceed the current area of disturbance and will be carried out in accordance with the detailed TSF design prepared by AECOM Australia (2020).

The lifting of the wall will be undertaken in a series of lifts (1.5m to 2.0m) and utilise previously stockpiled material within the Mine Site, likely a combination of the clay waste contained within the Manuka waste dump and other clay stockpiles to ensure appropriate permeability levels (<1 x 10-9m/s) are maintained.

2.4 MINING

No mining activities were conducted during the reporting period. The current MOP (lodged January 2020) does not contain any mining activities. Future MOP's will address mining as it is the company's intention to develop viable mining plans on the known shallow oxide resources and untested deeper resources. **Figure 4** displays the current state of mining development upon ML 1659.

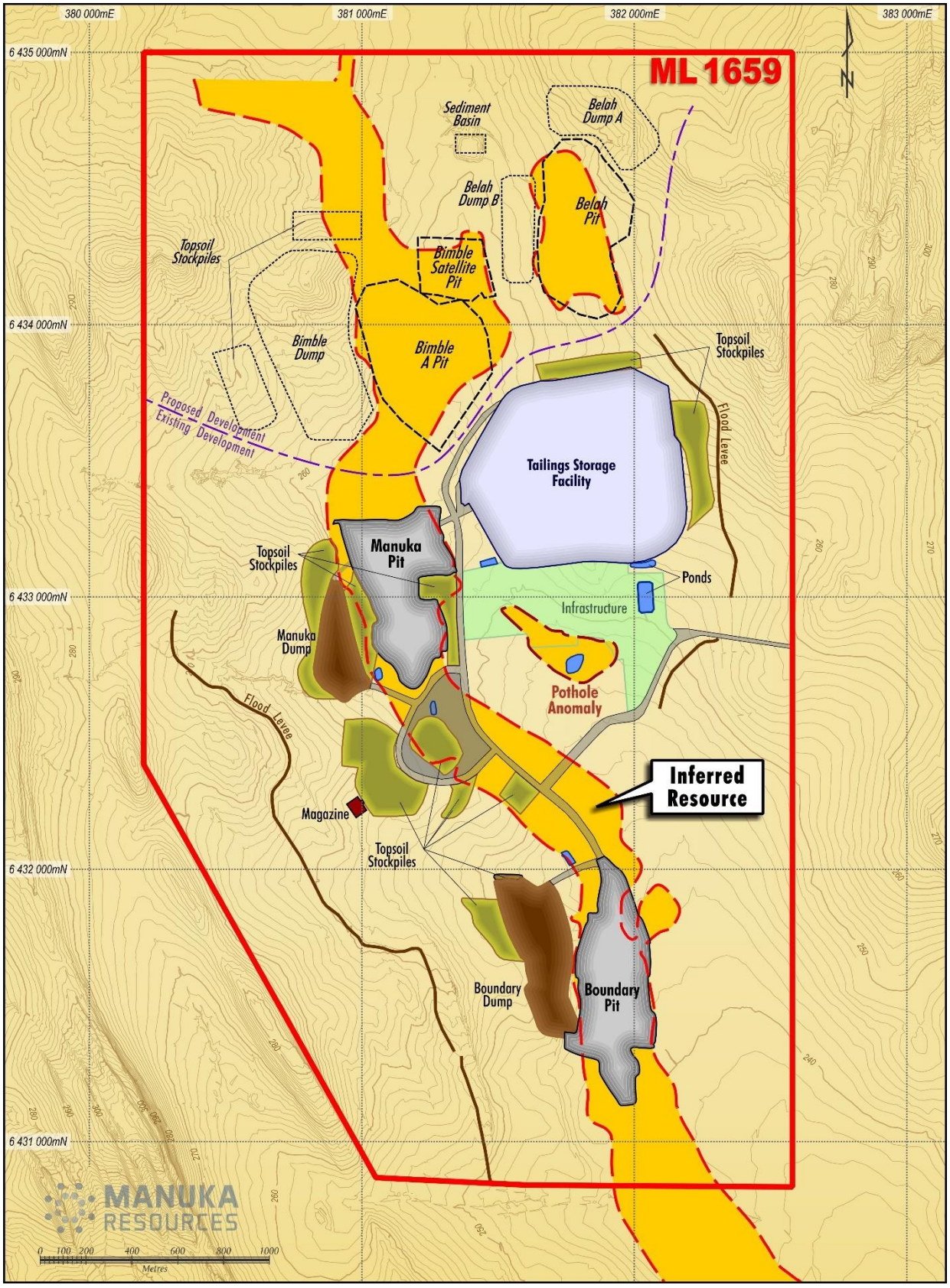


Figure 4: Existing mining development on ML 1659

2.5 MINERAL PROCESSING

A mineral processing plant is located at the Manuka Silver Mine, including feed preparation, carbon-in-leach circuit, carbon regeneration and Merrill process (mercury removal and silver smelting). The processing plant was decommissioned and cleaned out in early 2016 and is currently being refurbished to allow for the processing of imported Mt Boppy gold ore. As at the date of this report, plant works are 85% completed with a view to commissioning first ore in March 2020.

The processing operations to take place over the next reporting period (for the Mt Boppy ore) will utilise the same carbon-in-leach processing methodology as the approved processing operations. **Figure 5** presents the processing flow chart. Notably, for processing of the Mt Boppy ore, the mercury retort will not be required.

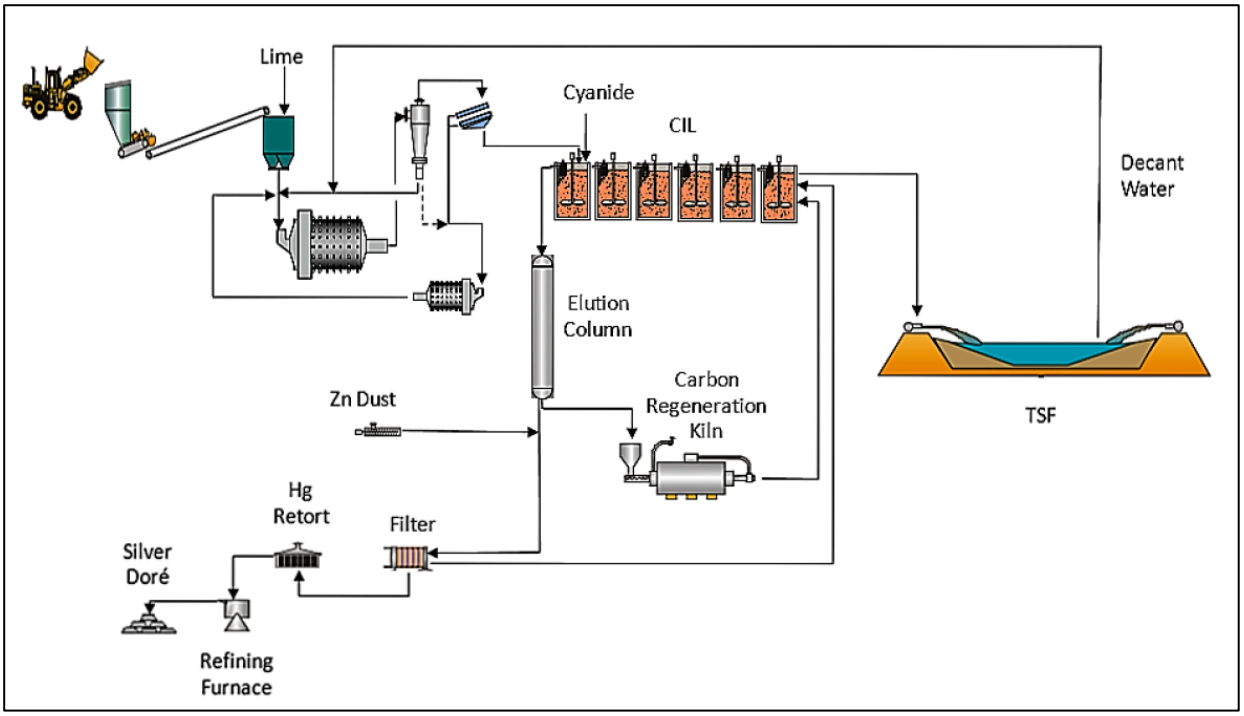


Figure 5: **Processing Flow Chart**

In summary, ore from Mt Boppy will be processed at the Manuka Mine Site as follows:

- Crushed and screened ore to be delivered to the Mine and placed on the ROM Pad.
- The crushed ore will be fed to the gold mill, with lime added to control pH, for gold recovery.
- Gold will be recovered from the ore using the same processing methodology as the existing silver recovery circuit, namely:
  - leaching of gold from the ore using sodium cyanide in the existing carbon-in-leach circuit
  - adsorption of gold onto activated carbon
  - stripping of the gold from the carbon in a new elution circuit
  - precipitation of a gold-rich precipitate in a new electrowinning cell

– production of gold doré using the existing calcine oven and furnace.

2.6 WASTE MANAGMENT

Waste generated on ML 1659 falls within two defined categories:

- Non-Production waste; or
- Production waste.

Both waste streams are consistent with details provided in the MOP.

2.6.1 Non-Production Waste

Waste management processes have been improved during the reporting period as a result of site activities ramping up.

Non-production waste generated during this report period was collected at the Mine and removed for disposal or recycling by a suitable qualitied contractor. **Table 1** presents the non-production waste and describes how each class of waste is stored and subsequently removed from the Mine.

Table 1 **Non-Production Waste Management**

Waste Type	Storage / Management	Removal / Disposal
General waste (including food scraps)	Covered bins or skips are located at lunch areas, offices, outside workshops and elsewhere as required. Where these bins are located in open areas, they are fitted with animal proof lids.	Collected on a regular basis by a licensed contractor and transported to the Cobar Waste Disposal Facility for disposal.
General Recyclables	Covered bins or skips are located at lunch areas, offices, outside workshops and elsewhere as required. Where these bins are located in open areas, they are fitted with animal proof lids.	Collected on a regular basis by a licensed contractor and transported to a licensed recycling facility in Dubbo.
Waste Oils and Greases	Placed within the bunded tank within the workshop area. Where required, smaller, temporary storage containers are positions in work areas, with the contents of those containers then transferred to the large storage tank.	Collected on an as needs basis by a licensed contractor and transported to an appropriately licensed facility for recycling.
Batteries	Placed within a covered and marked used battery storage area until removed from the Mine.	Collected on an as needs basis by a licensed contractor and transported to an appropriately licensed facility for recycling.
Tyres	Placed within a marked used tyre storage area until removed from site.	Tyres are disposed of at a licensed waste management facility or removed by a third part approved to recycle tyres.
Scrap Metal	Stored in a specified area within the workshop area, or elsewhere, as required.	Collected on an as needs basis by a scrap metal recycler.
Wastewater	Treated in the on-site Sewage Treatment Plant.	The on-site system is pumped out by a licensed contractor on an as needs basis.

2.6.2 Production Waste

No mining or waste rock generation has occurred during the reporting period.

No further waste rock is expected to be extracted during the next reporting period, or during the term of the current MOP; therefore, activities will revolve around the reuse of materials for construction and/or rehabilitation.

The majority of the waste rock to be removed on the Mine, is pale and ferruginous clay or oxidised limestone which, given the already oxidised nature of the material, represents a very low acid generating potential.

The remaining material, in the form of marcasite-bearing black clays and fresh limestone, contain sulphides which could have acid generating potential if exposed to air and oxidised. Previous (2010) analyses of the mineralogy of the two sulphidic waste rock types indicated the following.

- The fresh limestone contains less than 2% sulphide as pyrite, galena, and sphalerite.

- The black clay contains an average 10% sulphide as framboidal marcasite with minor galena, sphalerite and jarosite.

These 'waste' streams contain grades of silver (2.1g/t to 3.5g/t) which could be recoverable and have therefore been stockpiled separately (as sulphidic ore). Furthermore, the fresh limestone also provides a potential source of acid neutralising material should this be required over the life of the Mine. These stockpiles are segregated from other waste rock and natural runoff and, if not processed, will be managed separately of the waste rock dumps.

2.7 ORE AND PRODUCT STOCKPILES

An existing Run-of-Mine (ROM) stockpile of 500,000t of various grades of silver ore was maintained on the ROM pad between April 2016 and January 2020.

Various low grade and hard limestone stockpiles are located in the low-grade stockpile area between the Manuka and Boundary Pits. Non mineralised stockpiles may either be used for the construction of hardstands or haul roads within the mine site or stored for future processing if metals prices allow production to be economic. **Table 2** details the number of stockpiles and contents. Survey and layout plans of key stockpiles are shown in **Figure 8**, towards the end of this document.

Table 2. Mineralised stockpiles

Number	Description	Volume	SG	Tonnage
1	Scats	6,771	2.0	13,542
2	Clay (screened)	9,853	2.0	19,706
3	Limestone	178,591	1.8	321,464
4	Oversized	4,004	2.2	8,809
5	Limestone	5,597	1.8	10,075
7	Clay (pre crush)	2,934	2.0	5,868
8	Clay	42,958	2.0	85,916
9	Limestone	7,808	1.8	14,054
9o	Limstone (oversized)	1,574	2.0	3,148
	Ore total	**247,741**		**457,083**

2.8 WATER MANAGEMENT

The objectives for the management of surface water, erosion, sedimentation and pollution at the Manuka Silver Mine are as follows.

- To divert surface water flows (clean water) away from active areas of disturbance using drains and diversion banks.
- To control the flow of surface water over areas of disturbance (dirty water) using rock check dams, diversion banks and contouring.
- To ensure the transfer of saline water on the mining lease is appropriately controlled and mitigation strategies are in place in the event of a leak or spill.
- To ensure wastewater is stored, transferred and re-used in such a way as to minimise the risk of pollution.
- To manage the use, storage and (in the event of a spill or leak) control and clean-up of hydrocarbons; and
- To manage the extraction and storage of waste rock to ensure no acidic runoff is generated.

Table 3 provides a summary of volumes of water stored at the start and end of the reporting period as well as the total storage capacity. As there have been no operational activities, low rainfall and very high day time temperatures, the TSF and all water containment structures including SB1S are virtually dry. Consent to use the Process Water Pond has not yet been re-instated and therefore this pond remains dry.

Table 3: Stored Water

	Volumes Held (cubic metres)		
	Start of Reporting Period[1]	**End of Reporting Period**	**Storage Capacity**
Clean Water (Raw Water Pond)	2,950	2,000	7,396
Dirty Water (SB2-3, SB5-6, Internal ROM Basin)	Dry	Almost dry	42,587
Controlled Discharge Water	n/a	n/a	n/a
Contaminated Water (TSF, Process Water Pond)	Dry	Almost dry	0[2]

During the 2020 reporting period, while processing the Mt Boppy ore, it is proposed to the CIL tanks to store clean water. This will assist in maintaining sufficient clean water stores on site while the liners of the old storage tanks are not yet repaired or approved for use.

3. ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

3.1 STATUS OF COMPLIANCE ACTIONS

While there were no specific compliance actions required out of the previous review, there were already agreed actions taking place in relation to the 2018 EPL restoration site inspections and audit. Those discussions and actions have been ongoing since August 2018 and formed the focus of works and preparations at the site over the 2019 period.

A key focus, outside of the audit actions, was also meeting the commitments made in the Manuka Asset Register and Refurbishment Plan, which was 90% complete as at the end of December 2019, with the remaining 10% of actions to be closed off before end March 2020.

Further discussions with the Resources Regulator over 2019 have allowed for the immediate rehabilitation priority areas to be defined and agreed upon and now that the site is active with personnel and equipment, these agreed priority action areas will be addressed during the 2020 reporting period.

3.2 CYANIDE MANAGEMENT

The management of cyanide was identified as a key environmental risk factor for the Manuka Silver Mine during the 2014 AEMR review. Sodium cyanide is a vital reagent used during the processing of both silver and gold ore in order to extract and refine the end product.

While site operations have been suspended, 22,000 kg of solid sodium cyanide is stored onsite within locked containers. All historical stockpiles of transport pallets and packaging has been appropriately decontaminated and disposed to the Cobar Waste Depot Facility.

Monitoring of weak acid dissociable (WAD)-cyanide concentrations at the Process Water Pond and Tails Storage Facility are not required while the two structures are dry. This will recommence in conjunction with other cyanide management processes prior to the site becoming operational once again.

Review of the process plant by independent engineer, COMO Engineering, in 2017 identified a lack of automatic controls at the cyanide dosing point on the plant. A lack of automated dosing controls could potentially have been the cause of the apparent cyanide spikes that were recorded in prior operations by both Black Oak Minerals and Cobar Consolidated Resources. Part of the Manuka Resources plant refurbishment program will be to install automated control systems at several locations in the flowsheet and to improve operator access to the sampling areas of the plant as it is suspected manual sampling was also not being carried out as regularly as good practice dictates.

3.2 TAILINGS STORAGE FACILITY

The Tailings Storage Facility (TSF) is a clay-lined dam designed to accept processing waste (tailings slurry). The slurry is discharged into the dam and the water component is either extracted via a decant in the centre of the dam for re-use in the plant or lost via evaporation. The initial design of the Manuka TSF allowed for nine construction stages to gradually increase the dam wall over the forecast life of the mine, to a maximum height of 28.5m. Upon mine closure, clay would be applied to the TSF surface to encapsulate the processing waste before subsoil and topsoil applied for revegetation.

Based on current and forecast processing operations, it is expected that the processing of remaining Mt Boppy ore will generate approximately 120 000m^3 of tailings over a one year period. The tailings materials will be placed within the existing TSF which will be lifted by 2m. Manuka Resources has engaged AECOM to produce final designs for the Stage 2 lift to 264.2m AHD. This should provide sufficient storage capacity for the remaining Mt Boppy tails as well as the silver stockpiles at the Mine.

Final wall lift designs and construction drawings were issued during the reporting period. Preparatory works have commenced during this reporting period namely the construction of the working platform around the perimeter of the TSF.

A future capping design for the TSF will be further progressed in late 2020. The design outcomes will be dependent on future mining of new pits on the Manuka mining lease, which are yet to be determined and which fall outside of the current MOP term.

A comprehensive topsoil survey was undertaken in late 2017 and of the 11 identified topsoil piles a total volume of 253,003 M^3 has been calculated. This data will assist in informing the design and development of the TSF capping design, as well as other remediation and rehabilitation planning for the Mine site. Details of topsoil stockpiles are shown in **Figure 7** towards the end of this document, with **Table 4** below a summary of the current stockpile estimates.

Table 4: **Soil and Clay stockpile inventory**

Stockpile No	**Material**	**Area (ha)**	**Stockpile Volume (estimate)**
TSP01	Topsoil	3.5	45,690
TSP02	Topsoil	3.6	58,435
TSP03	Topsoil	5.7	5,483
TSP04	Topsoil	1.4	20,561
TSP05	Topsoil	0.3	1,799
TSP06	Topsoil	0.7	8,272
TSP07	Topsoil	1.5	16,392
TSP08	Topsoil	2.0	35,931
TSP09	Topsoil	1.0	21,585
TSP10	Topsoil	4.3	32,688
TSP11	Topsoil	0.5	6,171
Total Topsoil		**253,007**	
CSP01	Clay	0.4	6,693
CSP02	Clay	2.2	147,245
CSP03	Clay	0.7	29,575
CSP04	Clay	0.9	35,944
CSP05	Clay	0.3	5,600
CSP06	Clay	0.6	9,222
10	Clay	0.2	4,742
11	Clay	0.9	33,445
Total Clay		**272,466**	

3.3 METEOROLOGICAL MONITORING

Environmental Management

A weather station is located adjacent to the mine office which performs continuous monitoring of meteorological data and during normal operations is connected to the site servers for automated data transfer. This station was dormant during the non-operational phase of the Mine site, but has now been re-established during the reporting period. This system will remain to be fully operational as we recommence operations in the 2020 reporting period.

Environmental Performance

Daily rainfall observations for the 2019-2020 reporting period recorded only one day of heavy rainfall (>25mm/24hr) in the month of April 2019 and a total annual rainfall of 229.4mm. This is well below the mean rainfall for the Cobar district of 388.8 mm reported by the Bureau of Meteorology (www.bom.gov.au). There were only a total of 20 days throughout the whole year where rainfall that fell was greater than 1mm. Most events that occurred throughout the year where minimal to non-existent, with high temperatures and winds generally evaporating any moisture before it could hit the ground. Based on both local (Nymagee) and BOM long term records, 2019 has been one of the driest years on record.

Further Improvements

All efforts will be focused on maximising the capture of any rainfall for use on site during 2020. The ongoing drought continues to have a significant impact on land management and water availability across the region.

3.4 AIR POLLUTION

Environmental Management and Performance

Due to the prevailing semi-arid environment, dust levels may be elevated during certain climatic conditions. The main sources of dust associated with activities are wind erosion of exposed surfaces including the ROM pad and ore stockpiles, as well as active rehabilitation areas not yet fully rehabilitated.

Monitoring of dust deposition levels is no longer a requirement of EPL 20020 due to the cessation of mining in early 2015. As set out in the Manuka Air Quality Management Plan, the target limit for dust deposition is 2 g/m^2/month above ambient levels with a maximum of 4 g/m^2/month. **Table 5** provides monthly dust monitoring data collected during operational periods between January 2014 and January 2017 which is recorded for future reference once onsite mining operations resume.

Table 5: Monthly Depositional Dust Results for Manuka and Wirlong Homesteads

	Ash Content (g/m^2/month)		Total Insoluble Matter (g/m^2/month)	
Month	**Manuka**	**Wirlong**	**Manuka**	**Wirlong**
Jan-14 to Feb-15	Results not located.			
Mar-15	0.6	0.6	1.0	1.1
Apr-15	1.3	0.9	1.3	1.2
May-15	0.4	2.5	0.9	7.0
Jun-15	0.3	0.4	0.6	0.6
Jul-15	0.8	0.1	1.2	0.4
Aug-15	0.7	0.2	1.1	0.6
Sep-15	0.8	0.4	0.8	0.7
Oct-15	1.3	0.7	2.2	1.3
Nov-15	2.0	0.5	2.2	1.1
Dec-15	1.1	0.5	1.8	1.0
Jan-16	1.2	0.6	1.6	1.0
Feb-16	1.4	0.6	1.4	0.9
Mar-16	1.2	0.5	1.3	0.8
Apr-16	0.7	0.3	1.0	0.9
May-16	0.6	0.4	0.9	0.6
Jun-16	0.7	0.4	0.7	0.6
Jul-16 to Oct-16	NS	NS	0.1	NS
Nov-16 to Jan-17	NS	NS	0.6	0.8
May-18	NS	NS	1.6	0.9
No. Samples	16	16	19	19
Average	0.9	0.6	1.1	1.2
Min	0.3	0.1	0.1	0.4
Max	2.0	2.5	2.2	7.0

NS = Not sampled / not analysed.

Reportable Incidents

There were no reportable incidents relating to air pollution during the reporting period.

Further Improvements

Regular dust suppression will be conducted on areas cleared of vegetation, soil stockpile areas, haul / access roads and active areas of the Mining Infrastructure Area using a water truck. A water truck will be located on site permanently for this purpose. The Mine Air Quality Management Plan presents further controls, safeguards and management measures implemented at the Mine to reduce dust levels for the following activities.

• Internal Transportation of Ore and Waste Rock.

– All haul road edges will be clearly defined to control their locations, especially when crossing large areas of non-descript disturbance.

– All roads and trafficked areas will be regularly watered to minimise the generation of dust.

– All obsolete roads will be closed, ripped allowed to revegetate.

– The largest practical truck size will be operated to reduce the number of movements necessary to transport the ore. The shortest possible route will be used.

• Processing.

– The drop heights between front-end loader and/or excavator buckets and ROM Stockpile or ROM bin will be minimised.

– Water sprays will be used at key transfer points within the processing plant.

• Progressive Rehabilitation.

– Stabilisation of all areas disturbed during site establishment and construction phase including water management structures, any temporary access roads, landscaped areas, banks and bunds.

– Progressive shaping, soil replacement and revegetation (to either native vegetation or pasture) of the waste dumps.

– Seeding of the soil stockpiles retained for periods greater than 3 months which have not naturally established ground cover with pasture species to minimise wind erosion.

• Contingency Management.

In the event that strong winds are blowing dust towards surrounding residences and dust suppression appears visually ineffective, the General Manager will order any dust-generating activity(ies) to cease.

3.5 EROSION, SEDIMENTATION AND SURFACE WATER CONTROL

Environmental Management

The Manuka Mine site is a zero-discharge site, meaning that water captured in sediment basins is either removed by natural evaporation or pumped to an alternate water storage, if required, to maintain a 50% freeboard. Due to the extreme high evaporation rates and below average rainfall in western NSW, water levels in the sediment basins have been naturally maintained by evaporation during the reporting period.

Environmental Performance

Extensive works were carried out following the cessation of operations by Black Oak Minerals, including clean out and repair of all site drains, rock check dams, haul road bunding and ROM pad bunding. Monitoring of surface water structures occurs monthly, with a more detailed erosion and sedimentation inspection occurring quarterly to identify areas requiring maintenance.

Erosion has been noted on the southeast corner of the TSF. This has not significantly changed over the reporting period due to the limited rainfall. Now that there are personnel and earthmoving equipment mobilised on the site, this problematic area will be reprofiled and stabilised in the first quarter of 2020. A surveillance and monitoring program will be implemented to ensure early identification and rectification of erosion on the TSF batters.

Figure 6 below shows the areas of focus for battering and remediation over the 2020 – 2021 MOP period. Area A includes this TSF erosion rectification works that will take place in this reporting period.

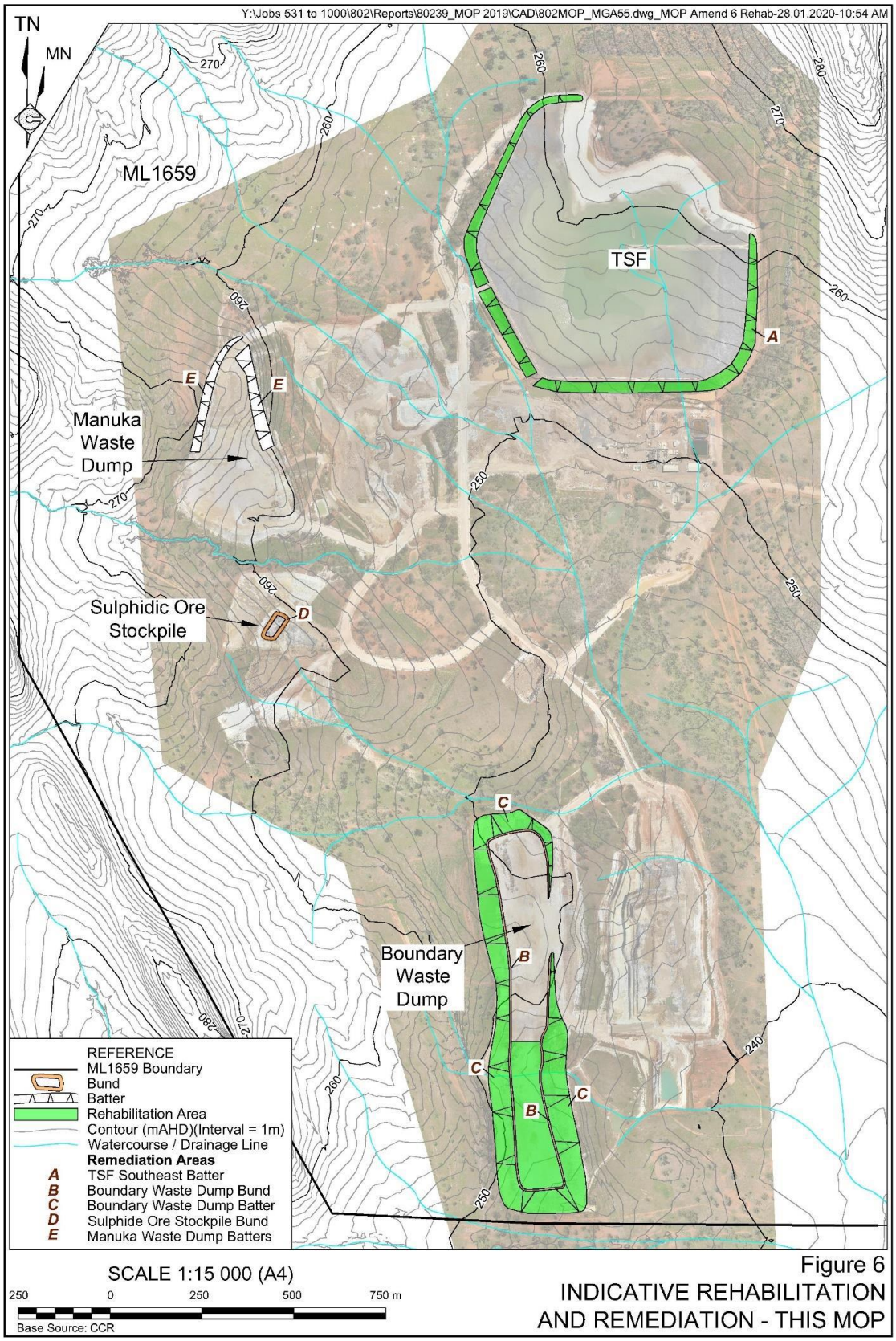


Figure 6: Rehabilitation and Remediation focus areas for 2020 – 2021 MOP period

Reportable Incidents

There were no reportable incidents relating to erosion or sedimentation during the reporting period.

Further Improvements

There are a number of smaller clean water diversion drainage bund breaks on some of the roadways around the site and these will be attended to in the new reporting period. The site Stormwater Management Scheme and Erosion and Sediment Control Plan documents will also be reviewed and updated in 2020, with any changes to site practices to be communicated to all workers, including contractors.

3.6 GROUNDWATER POLLUTION

Environmental Management

The Mine is not located in an area with a significant groundwater resource, with water contained mainly within fracture zones. The extraction of groundwater will have no effect on any regional aquifer and there will be no effect on other licensed groundwater users (the nearest licensed bore to the site is located approximately 1.3km away and is owned by the Company).

Furthermore, there are no groundwater dependent ecosystems (GDEs) in proximity to the Mine Site. Following completion of groundwater extraction, local groundwater levels are expected to return to existing levels. Impacts on the local and regional groundwater regime are therefore expected to be minimal.

Environmental Performance

The Mine has not been operational since November 2015 and no works conducted onsite other than remediation of surface water management structures. Occasional water extraction from the bore fields has occurred for supply of camp water only.

Tables 6 and **7** contain standing water level and pH data respectively, collected during the reporting period. Several bores remained dry throughout the reporting period and have been removed from the tables for simplicity.

Table 6: Standing Water Level Monitoring Data for Groundwater Monitoring Piezometers.

Site ID	Jan-19	Feb-19	Mar-19	Apr-19	Jul-19	Sep-19	Nov-19	Dec-19
WGW1B	79.9	79.91	79.73	79.74	79.74	79.81	80.2	80.3
WGW3	53.7	53.7	53.65	53.72	-	53.9	54.7	54.8
WGW2	50.9	50.9	50.69	50.73	-	51.1	51.1	50.9
WGW12	2.6	2.6	2.45	2.94	2.71	-	4.1	4.4

Standing water levels remained consistent throughout the year. WGW9 remains obstructed and attempts to clear the blockage using available equipment is ongoing. If not rectified prior, this will require clearing/re-drilling once the site recommences operations.

Table 7: pH Monitoring Results for Groundwater Piezometers.

Site ID	Sep-19	Oct-19	Nov-19	Dec-19
WGW3	-	7.44	6.7	6.5
WGW2	6.5	7.5	6.64	6.52
WGW12	-	-	7.86	7.7

Reportable Incidents

There were no reportable incidents during the reporting period.

Further Improvements

Ongoing groundwater quality monitoring will continue in accordance with the Water Management Plan.

3.7 CONTAMINATED OR POLLUTED LAND

Environmental Management

The operating objective of the mine is to avoid contamination or pollution of air, land or water resources. To assist in meeting this objective, the following management plans have been prepared:

- Water Management Plan (which incorporates a Stormwater Management Scheme and Erosion and Sediment Control Plan).
- Cyanide Management Plan.
- Waste Management Plan.

Inspections are regularly undertaken in accordance with and additional to the procedures contained in these plans to identify sources of potential contamination/pollution and/or action the remediation of contamination/pollution if identified. With the recommencement of operations during this reporting period, all management plans will be reviewed for suitability against planned activities and updated as required.

Environmental Performance

No contaminated land is present within the Mine Site. During operations, any hydrocarbon spills would be immediately cleaned up and any contaminated material placed within the TSF for encapsulation.

Monthly site inspections have been undertaken during the reporting period in order to identify and rectify issues as they occur or as equipment is available onsite. Aspects of operational planning are also undertaken in preparation for the site recommencing activity.

Reportable Incidents

There were no reportable incidents relating to contaminated or polluted land during the reporting period.

Further Improvements

No further improvements are proposed at this time.

3.8 THREATENED FLORA AND FAUNA

Environmental Management

Activities to be undertaken during this reporting period did not result in the removal of any additional vegetation. Based on previous flora and fauna survey (OzArk, 2010), no flora species of conservation significance will be disturbed by the approved disturbance. Furthermore, it was assessed that the development is unlikely to cause local extinction or any significant impact to any listed fauna species.

The above notwithstanding, the following general flora and fauna management measures are implemented.

- Should clearing of vegetation be required, e.g. for safety reasons or associated with the development of the Belah and Bimble Pits, pre-clearance surveys to detect fauna roosting in any tree hollows will be undertaken (notably, the majority of trees within ML 1659 do not possess suitable hollows for dependant species).

- Implementation of pest management strategies to reduce the number of feral species and weeds.

Environmental Performance

As there was no vegetation clearing or soil stripping activities during the reporting period, management of flora and fauna related primarily to the control of wildlife accessing the mine. The removal of feral goats and maintenance of boundary fences continues to be undertaken by the former station owner who maintains pastoral access rights.

Reportable Incidents

There were no reportable incidents during the reporting period relating to flora or fauna.

Further Improvements

No further improvements are proposed at this time.

3.9 WEEDS

Environmental Management

In accordance with the MOP, appropriate noxious weed control methods and programs will be undertaken if necessary, in consultation with the Cobar Shire Council (CSC) noxious weeds officer. No noxious weeds have been identified to date that have warranted any control activities.

Environmental Performance

Groundcover levels remain low due to another hot dry summer period and minimal rainfall over the preceding 12 months.

Strategies to prevent and introduction or spread of weeds during all remediation and rehabilitation activities planned throughout the reporting period include:

- Inspection of source soil stockpiles and if dominated by weed species, a herbicide targeting the particular weed species will be applied prior to respreading.

• Regular inspection of rehabilitation and remediation sites. On initial establishment of vegetation, weed species coverage of 50% (no noxious weed species) will be acceptable as the cover is important in stabilising the soil. After 6 months, the acceptable weed species coverage will be 20% (and no noxious weed species). If the threshold coverage percentage is exceeded, targeted weed spraying will be commissioned.

• If weed species coverage cannot be reduced to the target threshold, additional advice will be sought from the Local Land Service or Council weeds officer.

Reportable Incidents

Over the course of the reporting period there were no reportable incidents relating to weeds.

Further Improvements

No further improvements to the Weed Management Policy contained in the current MOP is required at this time.

3.10 BLASTING

Potential environmental impacts resulting from air blast or vibration (caused by blasting activities) were assessed not applicable unless blasting operations occurred. As there were no blasting activities during the previous reporting period (or forecast for the next reporting period) no further assessment of this subject is given in this report.

3.11 OPERATIONAL NOISE

No operational noise was generated during the reporting period as the recommencement of mining operations has been deferred. In the absence of heavy plant, equipment or processing plant operations, there were no noise mitigation or monitoring works required during the reporting period.

3.12 VISUAL, STRAY LIGHT

Potential impacts to visual amenity or community impact by stray light were assessed as presenting a low risk due to the mine's remote location, absence of processing operations and no record of community complaint on this subject by nearby landholders. No further assessment of this subject is given in this report.

3.13 ABORIGINAL HERITAGE

As there were no mining or construction activities conducted onsite during the reporting period, the likelihood of disturbance of natural or Aboriginal heritage items is considered negligible.

3.14 NATURAL AND NON-ABORIGINAL HERITAGE

No items or area of natural or non-Aboriginal heritage significance occur within ML 1659.

Should any site or artefact be uncovered during the planned activities, work in the area surrounding the relic would cease and the OEH (now Biodiversity Conservation Division) and the Local Aboriginal Land Council would be informed of the find. Work would not recommence in the area immediately surrounding the find until the area has been inspected and permission has been given to proceed.

3.15 BUSHFIRE

Environmental Management

The clearing associated with the Mine Site, access to water and generally open vegetative structure of the Mine and surrounds, result in minimal bushfire risk. There is a general risk for the locality, however, which could impact on rehabilitation in the future.

Environmental Performance

While the mining lease is not located within the bushfire prone area identified on the Cobar LGA land map, the company has implemented a number of management controls to further prevent the likelihood and impact of bushfire.

- An asset protection zone of 10m is maintained between offices, workshops and fixed plant.
- All water trucks on-site are required to be fitted with fire nozzles for use in a fire situation.
- Fire extinguishers are located at numerous locations around the camp, offices and work areas, as well as a fixed fire hose system at the processing plant.
- The mine access road is regularly maintained to ensure safe access and egress from the mine in the event that an evacuation is called.
- Roads around the mining lease, camp and homestead are also maintained which provide fire breaks around infrastructure.
- Fire safety procedures and use of on-site fire equipment is covered in site and work area inductions.
- Emergency and evacuation management procedures have been established and included in induction procedures for the mine workforce. These procedures require that in the event of a local bushfire event:
    - All personnel are required to assemble at a designated Emergency Assembly Area (the carpark of the processing plant and office area).
    - A head count will be undertaken to confirm all site personnel and visitors are accounted for.
    - Instructions on specific actions to be followed, i.e. site protection or evacuation, will be provided based on advice from the NSW RFS.

All management controls were adhered to throughout the course of the reporting period.

Reportable Incidents

There were no bushfire-related incidents during the reporting period.

Further Improvements

Ongoing refresher training, via toolbox talks prior to the hot dry summer period, have been conducted by Manuka Resources to ensure all personnel are prepared and familiar with the emergency procedures in the event of a bushfire.

3.16 HYDROCARBON CONTAMINATION

Environmental Management

All hazardous materials and/or dangerous goods to be used, stored or transferred on the Mine Site are managed in accordance with the relevant Australian Standard and/or guidelines.

Diesel is now delivered on a fortnightly basis as operations ramp up by a bulk transporter who adopts industry best practices to prevent any spillage during the transfer of diesel from the road tanker to the onsite containerised diesel tank. Diesel and oils are stored according to Australian Standard 1940-1993. This includes provisions for fire prevention, barriers and bunds, ventilation considerations and appropriate signage. Transfer is undertaken by appropriately trained site personnel. Spill kits are available at various locations around the site and staff and contractors are trained in the use of such kits during site inductions.

Environmental Performance

There were several deliveries of diesel within the reporting period. Diesel is stored within three 70,000L self-bunded container tanks adjacent to the site office. Access to diesel is restricted to site employees who have undertaken the mine induction and have suitable experience using the pumps. The diesel bund is regularly inspected, and any dirt or debris build-up removed, to maintain effective capacity.

Reportable Incidents

No reportable incident relating to hydrocarbon spills occurred during the reporting period.

Further Improvements

No further improvements to hydrocarbon management are proposed at this time.

3.17 PUBLIC SAFETY

Access to the Manuka Silver Mine is controlled by residential caretakers (two on rotation) and restricted by appropriate fencing, gates and signage. Fencing is inspected on a regular basis. Considering the isolated nature of the site and restricted access, there is minimal risk to public safety.

All employees and visitors to site are required to complete an induction prior to entry, and visitors must always be accompanied by a company representative for both safety and security reasons.

There were no reportable incidents during the reporting period relating to public safety, and no further improvements to existing access arrangements.

3.18 OTHER ISSUES AND RISKS

Discussion of the following environmental issues identified by the AEMR guidelines has not been included as these related to either coal and/or underground mining operations, and therefore not relevant.

- Spontaneous Combustion - No material from either ore source is prone to spontaneous combustion and therefore, no specific management measures are necessary.

- Mine Subsidence - Whilst exploratory drilling has occurred within the Mine Site, no underground mining of any kind has been undertaken nor is any anticipated as future mine plans treat Manuka as open-pits. Furthermore, with no underground mining, mine subsidence management measures are not required.

- Methane Drainage / Ventilation – No risk of Methane drainage; no specific management measures are necessary.

4. COMMUNITY RELATIONS

4.1 ENVIRONMENTAL COMPLAINTS

No complaints relating to environmental emissions or performance were received during the reporting period.

4.2 COMMUNITY LIAISON

Manuka Resources has established and publicised a Community Complaints Line, however there were no complaints received from the community or surrounding landholders during the 2019-2020 reporting period.

Site staff continue to maintain a good working relationship with the owners of ‘Manuka Station’, ‘Wirlong Station’ and the residents along shire road 13, being the nearest parties to the mine.

5. REHABILITATION

The status of existing disturbance and rehabilitation at the Mine as at the end of the 2019 reporting period is described as follows and shown in **Figure 2.**

• Manuka and Boundary Pits.

Both pits have been extracted of ore from previous mining operations within the Mine Site, with Boundary Pit ore exhausted. Partial backfilling of the Boundary Pit has been undertaken. Final benching and pit stabilisation activities completed. Perimeter bunds are in place.

• Boundary Waste Dump.

Rehabilitation Phase 2 has been partially completed with sections of the waste dump shaped to a final landform with 18° slopes. Finalisation of batter shaping and application of growth medium and revegetation remains to be completed.

• Manuka Waste Dump.

Incomplete. While no further waste rock is to be placed within the approved dump footprint, final landform creation remains to be completed while the exact volume of material to be used in the construction of the TSF embankment lift and capping material is confirmed.

• Tailings Storage Facility.

The outer walls of the Stage 1B lift have been formed, spread with soil and revegetated. Erosion on the outer walls will be remediated during the reporting period. The TSF remains active and therefore uncapped. Surface drainage is prevented from inflowing by constructed water diversion drains up-slope of the TSF.

• ROM pad and stockpiles.

Active areas. Previously extracted ore from Boundary and Manuka Pits is currently stockpiled with appropriate drainage controls installed. Some maintenance and upgrade works are planned to be undertaken during the 2020 reporting period.

• Mine Infrastructure Area / Processing Plant.

Active area. No specific rehabilitation to date.

• Soil stockpiles.

All soil stockpiles have been shaped with covering vegetation. Some stockpiles will be removed and spread over areas to be rehabilitated within the reporting period.

• Hard rock stockpiles.

Active areas. Material will be used for off-lease road upgrade and maintenance works or in the construction of the TSF embankment lift.

• Low Grade Ore and Mineralised Waste Stockpiles.

Active areas. Materials not processed through the on-site processing plant will be placed within the TSF.

5.1 BUILDINGS

No permanent buildings were renovated or removed during the reporting period.

There are no plans for any decommissioning or demolition activities during the 2020 reporting period, with all future plans to be subject to a review of the results of the past and proposed future exploration drilling results. If there is to be possible future extensions to the principal pits (Boundary and Manuka) and/or development and mining of the supplementary pits (Bimble and Belah), no significant changes will take place until that determination is made. However, removal of old redundant plant and equipment from the Mine Site, as well as rationalisation of surface storage areas for equipment, will be undertaken as these are identified.

During the period August 2019 to January 2020 new fencing was erected on Manuka mining lease to repair/replace exiting fencing which was in poor condition and allowing animals to stray onto the ML boundary. Areas which were repaired are shown in **Figures 7a - d** below. This area comprises the road between the camp and the plant and the eastern and western boundaries of the biodiversity offset area to the NE of the pastoral lease.

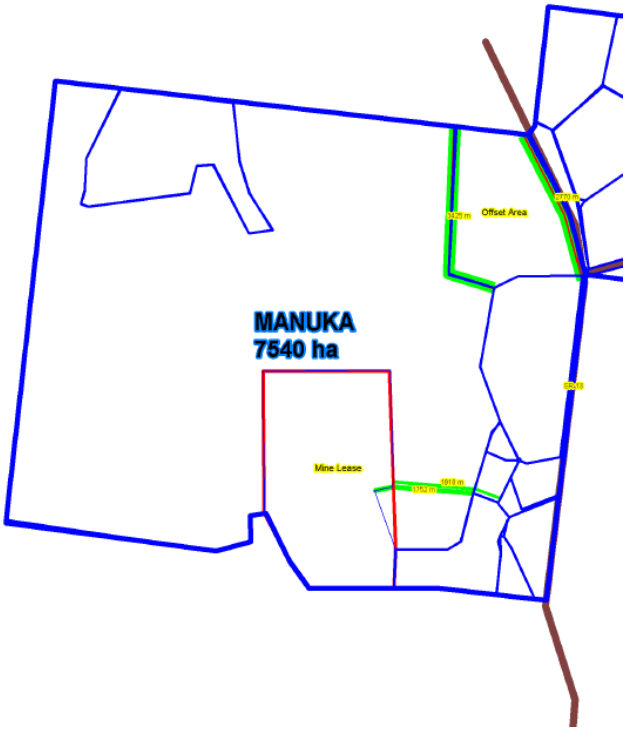


Figure 7a **Location of new fencing is highlighted in GREEN**.

Figure 7b **Road between camp and plant**

Figure 7c **Manuka Rd leaving site**

Figure 7d **Biodiversity offset boundaries**

5.2 REHABILITATION OF DISTURBED LAND

During the term of its ownership, Manuka Resources has completed broad-scale clean-up and remediation of the site to return the mine to an appropriate functional state in compliance with legislative and best practice standards.

Continued extended dry conditions have caused a noticeable reduction in groundcover species across the mining lease and throughout the district. Due to these conditions, seeding trials are unlikely to be effective and rehabilitation efforts during the reporting period has focused on reducing grazing pressure through the removal of feral goats.

Table 8 provides a summary of the rehabilitation efforts at the Manuka Mine. No final rehabilitation works were conducted in the reporting period.

Table 8: **Rehabilitation Summary**

	Area Affected (ha)		
A: MINE LEASE(S) AREA	**Total Area, start of Reporting Period**	**Total Area, end of Reporting Period**	**Area Estimated end of next Reporting Period**
A1 Mine lease(s) area	923.23	923.23	923.23
B: DISTURBED AREAS			
B1: Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	45.1	45.1	45.1
B2: Active mining area (excluding items B3-5 below)	42.2	42.2	37.7
B3: Waste emplacements (active, unshaped, in or out of pit)	36	36	36
B4: Tailings emplacements (active, unshaped, uncapped)	54.7	54.7	52
B5: Shaped waste emplacement (awaits final vegetation)	0	0	0
Previous Mining Activities	35.3	35.3	35.3
TOTAL ALL DISTURBED AREAS	**213.3**	**213.3**	**206.1**
C: REHABILITATION			
C1: Total rehabilitated area (except for maintenance)	5.5	5.5	12.7
D: REHABILITATION ON SLOPES			
D1: 10 to 18 degrees	5.5	5.5	12.7
D2: Greater than 18 degrees	0	0	0
D3: Less than 10 degrees	0	0	0
E1: Pasture and grasses	0	0	0
E2: Native forests/ecosystems	0	0	0
E3: Plantations and crops	0	0	0
E4: Other (include non-vegetative outcomes)	0	0	0

Table 8 also provides a summary of the planned disturbance and rehabilitation over the next reporting period whilst **Figure 6** presents the location and indicative areas of remediation and rehabilitation at the completion of the current MOP term.

The following sub-sections describe the rehabilitation activities proposed to be implemented during the 2020 reporting period based on the areas referred to in the table above.

- Infrastructure Area

  The Infrastructure Area will remain as an active operational area throughout the reporting period.

- Active Mining Area

  Active Mining Areas will remain throughout the reporting period. There will be ongoing works to maintain all sediment basins in accordance with the Mine Stormwater Management Scheme to ensure that they retain sufficient capacity and are appropriately managed to avoid discharges to surface water or that discharges meet the applicable guidelines and approval requirements.

Erosion controls and remedial works will be undertaken as necessary in response to excessive erosion or poor performance. The northeast batter and southern side of the Boundary Waste Dump will be reprofiled and stabilised during the 2020 reporting period.

- Tailings Storage Facility

  The Tailings Storage Facility will remain as an active operational area throughout the reporting period, given the potential for continued mining and processing at the Mine. As each lift of the TSF is completed however, the following rehabilitation activities will be completed.

  - The outer TSF batter will be profiled to provide a slope of no greater than 18° (~3H:1V).
  - Soil stockpiled adjacent to the TSF will be applied, to create a layer of approximately 150mm thick.
  - The soil will be immediately seeded with locally occurring grass species.
  - Erosion controls and remedial works will be undertaken as necessary. As noted in Section 3.5, erosion has been noted on the southeast batter of the TSF. This batter will be reprofiled and stabilised in the first quarter of 2020. During the 2020 and 2021 period, erosion control and remedial work is planned to be completed on the batters of the Stage 1B lift as part of the works for the Stage 2 lift.

- Waste Emplacement Areas

  The Waste Emplacement Areas will remain as an active operational area throughout the reporting period. The Manuka waste dump will be left open as it may be used as a source of clay for TSF capping and/or material for final landform creation and rehabilitation.

- Shaped waste emplacement (Stockpiled Material)

  Hard rock, low grade ore and mineralised waste stockpiles may either be utilised for construction purposes or processed through the processing plant. Clay will be used for the TSF lifts and final capping will be retained.

  Remediation of the bund surrounding the sulphidic ore stockpile will be completed to prevent erosion and runoff from the stockpile.
  The remaining landform will be profiled and scarified to integrate with the surrounding topography. Where self-revegetation does not occur, soil will be respread to achieve a layer of approximately 150mm. This will be immediately sown with tree, shrub and grass species. This work will take place over the 2020 – 2021 reporting periods.

- Previous Mining Activities (Open Cut Voids)

  No further mining is planned during the reporting period. The Company is investigating the future potential of the site, and therefore no rehabilitation or remediation works are planned in these areas over the coming reporting period.

5.3 REHABILITATION TRIALS AND RESEARCH

Given the status of operations at the Mine, no rehabilitation trials or research were undertaken during the reporting period.

All rehabilitation activities planned for the next reporting period will be undertaken using accepted practices and seed species in consultation with external expertise such as Cobar Shire Council, Local Land Services, appropriate third-party consultants and experience gained from rehabilitation efforts practiced by other mining operators in the district.

While the conditions have not been ideal for establishing any new rehabilitation trials over the past 3 years with the ongoing drought, and lack of onsite presence, Manuka Resources does reference rehabilitation trials undertaken at the associated Mt Boppy Gold Mine, which also occurs within the Cobar Peneplain Bioregion. The most recent trial work occurred between 2007 and 2015 and covered an area of 1ha and included:

- four photo monitoring points; and
- seven transect lines.

Monitoring was undertaken on an annual basis and included measurement of number of seedlings, assessment of grazing pressure, presence of weed species and groundcover (e.g. bare soil, vegetation, litter, rock etc.). The results of this monitoring have been presented within the respective AEMRs.

The Company will maintain comprehensive records of the activities undertaken, including but not limited to, soil depth on application, species mix of seed applied, application of accumulated vegetation from previous stockpiles, seasonal factors which will allow an analysis of the relative success of rehabilitation. By analysing the data in this way, areas of less successful rehabilitation may be remediated with a better understanding as to what is more successful in this setting. Furthermore, future rehabilitation of the supplementary pits and waste dumps, should they proceed, could be planned around what has been most successful at the Mine to date.

5.4 FURTHER DEVELOPMENT OF THE FINAL REHABILITATION PLAN

No further development of the final rehabilitation plan was undertaken during the reporting period.

6. ACTIVITIES FOR NEXT REPORTING PERIOD

6.1 SUMMARY

Site commenced final refurbishments of the processing plant and initial earthworks on the TSF in late 2019. These are expected to conclude in March 2020 when low grade My Boppy gold ore will then be fed into the plant for recommissioning.

A new MOP was lodged in January 2020 to cover a phase of mineral processing only at the Manuka site. A subsequent MOP will be drafted to include actual mining activities on the Manuka mining lease which will depend on the infill drilling program stated for 2020.

Apart from the above-mentioned infill drill program on ML 1659, Manuka Resources intends to conduct limited exploration activity on the EL's. These activities will comprise geophysics, VTEM surveys and soil sampling. ML1659 hosts significant sulphide mineralisation below the known inferred resource. A program of deeper drilling is expected to be conducted during 2020 to test the extensions of these sulphides which are known to host base metal mineralisation.

Below summarises the activities planned for the next reporting period:

- Operation of the Processing Plant, and associated ROM Pad, water storages and ancillary structures, capable of crushing, screening and milling up to 1Mtpa of ore.

- Processing of ore (350,000 tonnes) received from Mt Boppy Mine to produce gold doré. Initially doré will be produced off-site with on-site production likely to commence 2nd quarter 2020.

- Operation of and further development of the above ground TSF, capable of containing up to 1.5Mt of tailings.

- Progressive rehabilitation of the walls of the TSF, including repair of erosion on the southeast corner of the TSF wall.

- Management and remediation work on the batters and bund on the southern side of and northwest corner of the Boundary waste dump.

- Removal of redundant plant and equipment from the Mine Site and rationalisation of surface storage areas for equipment.

- Rural fences surrounding the ML will be repaired where breaks have occurred to prevent entry of fauna onto the site and the TSF.

Mining will not occur during the term of this MOP as currently economic recoverable ore from the principal pits (Boundary and Manuka) has already been mined and stockpiled. Mining will be addressed in a subsequent future MOP once infill drilling on the resources is completed.

Some minor works have already commenced in the first part of 2020 (outside of this reporting period), and progress on these is shown in **figure 10** below.

6.2 CONSTRUCTION

There is no new construction planned for the next reporting period; comprehensive refurbishment of the process plant is expected to be complete by March 2020.

6.3 MINING

There will not be any mining on ML 1659 during the current reporting period. Mining will only recommence once the inferred resource has been upgraded to measured and indicated status and a robust mining schedule can be developed. This is expected to occur in 2021 and a new MOP will then be drafted.

6.4 REHABILITATION

Improving the environmental management of the site has been a key focus of Manuka Resources following the incidents and mismanagement which occurred under the previous operators.

Rehabilitation works have been incorporated into mine operations planning, to recommence in the current period as site activities ramp up.

Figure 8: **Topsoil Stockpiles**

Figure 9a: **Mine Stockpiles**

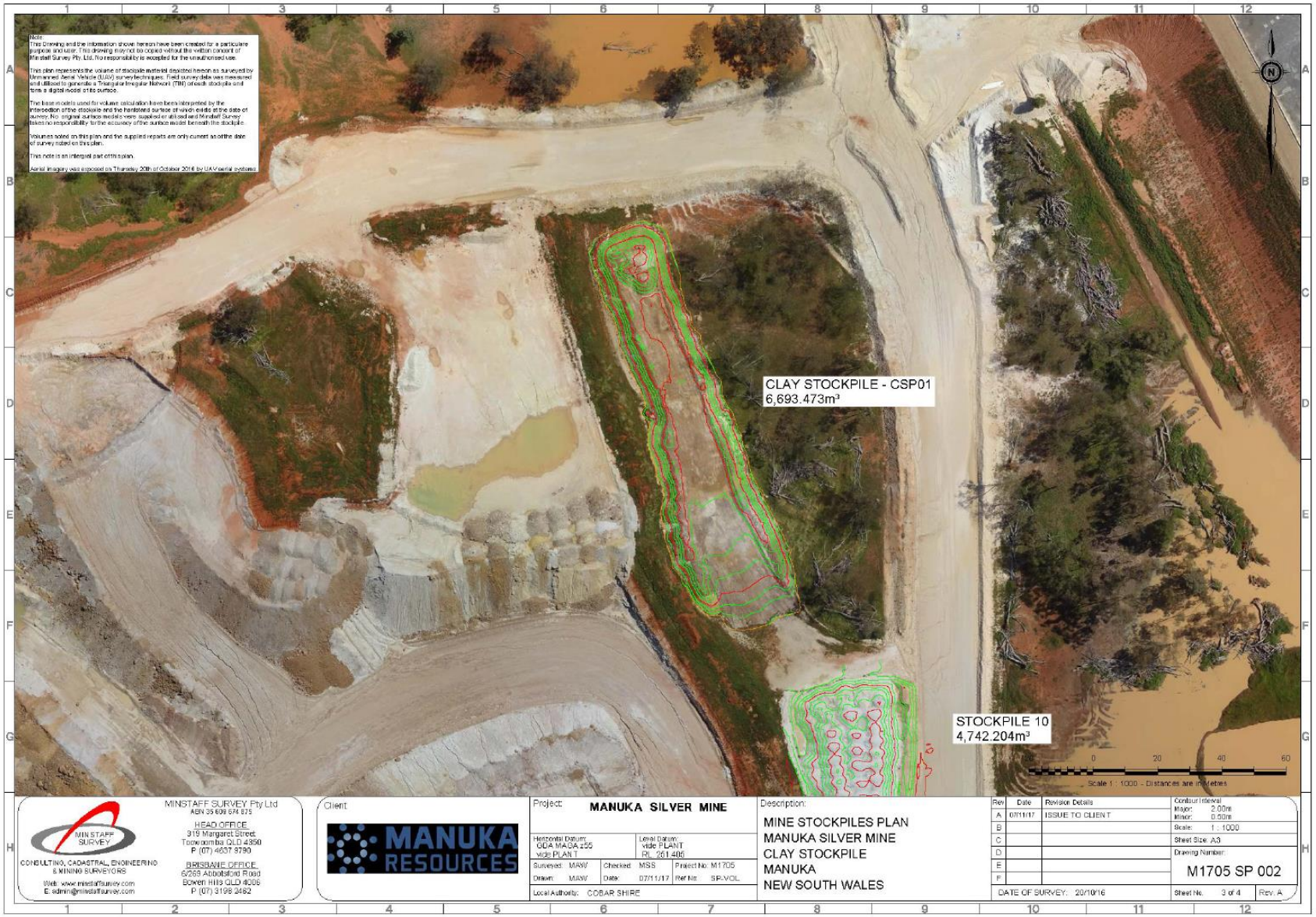


Figure 9b**. Mine Stockpiles**

Figure 9c. **Mine Stockpiles**

Figure 9d. **Mine Stockpiles**

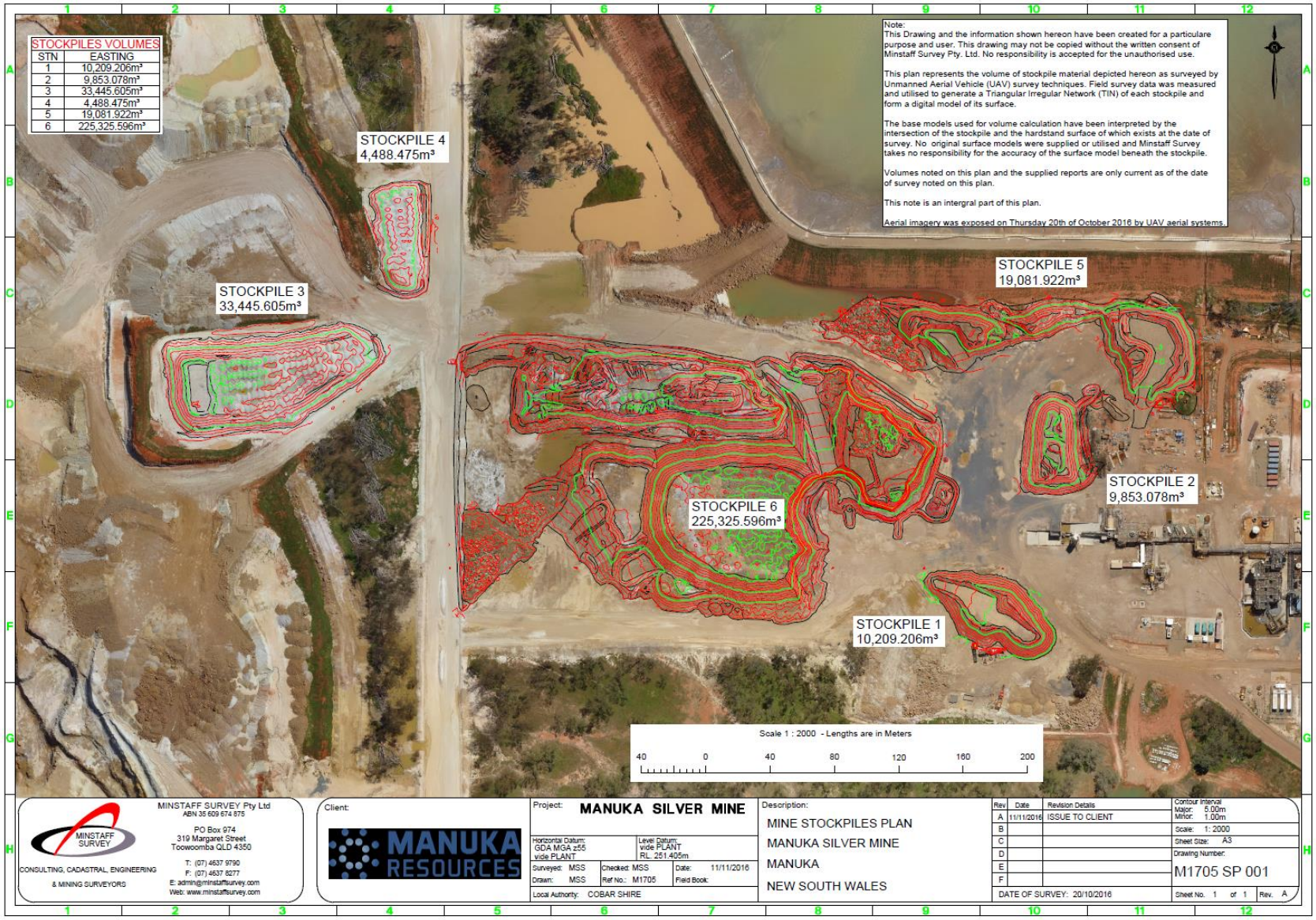


Figure 10. **Minor improvement Works in Progress for 2020 reporting period**

Figures 10 a) and b) **TSF run off drain repairs** and c) **Stormwater drain re-establishment around Plant**

Figures 10 d) and e) **TSF windrow repairs**

Figures 10 f) g) and h) **TSF piezometer repairs**