APPENDIX J1

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Mn48 Mining Right NC30/5/1/2/2/10028MR

Mn48 (Pty) Ltd

CALCULATION OF THE LOM FINANCIAL CLOSURE LIABILITY ASSOCIATED WITH THE MN48 MINING RIGHT NC30/5/1/2/2/10028MR

1. INTRODUCTION

SLR Consulting (South Africa) (Pty) Ltd (SLR) have been requested to update the previous life of mine (LOM) financial closure liability associated with the Lehating Manganese Mine (SLR, 2013). Lehating Manganese Mine has since combined with the Khwara Manganese Mine, now referred to as the Mn48Mining Right.

This update to the LOM financial closure liability has been calculated in accordance with the draft 2019 Financial Provisioing Regulations (Government Gazette 42464, 2019) since these calculations are significantly more accurate than the older DMR Guideline methodology (DMR, 2005). Furthermore, the draft 2019 Financial Provisioning Regulations are anticipated to be applicable for the Mn48 Project as from 19 June 2021 (and the old DMR Guideline methodology no longer accepted).

1.1 BACKGROUND

Mn48 (Pty) Ltd, registration number 2006/032350/07 (previously known as Lehating Mining (Pty) Ltd) ("Mn48" or "Applicant") is the holder of a mining right for manganese and iron ore in respect of a defined portion of Portion 1 of the farm Lehating 741, Kuruman RD, Northern Cape Province, processed under the DMRE's reference number NC30/5/1/2/2/10028MR and registered in the Mineral and Petroleum Titles Registration Office under MPT No. 59/2105 ('Mn48 Mining Right") and wishes to incorporate into the Mn48 Mining Right, the properties and minerals included in the mining right application lodged by Khwara Manganese (Pty) Ltd, registration number 2014/182204/07 ("Khwara"), being manganese and iron ore in respect of Portion 2 of the farm Wessels 227, and manganese ore in respect of the Remaining Extent, Portion 3 (a Portion of Portion1) and Portion 4 (a Portion of Portion 2) of the farm Dibiaghomo 226, all in the Kuruman RD, Northern Cape Province ("Khwara Application Area"), which application is being processed under DMRE reference number NC30/1/2/2/10122MR.

The Khwara underground resource will be accessed via/through the approved surface infrastructure on Lehating Farm. In this regard, no surface infrastructure will be established as part of the Khwara Mining Right area.

2. BASIS OF THE LOM CLOSURE LIABILTY ESTIMATE

2.1 CLOSURE OBJECTIVE, PRINCIPLES AND OUTCOMES

At this stage, the main closure objective at LOM will be to remove as much infrastructure as possible and create a post-closure sustainable land use that will be a combination of wilderness and/or farming (livestock grazing and game farming), provided the field quality is maintained by not exceeding the grazing capacity.

The preliminary LOM closure objectives and principles have been developed against the background of the mine location in the Hotazel region of the Northern Cape, and include the following:

- Minimise the areas of possible disturbance by mining activities.
- With the exception of the approved waste rock dump (WRD), all surface infrastructure (including the low level bridge) will be removed from site after closure. The access road to the mine site will however remain for post-closure use.
- Contamination beyond the mine site by surface run-off, groundwater movement and wind will be prevented.
- Mine closure is achieved efficiently, cost effectively and in compliance with the law.
- The social and economic impacts resulting from mine closure are managed in such a way that negative socio-economic impacts are minimised.

More specific closure objectives will be defined as part of the ongoing detailed closure planning and closure costing during the life of mine.

In the meantime, the closure outcomes for the post-closure mine site are therefore assumed to be as follows:

- Achieve chemical, physical and biological stability for an indefinite, extended time period over all disturbed landscapes and residual mining infrastructure.
- Protect surrounding surface water, groundwater, soils and other natural resources from loss of utility value or environmental functioning.
- Limit the rate of emissions to the atmosphere of particulate matter and salts to the extent that degradation of the surrounding areas' land capability or environmental functioning does not occur.
- Maximise visual 'harmony' with the surrounding landscape.
- Create a final land use that has economic, environmental and social benefits for future generations that outweigh the long term aftercare costs associated with the facility.

3. DECOMMISSIONING, REHABILITATION AND POST-CLOSURE ACTIVITIES

Decommisioning and rehabilitation of the site is estimated to take 2 years following LOM closure. The post-closure maintenance and aftercare activities thereafter is estimated to be a further 10 years, namely: 3 years of active maintenance and aftercare activities, followed by 7 years of passive maintenance and aftercare activities (i.e. maintenance and aftercare activities with a reduced frequency).

Decommissioning activities include:

- Surface infrastructure will be demolished and removed (including the low level bridge), with the exception of the waste rock dump (WRD) and tarred access road to the mine site.

- Sloping and rehabilitation of WRD to create a stable landform (a significant amount of this work can be done during mining operations as part of concurrent rehabilitation).
- All demolition material, waste and contaminated soils will be disposed of appropriately (on-site or off-site).
- Areas where infrastructure has been removed, will be levelled and prepared for rehabilitation in accordance with a topography and topsoil plan, and revegetation plan (to be developed as part of a detailed mine closure plan).

Rehabilitation activities include:

- Revegetation (with endemic species to the area) on all cleared and prepared areas to reduce the effects of soil erosion and to re-establish landscape functionality.
- Planting of trees and shrubs (usually from on-site nursery) and manual hand seeding or hydro-seeding (using either collected seed mixes from on-site/surrounding areas or commercial sources).

Post-closure activities include:

- Monitoring of all the decommissioned and rehabilitated areas.
- Maintenance and aftercare of all the decommissioned and rehabilitated areas.

Generally accepted “best practise” closure methods have been used as the basis for determining the rates for the various closure components associated with closure of the Mn48 Project site. Further details are provided below.

3.1 BUILDINGS, PLANT AND MINE INFRASTRUCTURE

Buildings, processing plant and mine infrastructure (conveyors, water supply pipelines etc.) will all be dismantled, and salvageable elements will be sold and removed from site. Inert non-salvageable elements including concrete, plastic liners, brickwork, conveyor belting etc. will be dismantled or broken up and buried on site (either within the remaining voids associated with the pollution control dams (PCD’s) or within the WRD). The buried elements must be covered with at least 1m of soil and/or waste rock.

Concrete foundations and underground services (e.g. electrical, water and sewer) will all be removed or buried at least 1m below natural ground surface.

Any contaminated soil from the decommissioned areas (that cannot be remediated on-site) will be excavated and disposed of off-site at a nearby appropriate facility. Contaminated soils will typically include those contaminated by hydrocarbons (i.e. diesel, oil, grease etc.) and non-biodegradable chemicals (i.e. reagents, chemicals, dust suppressants etc.).

All the decommissioned areas will be landscaped and levelled so that natural stormwater flow is restored and that there is no ponding of water (as far as reasonably practical). The decommissioned areas will be covered with 300 mm topsoil/growth medium material (i.e. whatever was initially stripped from the area prior to construction) and revegetated.

3.2 WASTE ROCK DUMP

The waste rock dump (WRD) will be rehabilitated as follows:

- Pushing down steep slopes to allow for the optimal re-establishment of vegetation.
- Shaping to ensure the surface is free draining (i.e. no ponding of water on the top surface post-closure).

- Covering the WRD with topsoil/growth medium material (i.e. whatever was initially stripped from the area prior to construction). The typical range depending on the type of vegetation ranges between 300 to 600 mm.
- Revegetating the WRD in accordance with the topography and topsoil plan, and revegetation plan (to be developed as part of a detailed mine closure plan).

The separation of clean and dirty water systems at the mine will be designed, implemented, and managed in accordance with the provisions of Regulation 704, 4 June 1999 (Regulation 704) for water management on mines. In this regard, runoff from the WRD will be collected by means of toe paddocks and will be allowed to evaporate. The toe paddocks will remain post-closure until such time as the WRD has been rehabilitated successfully, after which they can be removed.

Rehabilitation of the WRD can start during the operational phase (as part of concurrent rehabilitation works) and be completed during LOM decommissioning.

Inert non-salvageable rubble from the decommissioning of mine infrastructure may be buried within sections of the WRD.

3.2.1 Field Trials

Field trials (as part of concurrent rehabilitation efforts) should be undertaken to determine the most successful methods of revegetation that will include the evaluation of: using seedlings, local seed harvesting, commercially available seed mixes, planting aids (e.g. hydrogel, fertilizer), wet (hydroseeding) or dry seeding techniques, water requirements, maintenance and aftercare requirements, and the time taken to meet the criteria for revegetation success. Field trials will also further inform stormwater management infrastructure (e.g. benches, stormwater down chutes) and erosion management measures (e.g. retention berms).

3.3 ROAD NETWORK

Gravel roads no longer required for post-closure use will be ripped and covered with stockpiled topsoil to promote the re-establishment of indigenous vegetation. Tarred roads no longer required for post-closure use will first have the top layer works removed (and safely disposed of at a nearby off-site appropriate facility), and then rehabilitated as per gravel roads. The low level bridge will be demolished and removed.

All concrete lined drainage channels, sumps and culverts (i.e. inert non-salvageable elements) associated with closed roads will be broken up and buried on site (either within the WRD or within the remaining voids associated with the PCD's).

3.4 FENCING

Fencing no longer required for post-closure use will be removed and recycled for scrap. Inert material such as concrete foundations will be buried on site (either within the WRD or within the remaining voids associated with the PCD's).

3.5 POWERLINES

Powerlines no longer required for post-closure use will be removed and recycled for scrap. Inert material such as concrete foundations will be buried on site (either within the WRD or within the remaining voids associated with the PCD's).

3.6 STORMWATER MANAGEMENT

The existing stormwater management plan will be updated to identify what stormwater management structures are required post-closure and which can be decommissioned.

All the decommissioned areas of the mine site will be levelled and shaped so that the areas are free draining and there is no ponding of water. Any remaining slopes will be modified to at least 1V:3H (or flatter) to minimise erosion and long slopes may require energy/flow breakers to curb the velocity of stormwater runoff.

It is currently anticipated that none of the pollution control dams (PCD's) will be required post-closure, and hence these facilities and associated infrastructure can be decommissioned (as for concrete foundations, inert liner material etc. as mentioned previously), and the remaining voids potentially used to bury inert non-salvageable elements from the site decommissioning activities.

Any accumulated silt in the pollution control dams (that is typically classified as hazardous) will need to be safely disposed of at a nearby off-site appropriate facility.

3.7 REVEGETATION

Revegetation involves the placing of topsoil and planting/seeding of endemic flora to reduce the effects of soil erosion and to re-establish landscape functionality. An on-site nursery should be established to provide enough plant stock for revegetation activities (both concurrent and at LOM).

Seed collection from on-site/surrounding areas should also be undertaken (by a suitably qualified specialist who is familiar with the various seed types associated with the plant species in the area) to provide seed for manual hand seeding or hydro-seeding. Alternatievly, commercial seed mixes could be used (provided the source is reliable, of good quality and does not contain any alien and/or invasive species).

A revegetation programme, in consultation with a suitably qualified specialist, will be developed as part of a detailed mine closure plan.

3.8 MAINTENANCE AND AFTERCARE

All the rehabilitated areas will require some form of maintenance and aftercare to ensure closure success.

These activities will typically include erosion control and filling of erosion gulley's on slopes; fertilising of struggling rehabilitated areas; monitoring of groundwater quality; monitoring of vegetation composition and diversity; control and eradication of alien plants; monitoring slope stability of the WRD, monitoring of dust fallout, creating firebreaks etc.

It is currently anticipated that most of the maintenance and aftercare activities will be undertaken in the first 3 years following closure (the active maintenance period), and thereafter the frequency of activities is expected to stop (in areas were vegetation is considered self-sustaining) and/or decline (passive maintenance period). The passive maintenance period is a further 7 years of monitoring with a reduced frequency (see Section 4.5).

4. LOM CLOSURE LIABILITY CALCULATION

4.1 METHODOLOGY

The LOM closure liability was calculated in accordance with the draft 2019 Financial Provision Regulations, namely:

- A third party will be employed to undertake the decommissioning and rehabilitation work.
- All costs are based on market related figures based on prevailing rates.

- Mine infrastructure asset salvage value has not been taken into account.
- Provisional and general costs and contingencies as per the industry standard are included.

4.2 AREA OF DISTURBANCE

The areas of disturbance at Mn48 is shown in Appendix A, and consist of the following main areas:

- Main shaft, vent shaft, headgear, winder houses and marshalling yard.
- Crushing and screening plant, plant control room, crushed ore stockpile, lumpy and fine product stockpiles.
- Lamp and crush room, change house, training centre, medical centre, laboratory, and offices.
- Wellfields, water storage tanks, water treatment and sewage treatment plant.
- Bulk fuel storage, emulsion storage, salvage yard, conveyance storage, plant store, cable store and rope storage.
- Contractors laydown area, surface workshops and garage.
- Topsoil stockpile, WRD, PCD 1 and PCD 2.
- Explosives magazine, explosives destruction bunker and core shed.
- Access roads, low level bridge, parking areas, security buildings, weigh bridges and helicopter landing pad.
- Eskom, main and plant sub-stations.

It is currently assumed that all mine infrastructure will be demolished (or removed from site) and no handover of any facilities (for post-closure use) has been allowed for. The low level bridge will also be demolished and removed. Only the tarred access road to the mine site will remain for post-closure use.

4.3 CLOSURE COMPONENTS

The closure components for decommissioning and rehabilitation works to achieve the stated closure objectives and outcomes are tabled below. The rates for the closure components have been derived from SLR's database of closure rates.

No allowance for salvage and recycled/scrap material has been considered in these calculations.

Table 4-1: Closure Components

Ref Nr	Description	Unit	Master Rate
1	Dismantling of heavy plant structures	m^2	R 1,730.49
2	Dismantling of medium plant structures	m^2	R 778.08
3	Dismantling of workshops and shed type structures (5 to 10m high)	m^2	R 243.55
4	Dismantling of suspended conveyors (no cladding)	m	R 685.79
5	Dismantling of steel tanks (upto 5m high)	m^2	R 173.05
6	Demolition of floors, bases and foundations after removal of structures (heavy duty)	m^2	R 756.28
7	Demolition of floors, bases and foundations after removal of structures (medium duty)	m^2	R 275.60
8	Remove prefab structures and containers	m^2	R 188.00

Ref Nr	Description	Unit	Master Rate
9	Seal and concrete capping for 7 m diameter vertical mine shaft	Sum	R 600,000.00
10	Remove gravel roads/ hardstand areas and bury associated layer works	m^2	R 26.92
11	Remove tarred roads/ hardstand areas and bury associated layer works	m^2	R 72.87
12	Removal and disposal of paved areas	m^2	R 67.76
13	Remove shade cloth structures	m^2	R 31.88
14	Remove railway lines	m	R 378.15
15	Remove small diameter overland pipelines	m	R25.42
16	Dismantle security fencing	m	R 34.61
17	Reshaping, profiling of dumps	ha	R 141 643.50
18	Remove and dispose HDPE liners	ha	R 77 506.71
19	Shaping, leveling of infrastructural footprint areas (500 mm)	ha	R 70 821.75
20	Shaping, leveling of infrastructural footprint areas (750 mm)	ha	R 106,232.64
21	Place 300 mm topsoil and/or growth medium material for revegetation	m^3	R 45.33
22	Establishment of vegetation (general)	ha	R 17,689.42
23	Establishment of vegetation (WRD)	ha	R 24,675.46

4.4 TIME, FEE AND CONTINGENCY COSTS

The following time, fee and contingency costs have also been included in the LOM closure liability calculation based on SLR's experience with similar projects and/or typical industry standards.

Table 4-2: Time, Fee and Contingency Costs

Description	Percentage	Rate
Contractor P&G's (incl. site establishment and demobilization)	%	20
Tender process and procurement	%	6
Site supervision of closure works	%	7.5
Contingency	%	10

4.5 MONITORING AND MAINTENANCE COSTS

A preliminary post-closure monitoring and reporting programme has been developed as part of this estimate. Unit rates for monitoring, analyses and inspection activities were developed based on the costs of similar activities being undertaken by SLR. The total estimated cost of the post-closure monitoring and inspection activities (see Appendix B) has been calculated to be R 2,919,800.

This cost makes provision for (including a 2-year decommissioning period):

- 12 years of groundwater and/or surface water monitoring and analysis (quarterly monitoring for the first 2 years, bi-annual monitoring for the next 3 years, annual monitoring for remaining 7 years).

- 12 years of biodiversity monitoring/site inspections by external and independent environmental scientists (bi-annual monitoring for the first 5 years, annual monitoring for the remaining 7 years).
- Provision for basic maintenance expenses, where required, for the first 5 years (i.e. fertilizing, re-planting, control of alien vegetation, repair erosion etc.).

4.6 CLOSURE LIABILITY CALCULATION

In accordance with the draft 2019 Financial Provision Regulations, the amount to be set aside for the LOM closure and rehabilitation of the Mn48 Project (current value (CV) as at June 2020), is calculated to be R 32,745,511 (incl. VAT). The LOM closure liability calculation is provided in Appendix C.

The closure liability calculation is considered to have an accuracy of ±30% based on the unit rates used and the level of detail currently available.

4.7 ASSUMPTIONS AND EXCLUSIONS

The following assumptions are made for this calculation of the LOM closure liability:

- Mn48 will follow and adhere to the closure commitments made in their EMP.
- Mn48 will follow the mine plan and design /layout to minimise the potential for additional disturbed areas.
- A third party will be employed to undertake the decommissioning and rehabilitation work.
- The volume of stockpiled topsoil that has been stripped from infrastructure and operational areas will be sufficient for closure activities.
- Groundwater will not be negatively impacted by the mine workings.
- Runoff water quality from rehabilitated areas will be acceptable and will not require any further treatment. (A storm water management plan will be developed as part of a detailed closure plan later on).
- No allowance for salvage and/or recycling scrap material has been considered in the estimation procedure.
- Inert building and demolition rubble can be safely disposed and buried on site.
- Hazardous material can be safely disposed of offsite at a nearby appropriate facility.
- Reagent, fuel, lubricant and explosive manufacturers/suppliers will accept returned product at the end of the mine life.
- No consideration of the social closure costs has been included in this report.
- No assessment of any socio-economic/shared value/ community based programmes being implemented and whether these would continue post-closure of the operation.
- All costs associated with pre-closure monitoring, auditing and reporting are presumed to be covered under the operations expenditure of the mine, and have not been included in this preliminary closure plan.
- Revegetation trials (and hence the sustainability of any rehabilitation works) as per the requirements of annual rehabilitation planning (as per the draft 2019 Financial Provisioning Regulations) will be addressed as part of operations, and the findings incorporated into future closure liability updates.

These assumptions will be reviewed during the ongoing operations of the mine and following any technical work conducted in order to reduce information gaps and uncertainty prior to mine closure.

5. CONCLUSION

The LOM financial closure liability associated with the Mn48 Mining Right (current value as at June 2020) is R 32,745,511 (incl. VAT). The closure liability calculation is considered to have an accuracy of ±30% based on the unit rates used and the level of detail currently available.

6. RECOMMENDATIONS

Revised regulations (Government Gazette 42464, 2019) regarding the method for determining and making financial provision for closure liability are expected to be finalised by 19 June 2021. Thereafter, annual closure liability assessments and updates will, as a minimum, need to be prepared by reviewing the mine's:

- Annual rehabilitation plan(s),
- Final rehabilitation, decommissioning and mine closure plan; and
- Environmental risk assessment report.

It is therefore recommended that Mn48 make allowance for generating these documents prior to the first annual closure liability update (once construction of the Mn48 Project commences).

Stephen Van Niekerk (Pr Eng)

For SLR Consulting (South Africa) (Pty) Ltd

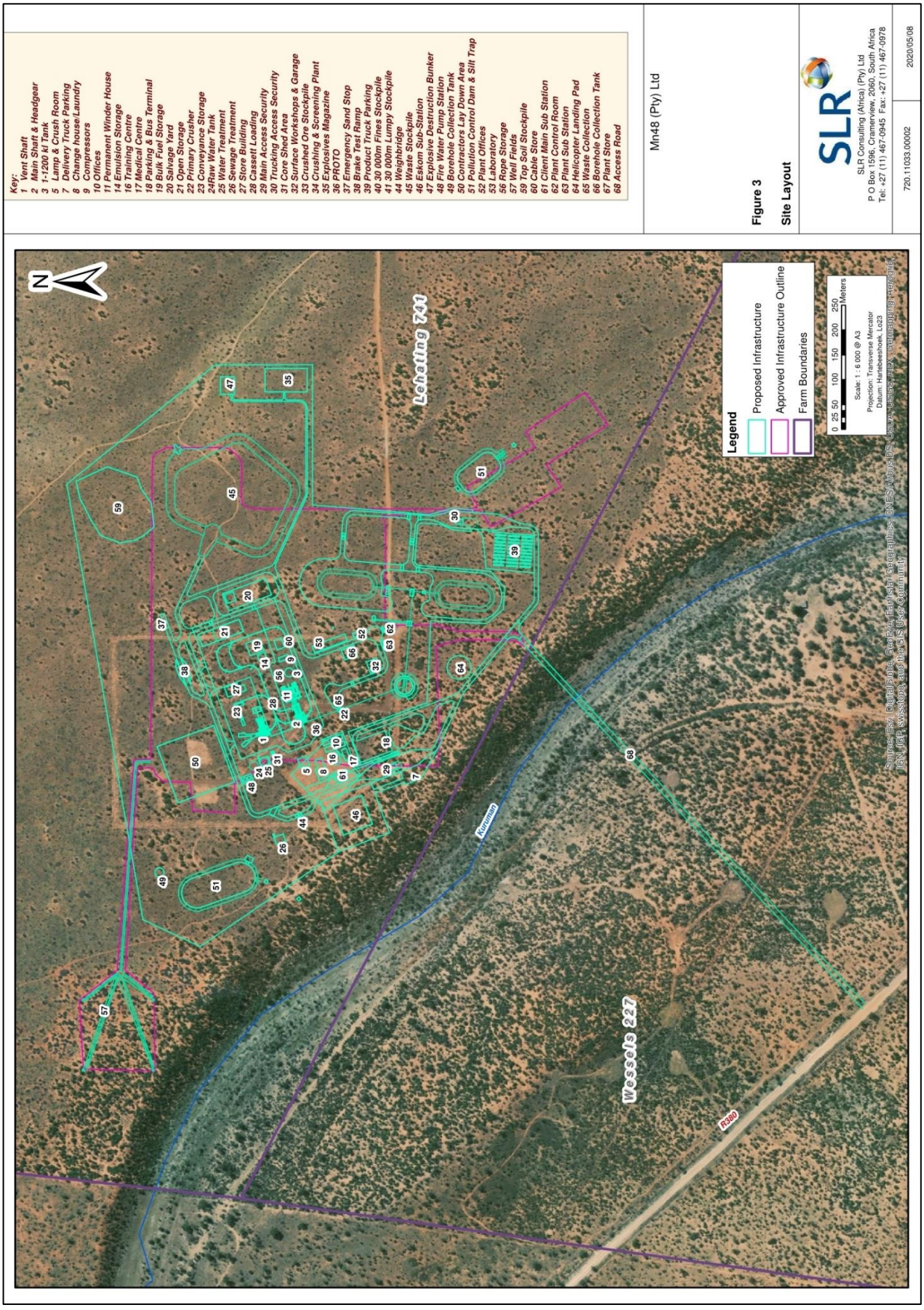
7. REFERENCES

DMR, 2005. *Guideline document for the evaluation of the quantum of closure-related financial provision provided by a mine*. January 2005 (DMR Guideline).

Government Gazette 42464, 2019. *Proposed regulations pertaining to the financial provision for the rehabilitation and remediation of environmental damage caused by reconnaissance, prospecting, exploration, mining or production operations*. 17 May 2019 (draft 2019 Financial Provisoning Regulations).

SLR, 2013. *Calculation of the Financial Closure Liability for Lehating Mine*, SLR Consulting, Project Reference 710.12015.00001, 26 July 2013.

Appendix A: Areas of Disturbance



Appendix B: Post-closure Monitoring and Maintenance Costs

Item	Monitoring / Maintenance Activity	no. / year	Cost/activity	Duration (years)	Frequency	Unit	Quantity	Total Cost
1	**WATER QUALITY**							
1.1	*Collection and Laboratory Analysis of Surface and Ground Water Samples*							
1.1.1	Decommissioning and Rehabilitation Phase	4	R 75 000	2	quarterly	Sum	8	R 600 000
1.1.2	Maintenance and Aftercare - Active Phase	2	R 75 000	3	bi-annual	Sum	6	R 450 000
1.1.3	Maintenance and Aftercare - PassivePhase	1	R 75 000	7	annual	Sum	7	R 525 000
2	**BI-ANNUAL INSPECTIONS**							
2.1	*Inspection of Decommissioning and reclamation works by a local suitably qualified and experienced Environmental Scientist*							
2.1.1	Decommissioning and Rehabilitation Phase	2	R 60 000	2	bi-annual	Sum	4	R 240 000
2.1.2	Maintenance and Aftercare - Active Phase	2	R 60 000	3	bi-annual	Sum	6	R 360 000
2.1.3	Maintenance and Aftercare - PassivePhase	1	R 60 000	7	annual	Sum	7	R 420 000
2.2	Provisional sum for earthmoving equipment, fuel and materials (e.g. fertilizing, re-planting, control of alien vegetation, repair erosion etc.)	**Rate / ha** R 5 800				ha	56	R 324 800
							TOTAL (excl. VAT) for LOM Liability as at June 2020	**R 2 919 800**

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Appendix C: LOM Closure Liability Calculation

CALCULATION OF THE QUANTUM							
Mine: Lehating Manganese Mine Evaluators: SLR Consulting (Pty) Ltd							LOM Closure Liability Date: At June 2020
No.	Description:	Key Ref:	Unit:	Operational Area	A Quantity	B Master rate	E=A*B*C*D Amount (Rands)
1	Dismantling of heavy plant structures	1	m^2	Vent shaft and winder house	195	R 1 730.49	R 337 444.73
		2	m^2	Main shaft and headgear	125	R 1 730.49	R 216 310.72
		11	m^2	Winder house (for main shaft)	140	R 1 730.49	R 242 268.01
		22	m^2	Primary crusher	75	R 1 730.49	R 129 786.43
		34	m^2	Crushing and screening plant	50	R 1 730.49	R 86 524.29
2	Dismantling of medium plant structures	1	m^2	Vent shaft and winder house	400	R 778.08	R 311 231.92
		9	m^2	Compressors	60	R 778.08	R 46 684.79
		14	m^2	Emulsion storage	150	R 778.08	R 116 711.97
		78	m^2	Bulk fuel storage	78	R 778.08	R 60 690.22
		26	m^2	Sewage treatment	250	R 778.08	R 194 519.95
		44	m^2	Weigh bridge	80	R 778.08	R 62 246.38
		25	m^2	Water treatment	250	R 778.08	R 194 519.95
		61	m^2	Main substation	60	R 778.08	R 46 684.79
		46	m^2	Eskom substation	50	R 778.08	R 38 903.99
		63	m^2	Plant substation	30	R 778.08	R 23 342.39
		41	m^2	Product weigh bridges (2 no.)	160	R 778.08	R 124 492.77
3	Dismantling of workshops and shed type structures	1	m^2	Winder house (for vent shaft)	140	R 243.55	R 34 096.32
		11	m^2	Winder house (for main shaft)	725	R 243.55	R 176 570.25
		56	m^2	Rope storage	81	R 243.55	R 19 727.16
		60	m^2	Cable store	320	R 243.55	R 77 934.46
		23	m^2	Conveyance storage	120	R 243.55	R 29 225.42
		20	m^2	Salvage yard	336	R 243.55	R 81 831.18
		35	m^2	Explosive magazine	40	R 243.55	R 9 741.81
		51	m^2	PCD No. 1 - pumpstation	100	R 243.55	R 24 354.52
		31	m^2	Core shed area	29	R 243.55	R 7 062.81
		67	m^2	Plant store	380	R 243.55	R 92 547.17
		32	m^2	Workshop & garage	415	R 243.55	R 101 071.25
		51	m^2	PCD No. 2 - pumpstation	50	R 243.55	R 12 177.26
		57	m^2	Wellfield pumps	40	R 243.55	R 9 741.81
4	Dismantling of suspended conveyors (no cladding)	34	m	From main shaft to product s/piles	660	R 685.79	R 452 622.30
5	Dismantling of steel tanks (upto 5m high)	3	m^2	1200 kl tank	254	R 173.05	R 43 955.43
		49	m^2	Borehole collection tank	254	R 173.05	R 43 955.43
		48	m^2	Fire water pumpstation	88	R 173.05	R 15 228.65
		24	m^2	Raw water tank	254	R 173.05	R 43 955.43
6	Demolition of floors, bases and foundations after removal of structures (heavy duty)	1	m^2	Vent shaft and winder house	505	R 756.28	R 381 923.26
		2	m^2	Main shaft and headgear	365	R 756.28	R 276 043.54
		11	m^2	Winder house (for main shaft)	825	R 756.28	R 623 934.04
		22	m^2	Primary crusher	75	R 756.28	R 56 721.28
		34	m^2	Crushing and screening plant	250	R 756.28	R 189 070.92
7	Demolition of floors, bases and foundations after removal of structures (medium duty)	1	m^2	Vent shaft and winder house	600	R 275.60	R 165 361.62
		3	m^2	1200 kl tank	254	R 275.60	R 70 003.09
		56	m^2	Rope storage	81	R 275.60	R 22 323.82
		60	m^2	Cable store	320	R 275.60	R 88 192.86
		23	m^2	Conveyance storage	120	R 275.60	R 33 072.32
		14	m^2	Emulsion storage	176	R 275.60	R 48 506.08
		19	m^2	Bulk fuel storage	300	R 275.60	R 82 680.81
		35	m^2	Explosive magazine	40	R 275.60	R 11 024.11
		49	m^2	Borehole collection tank	254	R 275.60	R 70 003.09
		51	m^2	PCD No. 1 - silt trap & dissipator	165	R 275.60	R 45 474.45
		51	m^2	PCD No. 1 - pumpstation	150	R 275.60	R 41 340.40
		26	m^2	Sewage treatment	300	R 275.60	R 82 680.81
		44	m^2	Weigh bridge	130	R 275.60	R 35 828.35
		48	m^2	Fire water pumpstation	294	R 275.60	R 81 027.19
		24	m^2	Raw water tank	254	R 275.60	R 70 003.09
		25	m^2	Water treatment	300	R 275.60	R 82 680.81
		31	m^2	Core shed area	29	R 275.60	R 7 992.48
		67	m^2	Plant store	380	R 275.60	R 104 729.03

		32	m^2	Workshop & garage	415	R 275.60	R 114 375.12
		51	m^2	PCD No. 2 - silt trap & dissipator	165	R 275.60	R 45 474.45
		51	m^2	PCD No. 2 - pumpstation	100	R 275.60	R 27 560.27
		41	m^2	Product weigh bridges (2 no.)	260	R 275.60	R 71 656.70
		33	m^2	Crushed ore stockpile	2 100	R 275.60	R 578 765.67
		68	m^2	WRD spillway	150	R 275.60	R 41 340.40
		57	m^2	Wellfield pumps	40	R 756.28	R 30 251.35
		n/a	m^2	River crossing	1 300	R 275.60	R 358 283.51
8	Remove prefab structures and containers	9	m^2	Compressors	160	R 188.00	R 30 080.00
		56, 28	m^2	Substation and MCC	84	R 188.00	R 15 792.00
		27	m^2	Store building	470	R 188.00	R 88 360.00
		5	m^2	Lamp & crush room	360	R 188.00	R 67 680.00
		8	m^2	Change house	690	R 188.00	R 129 720.00
		16	m^2	Training centre	290	R 188.00	R 54 520.00
		10	m^2	Offices	740	R 188.00	R 139 120.00
		61	m^2	Main substation	115	R 188.00	R 21 620.00
		17	m^2	Medical centre	240	R 188.00	R 45 120.00
		29	m^2	Main access security	165	R 188.00	R 31 020.00
		53	m^2	Laboratory	995	R 188.00	R 187 060.00
		52	m^2	Plant offices	185	R 188.00	R 34 780.00
		63	m^2	Plant substation	90	R 188.00	R 16 920.00
		62	m^2	Plant control room	30	R 188.00	R 5 640.00
		30	m^2	Truck access security	165	R 188.00	R 31 020.00
9	Seal and concrete capping for 7 m diameter vertical mine shafts	1	Sum	Vent shaft	1	R 600 000.00	R 600 000.00
		2	Sum	Main shaft	1	R 600 000.00	R 600 000.00
10	Remove gravel roads/ hardstand areas and bury associated layer works	57	m^2	Access road to wellfields	4 500	R 26.92	R 121 146.63
		n/a	m^2	Mine access roads	40 645	R 26.92	R 1 094 223.29
		40, 41	m^2	Product stockpile areas	29 400	R 26.92	R 791 491.32
11	Remove tarred roads/ hardstand areas and bury associated layer works	n/a	m^2	Mine access roads	21 770	R 72.87	R 1 586 379.90
12	Removal and disposal of paved areas	28	m^2	Rail loop area	24 900	R 63.76	R 1 587 624.00
		20	m^2	Salvage yard	878	R 63.76	R 55 981.28
		n/a	m^2	Around buildings & parking areas	8 075	R 63.76	R 514 862.00
		46	m^2	Eskom substation	3 790	R 63.76	R 241 650.40
		64	m^2	Helicopter pad	1 815	R 63.76	R 115 724.40
13	Remove shade cloth structures	18	m^2	Parking and bus terminal areas	1 500	R 31.88	R 47 820.00
14	Remove railway lines	28	m	Rail at shaft for moving cassettes	840	R 378.15	R 317 648.13
15	Remove small diameter overland pipelines	57	m	Wellfield pipelines	900	R 25.42	R 22 878.00
16	Dismantle security fencing	21	m	Open storage area	280	R 34.61	R 9 692.16
		47	m	Explosive destruction bunker	178	R 34.61	R 6 161.44
		35	m	Explosive magazine	746	R 34.61	R 25 822.68
		46	m	Eskom substation	530	R 34.61	R 18 345.87
		n/a	m	Perimeter fence	4 340	R 34.61	R 150 228.46
17	Reshaping, profiling of dumps	45	ha	Waste rock stockpile	5.170	R 141 643.50	R 732 296.90
18	Remove and dispose HDPE liners	51	ha	PCD No. 1	1.090	R 77 506.71	R 84 482.31
		51	ha	PCD No. 2	0.610	R 77 506.71	R 47 279.09
19	Shaping, leveling of infrastructural footprint areas (500 mm)	51	ha	PCD No. 1	1.090	R 70 821.75	R 77 195.71
		51	ha	PCD No. 2	0.610	R 70 821.75	R 43 201.27
20	Shaping, leveling of infrastructural footprint areas (750 mm)	47	ha	Explosive destruction bunker	0.098	R 106 232.64	R 10 410.80
		35	ha	Explosive magazine	0.042	R 106 232.64	R 4 461.77
		n/a	ha	River crossing	0.130	R 106 232.64	R 13 810.24
21	Place 300 mm topsoil and/or growth medium material for revegetation	45	m^3	Waste rock stockpile	15 510	R 45.33	R 703 005.06
		47	m^3	Explosive destruction bunker	294	R 45.33	R 13 325.82
		35	m^3	Explosive magazine	1 205	R 45.33	R 54 595.07
		50	m^3	Contractors laydown area	4 410	R 45.33	R 199 887.32
		n/a	m^3	Plant area	62 580	R 45.33	R 2 836 487.17
22	Establishment of vegetation (general)	47	ha	Explosive destruction bunker	0.098	R 17 689.42	R 1 733.56
		35	ha	Explosive magazine	0.402	R 17 689.42	R 7 102.30
		59	ha	Topsoil stockpile	1.660	R 17 689.42	R 29 364.44
		50	ha	Contractors laydown area	1.470	R 17 689.42	R 26 003.45
		51	ha	PCD No. 1	1.090	R 17 689.42	R 19 281.47
		51	ha	PCD No. 2	0.610	R 17 689.42	R 10 790.55
		n/a	ha	Plant area	45.501	R 17 689.42	R 804 877.44
23	Establishment of vegetation (WRD)	45	ha	Waste rock stockpile	5.170	R 24 675.46	R 127 572.11
						Subtotal 1 (Sum of items 1 to 23 Above)	R 22 099 782.63

24	Contractor P&G's (incl. site establishment and demobilization)	20% of Subtotal 1	R 4 419 956.53
25	Tender process and procurement	6% of Subtotal 1	R 1 325 986.96
26	Site supervision of closure works	7.5% of Subtotal 1	R 1 657 483.70
		Subtotal 2 (Subtotal 1 plus Time & Fee values)	R 29 503 209.82
27	Post-closure monitoring and aftercare costs	Sum	R 2 919 800.00
		Subtotal 3 (Subtotal 2 plus Post-closure costs)	R 32 423 009.82
28	Contingency	10.0% of Subtotal 3	R 3 242 300.98
		Subtotal 4 (Subtotal 3 plus Contingency)	R 32 745 510.80
		GRAND TOTAL FOR MINING OPERATIONS (excl. VAT)	**R 32 745 510.80**