MINISTER FOR THE ENVIRONMENT;
LABOUR RELATIONS

Statement No.

000506

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

MURRIN MURRIN NICKEL-COBALT PROJECT STAGE 2 EXPANSION
60 KM EAST OF LEONORA

Proposal: The Stage 2 expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation (Stage 1), 60 kilometres east of Leonora, as documented in schedule 1 of this statement.

The Stage 2 expansion of the project includes the mining of additional ore; an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Proponent: Anaconda Operations Pty Ltd

Proponent Address: Level 12, Quay Side, 2 Mill Street, PERTH WA 6000

Assessment Number: 1229

Report of the Environmental Protection Authority: Bulletin 931

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

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1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

2 Proponent Commitments

2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Borefield Development Plans

3-1 Prior to commencement of construction of each borefield, the proponent shall prepare a Borefield Development Plan to achieve the following objective:

- to ensure that the beneficial uses (including ecosystem maintenance) of the groundwater are not adversely impacted by the operation of the proposal.

Each Plan shall be prepared to the requirements of the Environmental Protection Authority on advice of the Water and Rivers Commission and the Department of Environmental Protection, and shall address:

1 the design of and rate of abstraction from the borefield;

2 aquifer modelling and predicted response to abstraction over the proposed life of the borefield;

3 identification of beneficial uses (including ecosystem maintenance) of associated groundwater and surface water of the area;

4 potential impacts on beneficial uses (including ecosystem maintenance);

5 appropriate liaison with the local Aboriginal communities in order to meet the objectives of condition 6-1 in relation to the borefield in question;

6 monitoring and management of any impacts on beneficial uses, and monitoring to refine model predictions; and

7 a description of the existing environment and predicted construction impacts (which will require fauna, flora, vegetation, archaeological, and ethnographic surveys) where this information has not already been provided to the Environmental Protection Authority.

3-2 The proponent shall implement each Borefield Development Plan required by condition 3-1 subject to any modifications under condition 3-3.

3-3 If in operation, any borefield developed pursuant to a plan under condition 3-1 has any impact on beneficial uses (including ecosystem maintenance) which is considered unacceptable by the Environmental Protection Authority on advice of the Water and Rivers Commission and the Department of Environmental Protection, the proponent shall modify the appropriate plan/s to the requirements of the Environmental Protection Authority on advice of the Water and Rivers Commission and the Department of Environmental Protection.

3-4 The proponent shall extract groundwater from all borefields at a total rate not exceeding 53 ML per day.

3-5 The proponent shall make all Borefield Development Plans required by condition 3-1 and as modified under condition 3-3 publicly available, to the requirements of the Environmental Protection Authority.

3-6 Prior to commissioning of the proposal, the proponent shall prepare a contingency plan to the requirements of the Environmental Protection Authority on advice of the Water and Rivers Commission and the Department of Environmental Protection outlining areas of additional prospective borefield development in the event that borefields meeting the requirements of condition 3-1 cannot sustain the proposal's water requirement.

The contingency plan shall also include a programme of investigation for these borefields.

4 Subterranean Fauna Management Plan (Calcrete Quarry Areas)

4-1 Prior to quarrying either calcrete deposit (Shadywell or Pipeline), the proponent shall develop a Subterranean Fauna Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Conservation and Land Management and the Western Australian Museum.

The objective of this Plan is:

- to conserve and protect subterranean fauna species in the calcrete quarry areas.

This Plan shall address:

1 subterranean fauna surveys of the calcrete areas, and possibly outside these areas, to establish the conservation significance of any species within the calcrete quarry areas;

2 mapping of the local and regional distribution of species identified by the surveys; and

3 measures to limit the impacts on any localised species until the known range of these species is extended by additional surveys of other calcrete areas of the region and there is no significant risk of any species of subterranean fauna becoming extinct as a result of quarrying;

4-2 The proponent shall implement the Subterranean Fauna Management Plan required by condition 4-1.

4-3 The proponent shall make the Subterranean Fauna Management Plan required by condition 4-1 publicly available, to the requirements of the Environmental Protection Authority.

5 Tailings Storage Facility Option (Central Thickened Discharge)

5-1 If the proponent adopts the "Central Thickened Discharge" option, prior to construction of the Tailings Storage Facility, the proponent shall provide further details and modelling of the facility, to the requirements of the Environmental Protection Authority on advice of the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Environmental Protection.

The objectives of this requirement are:

- to protect beneficial uses (including ecosystem maintenance) of groundwater surrounding the facility;
- to protect vegetation surrounding the facility;
- to protect surface water quality in nearby creeks; and
- to manage implications for migratory birds and other fauna.

Details and modelling shall address the following:

1 the detailed design of the facility;

2 assessment of the predicted particle form and geotechnical characteristics of the tailings, including settling characteristics, and settled and compacted permeabilities;

3 modelling of seepage from the facility and its affect on the local groundwater system throughout its life and for a number of decades afterwards; and

4 management of large rainfall events.

5-2 If the proponent adopts the "Central Thickened Discharge" option, the proponent shall construct and operate the facility in accordance with the details and modelling required by condition 5-1.

6 Community Liaison

6-1 Prior to commissioning the Stage 2 expansion, the proponent shall, in consultation with the current members of the Murrin Murrin Aboriginal Environmental Liaison Committee, formalize the role and functioning of the committee.

The objectives of this condition are to ensure that through the committee the local Aboriginal communities:

- are kept informed about the potential and actual environmental impacts of the Murrin Murrin Project;
- are able to make their concerns in regard to environmental impacts known to the proponent; and
- are able to have meaningful input into the proponent's management of environmental impacts.

6-2 Within six months following commissioning, the proponent shall report on how the objectives referred to in condition 6-1 are to be achieved through the Murrin Murrin Aboriginal Environmental Liaison Committee, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

7 Greenhouse Gas Emissions Management Plan

7-1 Prior to commissioning, the proponent shall prepare a Greenhouse Gas Emissions Management Plan:

- to ensure that "greenhouse gas" emissions from the project are adequately addressed and best available efficient technologies are used in Western Australia to minimise Western Australia's "greenhouse gas" emissions; and
- to mitigate "greenhouse gas" emissions in accordance with the Framework Convention on Climate Change 1992, and consistent with the National Greenhouse Strategy,

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall include:

1 calculation of the "greenhouse gas" emissions associated with the proposal, as indicated in "Minimising Greenhouse Gas Emissions, Guidance for the Assessment of Environmental Factors, No. 12" published by the Environmental Protection Authority;

2 specific measures to minimise the "greenhouse gas" emissions associated with the proposal;

3 monitoring of "greenhouse gas" emissions;

4 estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product; and

5 an analysis of the extent to which the proposal meets the requirements of the National Strategy using a combination of:
   - "no regrets" measures;
   - "beyond no regrets" measures;
   - land use change or forestry offsets; and
   - international flexibility mechanisms.

7-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 7-1.

7-3 The proponent shall make the Greenhouse Gas Emissions Management Plan required by condition 7-1 publicly available, to the requirements of the Environmental Protection Authority.

8 Decommissioning Plan

8-1 Within five years following commissioning, or at such later time considered appropriate by the Minister for the Environment on advice of the Department of Environmental Protection, the proponent shall prepare a Decommissioning Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Conservation and Land Management.

This Plan shall:

1 describe the processes for decommissioning and rehabilitation of the project area;

2 provide for the long term management of ground and surface water systems affected by the tailings storage facility and evaporation pond;

3 provide for the development of a 'walk away' solution for the decommissioned mine pit, waste dumps, process plant, tailings dam, evaporation pond and all associated infrastructure;

4 identify all contaminated areas, including provision of evidence of notification to relevant statutory authorities; and

5 investigate and report on the potential for backfilling pits, as a means of rehabilitating pits for the remainder of the project life.

Note: A 'walk away' solution means that the site shall either no longer require management at the time the proponent ceases operations, or if further management is deemed necessary, the proponent shall make adequate provision so that the required management is undertaken with no liability to the State.

8-2 The proponent shall implement the Decommissioning Plan required by condition 8-1 until such time as the Minister for the Environment determines that decommissioning is complete.

8-3 The proponent shall make the Decommissioning Plan required by condition 8-1 publicly available, to the requirements of the Environmental Protection Authority.

9 Performance Review

9-1 Each six years following the commencement of construction, the proponent shall submit a Performance Review to the Department of Environmental Protection:

- to document the outcomes, beneficial or otherwise;
- to review the success of goals, objectives and targets; and
- to evaluate the environmental performance over the six years;

relevant to the following:

1 environmental objectives reported on in Environmental Protection Authority Bulletin 931;

2 proponent's consolidated environmental management commitments documented in schedule 2 of this statement and those arising from the fulfilment of conditions and procedures in this statement;

3 environmental management system environmental performance targets;

4 environmental management programs and plans; and/or

5 environmental performance indicators;

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

Note: The Environmental Protection Authority may recommend changes and actions to the Minister for the Environment following consideration of the Performance Review.

10 Proponent

10-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.

10-2 Any request for the exercise of that power of the Minister referred to in condition 10-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

10-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

11 Commencement

11-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

11-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

11-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 11-1 and 11-2.

11-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

12 Compliance Auditing

12-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

12-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal written advice that the requirements have been met.

12-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

2 Nickel-Cobalt ore mining and processing at Murrin Murrin for the Stage 1 project has already been approved (Statement Nos 418, 444, and 445).

CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

31 MAY 1999

Schedule 1

The Proposal (1229)

The Murrin Murrin Nickel-Cobalt Stage 2 expansion is a proposal to increase the processing and production of the existing Murrin Murrin Nickel-Cobalt project (Stage 1) to approximately 250% of its current level.

The existing Murrin Murrin Nickel-Cobalt project, located 60 km east of Leonora (Figure 1), has environmental approval to mine and process 4 Mtpa (million tonnes per annum) of ore, producing approximately 45 000 tpa of nickel, 3 000 tpa of cobalt, and 145 000 tpa of ammonium sulphate.

The expansion will involve mining the Murrin Murrin East ore bodies located 45 km southeast of the current project area, increasing the rate of mining of the Murrin Murrin North and South ore bodies, transporting the ore to the existing Murrin Murrin processing plant, and processing the ore within an expanded plant. The expanded project will also require the development of additional borefields, further calcrete quarry capacity and extended transport infrastructure (see Figure 2).

The Murrin Murrin Expansion Project will affect the Stage 1 Project as follows:

- increase in the mining rate and the development of new orebodies at the Murrin Murrin North and South Project Areas;
- expansion of the Stage 1 processing plan to process an additional 6 Mtpa of ore (giving a total throughput of 10 Mtpa);
- option to produce ammonia on-site rather than transport it from Kwinana;
- option to produce a zinc byproduct;
- additional tailings storage facilities;
- additional area for evaporation ponds; and
- option to develop rail infrastructure in the area to rail goods, products, and ore to and from the processing plant rather than the current road transport.

In addition to these effects, the following components will be added to the Stage 1 Project as part of the Stage 2 expansion:

- mining of the Murrin Murrin East Orebodies, located approximately 45 km to the southeast of the Murrin Murrin Plant Site and adjacent to the western edge of Lake Carey;
- a Run Of Mine (ROM) stockpile area at the Murrin Murrin East Project Area;
- crushing and blending of ore at the Murrin Murrin East Project Area;
- either a conveyor, haul road or rail line to transport the ore from the Murrin Murrin East ROM stockpile and mining areas to the existing Murrin Murrin Processing Plant;
- the development of new calcrete quarries located initially 5 km west of the decommissioned Windarra mine site and extending northwards;
- transportation of the calcrete by road, rail or slurry pipeline to the Plant Site;
- discharge water from pit dewatering operations to the starter pits at Murrin Murrin East and/or use for dust suppression;
- development of additional borefields (Sullivan, Station, Granite, Charcoal, Hamilton, and Grey Mare Borefields); and
- establishment of infrastructure facilities at Murrin Murrin East to support construction, operation and mining activities.

A simplified process flow diagram for the Stage 2 expansion is provided in Figure 3.

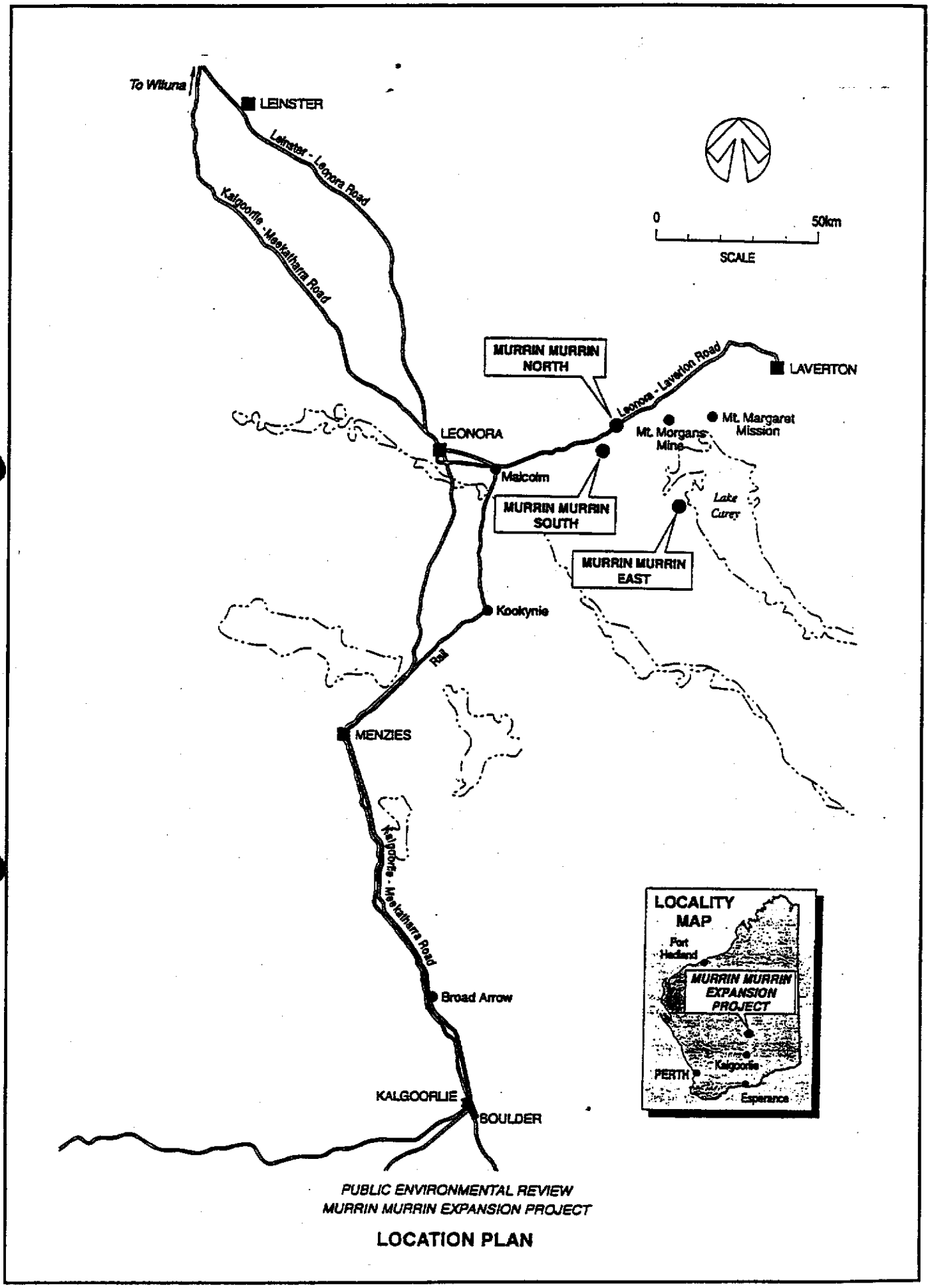


Figure 1. Location Plan (Source: Dames & Moore, 1998).

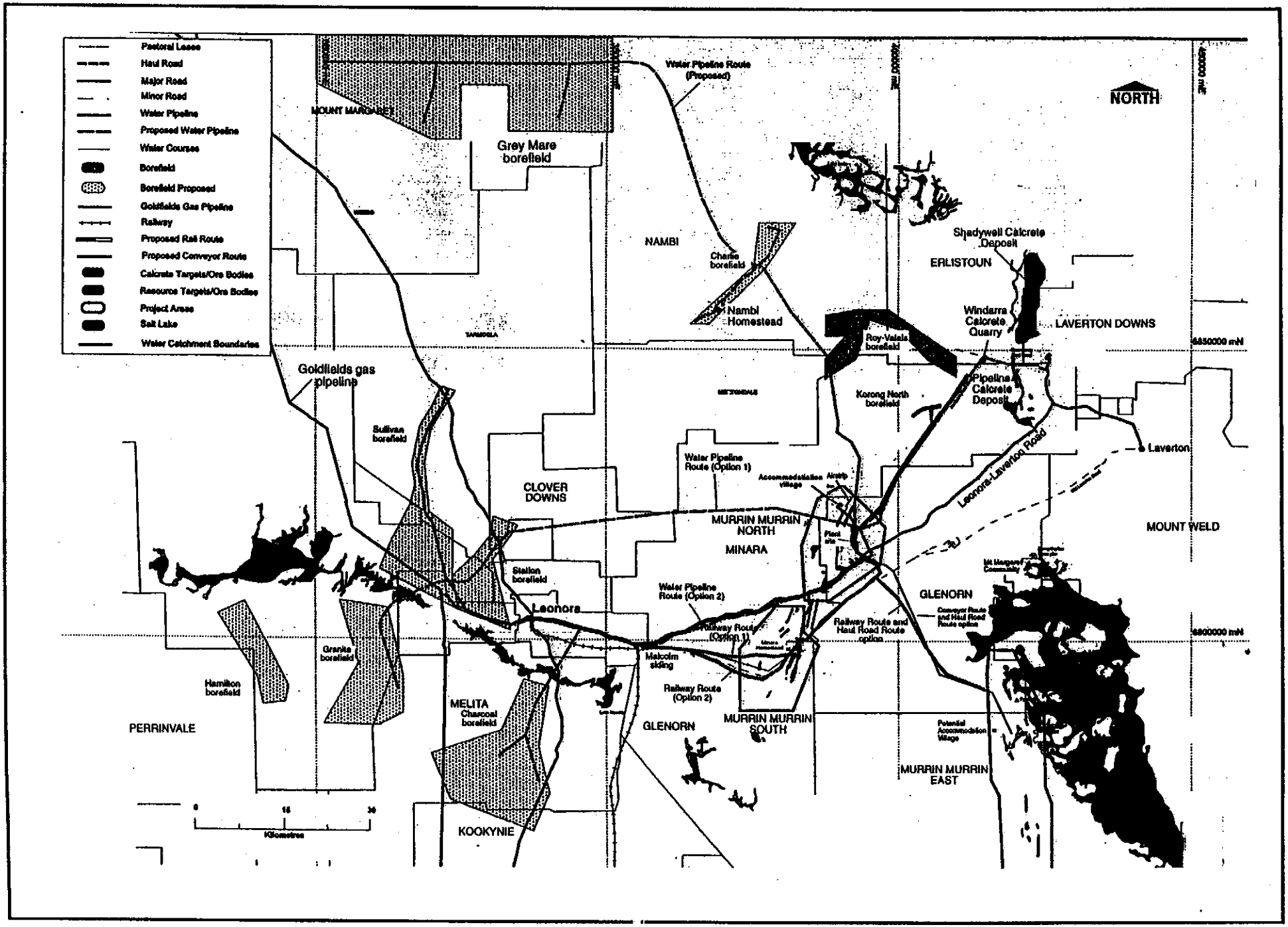


Figure 2. Project Layout (Source: Dames & Moore, 1998).

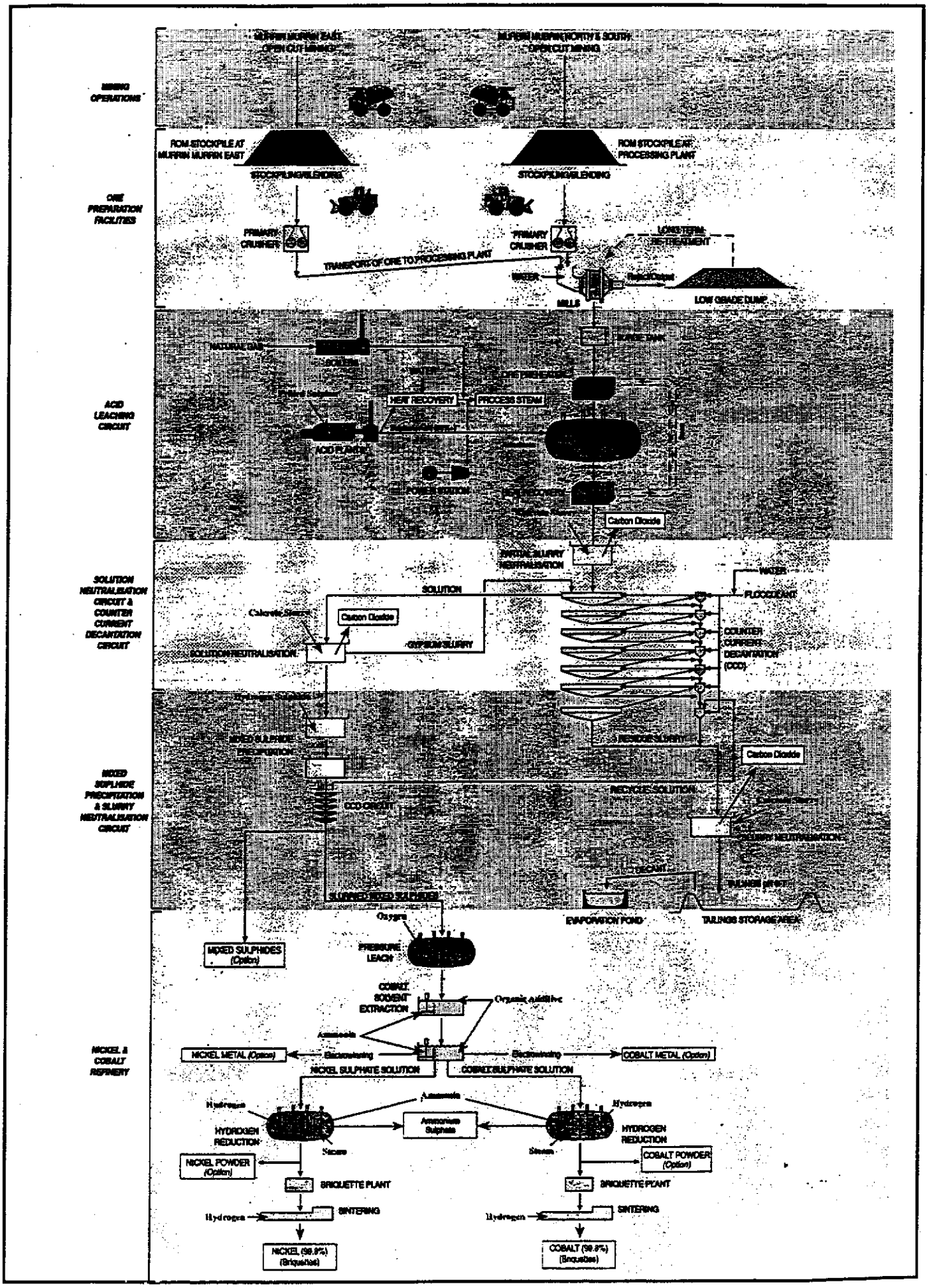


Figure 3. Process Flow Diagram (Source: Dames & Moore, 1998).

Key Characteristics Table (1229)

	MM Stage 1 Project		Overall Project	
	Design	Maximum Capacity	Design	Maximum Capacity
Life of Project(Indicative)	~30 years		~30 years	
Inputs				
Nickel Cobalt Ore (Mtpa)	4.0	4.5	10	11
Calcrete[1] (Mtpa)	1.3	1.5	3.9	4.3
Elemental Sulphur (Mtpa)	0.54	0.62	1.4	1.9[2]
Process Water (ML/d)	35	40	Up to 88	Up to 97[3]
Natural Gas (TJpd) (with Ammonia Plant in Expanded Project)	8	25	40	90
Outputs[4]				
Products				
Nickel Metal Briquettes (tpa)	45,500	50,000	115,000	126,500
Cobalt Metal Briquettes (tpa)	3,000	3,800	11,000	12,000
Cobalt Powder (tpa)	3,000	3,800	11,000	12,000
Cobalt Cathode (if electrowinning is used) (tpa)	3,000	3,800	11,000	12,000
Cobalt Sulphate Crystals (tpa)	8,200	8,200	22,000	24,000
Mixed Nickel Cobalt Sulphide Powder (tpa)	29,000	100,000	250,000	275,000
Nickel Powder (tpa)	20,000	20,000	115,000	126,500
Nickel Cathode (if electrowinning is used) (tpa)	0	0	115,000	126,500
Ammonium Sulphate Crystals (tpa)	145,000	160,000	400,000	440,000
Wastes and Emissions				
Tailings Solids (Mtpa) (including gypsum)	4.8	5.4	13.3	14.5
Water from Dewatering Operations (kL/d)	-	-	Up to 500	Up to 500
Sulphur Dioxide[5] (g/s)	189	ND	329	ND
Oxides of Nitrogen[5] (g/s)	20.0	ND	27.3	ND
Carbon dioxide (Mtpa)	0.38	ND	1.14	ND

Waste Dumps - Indicative Characteristics	
Area disturbed by waste dumps and orestockpiles at Murrin Murrin East (km²)	25
Area disturbed by waste dumps and orestockpiles at Murrin Murrin North and South (km²)	15
Height of waste dumps	20m

Tailing Storage Facility and Evaporation Ponds – Indicative Characteristics	
Area of disturbance TSF (km²)	Up to 23
Area of Disturbance Evaporation Ponds (km²)	Up to 12
Groundwater criteria	Designed to: • Comply with the DMA Guidelines; • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.

Pits - Indicative Characteristics	
Area to be disturbed at Murrin Murrin East (km²)	17
Area to be disturbed at Murrin Murrin North and South (km²)	8.5
Depth of pits	estimated maximum depth of 50m

Calcrete Quarry – Indicative Characteristics	
Area of disturbance (km²)	15

Notes: Figures presented in this table for waste dumps, pits, calcrete quarry and the TSF and evaporation ponds are indicative only and final figures will be determined during detailed engineering in consultation with the DME.

1 The quantity of calcrete required will vary as a function of its calcium carbonate content. A high calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralisation requirements. The estimated value of 3.9Mtpa is based on an average calcium carbonate content of 52%.

2 Maximum capacity is based on the option of two 4,400tpd sulphuric acid plants for the Expansion Project to enable supply to third party users.

3 Maximum capacity is based on the option of a 350,000tpa ammonia plant for the Expansion Project to enable supply to third party users.

4 The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

ND Not defined.

Schedule 2

Proponent's Consolidated Environmental Management Commitments

4 May 1999

MURRIN MURRIN NICKEL-COBALT PROJECT
STAGE 2 EXPANSION
60 KM EAST OF LEONORA (1229)

ANACONDA OPERATIONS PTY LTD

Murrin Murrin Stage 2 Expansion (1229)

Summary of Proponent's Environmental Management Commitments

Issue	Objective	Commitment	To Whose Satisfaction	Status
Previous Commitments Made During the EIA Process				
Environmental Management Programme	To develop and implement an Environmental Management Programme to ensure sound environmental management of the Project's construction phase.	Commitment 1 Prior to commencement of the Project, the Proponent will prepare and implement an Environmental Management Programme for the construction phase, in consultation with the DEP, DME, CALM and other relevant agencies to meet the requirements of the EPA. Further, the Proponent will ensure that its contractors comply with the environmental management strategies and procedures described in the EMP.	Developed in consultation with the DEP, DME, CALM and other relevant agencies to meet the requirements of the EPA.	Complete for currently MM Stage 1 Project. The EMP will be updated as required for the Expansion Project.
Environmental Management System	To develop and implement an Environmental Management System to ensure sound environmental management of the Project's operations and decommissioning phase.	Commitment 2 The Proponent will develop and implement an Environmental Management System for the operation of the Project prior to the start of operations. This EMS will be developed in consultation with the DEP, DME and CALM, and to the satisfaction of the EPA. Further, the Proponent will ensure that its contractors comply with the environmental management strategies and procedures described in the EMS.	Developed in consultation with the DEP, DME and CALM to meet the requirements of the EPA	In progress and likely to be in place by November 1998.
Protection of flora and vegetation	To minimise disturbance of the general flora and vegetation of the Project Area.	Commitment 3 The Proponent will progressively rehabilitate disturbed areas to minimise disturbance of biological communities. The rehabilitation will be completed to the satisfaction of the EPA in accordance with the approved EMP and EMS.	EPA	Ongoing.
Protection of significant flora	To minimise disturbance of known *Hemigenia exilis* populations within the Project Area, where possible.	Commitment 4 The Proponent will undertake the construction, operation and decommissioning of the Project in a manner that minimises disturbance to significant flora populations. Further the Proponent will require its contractors to comply with this commitment. This will be undertaken to the satisfaction of the EPA and CALM, in accordance with the approved EMP and EMS.	EPA, CALM	Management Plan for *Hemigenia exilis* approved by CALM. Ministerial Approval "to take" *Hemigenia exilis* at Murrin Murrin South obtained. Ongoing research being undertaken. *Hemigenia exilis* removed from the Declared Rare Flora List and now categorised as Priority Four Species. Commitment has been updated to reflect the new status of *Hemigenia exilis*. EMP to be updated for the Expansion Project.

Murrin Murrin Stage 2 Expansion (1229) - commitments (*cont'd*)

Issue	Objective	Commitment	To Whose Satisfaction	Status
Erosion control	To minimise the risk of erosion and sedimentation.	Commitment 5 The Proponent will minimise erosion by minimising the extent of land disturbance and progressively rehabilitating disturbed areas. This will be undertaken to the satisfaction of the EPA and DME in accordance with the approved EMP and EMS.	EPA, DME	Ongoing.
Potential water quality impacts due to surface runoff	To minimise the off-site transport of sediments.	Commitment 6 The Proponent will minimise the off-site transport of sediments by minimising exposed surfaces, identifying and treating on-site areas prone to erosion and progressively rehabilitating disturbed areas. The Proponent will also undertake a water quality monitoring programme for Cement Creek and Katata Creek. These monitoring programmes will be developed and implemented to meet the requirements of the EPA. DME and WRC. If adverse impacts on water quality are observed through monitoring, the proponent will develop and implement management measures to rectify these impacts.	EPA, DME, Water & Rivers Commission	Monitoring programme for Cement Creek has been established Ongoing programme.
Dust control – construction phase	To control any dust generated as a result of construction phase activities.	Commitment 7 The Proponent will implement dust mitigation measures including containment and suppression during construction to the satisfaction of the EPA and DME.	EPA, DME	Ongoing.
Dust control – operations phase	To minimise dust generation during the operations phase.	Commitment 8 The Proponent will minimise dust generation during operation of the facility by the following measures: • regular cleaning of areas likely to accumulate dust; • sealing of major roadways within the Plant Site; and • use of water sprays on mine areas, ore and calcrete haulage routes, stockpiles and other Project Areas, as required. This programme will be completed to the satisfaction of the EPA and DME.	EPA, DME	Dust control measures incorporated into the Project design and implementation.
Greenhouse Gas Emissions	To comply with the State and Federal Government Greenhouse Policies.	Commitment 9 The total carbon dioxide emission for the Project will be calculated by the Proponent on an annual basis and reported to the DEP. The Proponent will explore mechanisms to minimise greenhouse gas emissions on an ongoing basis. The Proponent will consider entering into the Federal Government's Greenhouse Challenge Programme.	EPA	Methods of minimising carbon dioxide emissions are being explored on an ongoing basis. The Proponent is currently having discussions with the Federal Government's Greenhouse Challenge Office.

Murrin Murrin Stage 2 Expansion (1229) - commitments (*cont'd*)

Issue	Objective	Commitment	To Whose Satisfaction	Status
Noise	To minimise the impact of noise generated by the construction and operation of the Project.	Commitment 10 The Proponent will ensure that noise from the Project will comply with the requirements of the State's noise regulations. If noise levels attributable to the Project exceed EPA criteria, the Proponent will take measures to reduce the impact.	EPA	No unacceptable noise impacts observed to date.
Overburden waste dumps	To ensure that the final overburden dumps are stable and support a self-sustaining ecosystem.	Commitment 11 The Proponent will design and operate the overburden waste dumps such that they are stable and resistant to erosion, to the satisfaction of the EPA and DME.	EPA, DME	DME approval of waste dump design via approved NOI.
Tailings Storage Facility	To design, construct and operate an environmentally sound TSF.	Commitment 12 The Proponent will design and operate the tailings storage facility in accordance with the requirements of the EPA and DME to ensure that the tailings storage facility and evaporation ponds do not result in unacceptable impacts to the existing groundwater regime.	EPA, DME	Technical details on the design of TSF and evaporation ponds approved by the DME, DEP and WRC for the MM Stage 1 Project. The design of these facilities will be modified due to the Expansion Project. The modified design will be submitted to DME, DEP and WRC for approval.
Design of the solid and liquid waste disposal facilities.	To ensure the integrity of the solid and liquid waste disposal facilities.	Commitment 13 Prior to the construction and operation of the tailings dam and the evaporation pond, the Proponent will undertake the following: • A more detailed assessment of tailings solids and liquids geochemistry, including predicted compositions relevant to environmental guidelines and standards. This assessment will focus on Total Dissolved Solids, major ions and metals (via an elemental analysis). • An assessment of the predicted particle form and geotechnical characteristics of the tailings, including settling characteristics, and settled and compacted permeabilities. • A more detailed evaluation of potential alternative tailings storage options.	EPA, DME, WRC	Considerable amount of work was undertaken during the detailed design of the tailings dams and evaporation ponds for the MM Stage 1 Project. This work addressed all of the issues covered by this commitment and has been reviewed and approved by the DME, DEP and WRC. This work is being reviewed and updated to incorporate the Expansion Project.

Murrin Murrin Stage 2 Expansion (1229) - commitments (***cont'd***)

Issue	Objective	Commitment	To Whose Satisfaction	Status
Groundwater monitoring	To monitor the impacts of the construction and operation of the waste disposal facilities on local groundwater resources.	Commitment 14 The Proponent will design and instal a groundwater monitoring programme up- and down-gradient of the tailings dam and the evaporation ponds prior to the construction of these facilities. The monitoring programme will be designed and operated to the satisfaction of the DME, DEP and WRC	EPA, DME, Water & Rivers Commission	Groundwater monitoring programmes have been established in the vicinity of the TSF, evaporation ponds, borefields and calcrete quarry for the MM Stage 1 Project. These programmes have been reviewed and approved by DME, DEP and WRC as part of the Project's EMP. Continuing compliance with the WRC Groundwater Well Licence Conditions. These programmes will be reviewed and updated to incorporate the Expansion Project.
Pastoral activities	To minimise the impact on existing pastoral activities.	Commitment 15 The Proponent will minimise the impact of the Project on pastoral activities and ensure that pastoral water supplies in the Project Area are maintained.	Pastoral lease holders, Water & Rivers Commission	Ongoing.
Aboriginal heritage	To avoid disturbance of Aboriginal sites.	Commitment 16 The Proponent will comply with the provisions of the *Aboriginal Heritage Act* 1972-1980.	Department of Aboriginal Affairs	Ongoing.
Operation Risks	To minimise the risks associated with plant operations.	Commitment 17 The following commitments are made relating to the plant operations: • hazardous chemicals and fuel storage areas will be bunded, and constructed in accordance with AS1940 – 1933; • systems will be installed (either as procedures or by design) that would ensure shutdown following a release of either hydrogen or natural gas; • rigorous procedures will be in place to prevent air ingress into vessels containing either natural gas or hydrogen, at either plant start-up or shutdown; • the flare exhaust stack will be sited such that there is no potential for off-site thermal radiation effects and at a height sufficient to ensure adequate dispersion of toxic emissions; and • a hazard and operability study (HAZOP) will be conducted during the detailed design of the plant processing facilities.	EPA and DME	The design of the MM Stage 1 plant has incorporated these safety features. Numerous hazard and operability studies have been conducted during the design and current commissioning. This work will be reviewed and updated to incorporate the Expansion Project. Ongoing review of safety.

Murrin Murrin Stage 2 Expansion (1229) - commitments (*cont'd*)

Issue	Objective	Commitment	To Whose Satisfaction	Status
Fauna	To ensure that adequate information is available for the purposes of managing the Project, workforce education and workforce induction.	Commitment 18 The Proponent will undertake additional fauna studies (including subterranean fauna surveys) to ensure that adequate information is available for the purposes of managing the Project as well as educating the workforce. The scope of these studies will be determined prior to the commencement of the construction phase in consultation with the DEP, CALM and the WA Museum, and will be undertaken to meet the requirements of the EPA. Survey results will also be provided to Environment Australia.	EPA with advice from CALM	Studies of the approved MM Stage 1 Project Area have been completed and approved by CALM. Further studies of the areas to be affected by the Expansion Project have been completed. Surveys for subterranean fauna to be undertaken in November 1998. The survey results and any required management measures will be supplied to the DEP as soon as possible following the completion of the survey.
Atmospheric Emissions	To ensure that atmospheric emissions comply with specified criteria.	Commitment 19 The Proponent will specify emissions criteria in tender documents for the supply of equipment for the Plant. Compliance testing will be carried out by the Proponent during the commissioning of the Plant to confirm that the emissions from plant equipment are within the specified limits. This commitment will be implemented to meet the requirements of the EPA.	EPA	Emissions criteria have been specified in tender documents. Ongoing.
Solid and Liquid Waste Disposal Facilities	To ensure review of the operation of the TSF and evaporation ponds.	Commitment 20 The Proponent will prepare a report on the development and performance of the waste disposal facilities (i.e. TSF and evaporation ponds) after five years of operation.	EPA	Facilities are yet to be commissioned.
New Commitments				
Murrin Murrin Aboriginal Environmental Liaison Committee	To ensure community concerns are known and that the community can assist with the development of suitable environmental management practices.	Commitment 21 The Murrin Murrin Aboriginal Environmental Liaison Committee will continue to meet at a frequency determined by the Committee until the Committee considers that it is no longer required.	EPA	New Commitment.
Significant Fauna	To ensure the protection of significant fauna in the borefields.	Commitment 22 The Proponent will undertake the construction, operation and decommissioning of the Project in a manner that minimises disturbance to the Malleefowl nest in the Granite Borefield. This will be undertaken in consultation with CALM.	EPA, on advice from CALM	New Commitment.

Murrin Murrin Stage 2 Expansion (1229) - commitments (***cont'd***)

Issue	Objective	Commitment	To Whose Satisfaction	Status
Vegetation	To minimise the impact of the borefield operation on the surrounding vegetation.	Commitment 23 The Proponent will conduct a vegetation monitoring programme for the additional borefields from which the water for the Expansion Project will be sourced as these borefields are developed. This will be undertaken to the satisfaction of the EPA, on advice from CALM, DEP and WRC.	EPA, on advice from DEP and CALM	New Commitment.
Groundwater	To minimise the impact of the borefield operation on other users in the region	Commitment 24 The Proponent will progressively extend the groundwater monitoring programme currently being implemented at the Roy Valais Borefield to include the Sullivan, Station, Charlie and Granite Borefields as they are developed. This will be undertaken in accordance with the WRC Groundwater Well Licence Conditions and to the satisfaction of the EPA on advice from WRC and DEP.	EPA	New Commitment.
Rehabilitation	Optimise rehabilitation of the TSF.	Commitment 25 The Proponent will set aside an area of tailings to use for rehabilitation trials, with the aim of testing methods of rehabilitating the tailings. These trials will be undertaken in consultation with DME, DEP and CALM and will commence following the selection of the final tailings storage method and the production of sufficient tailings for the trails.	EPA, DME	New Commitment.
Lakes	To minimise impacts on lake systems.	Commitment 26 The Proponent will not discharge any solid or liquid waste from the Expansion project into Lake Carey or any other lake system in the area.	EPA	New Commitment
Lake Carey - fringing vegetation	To ensure that adequate information is available for the purposes of managing the Project.	Commitment 27 The Proponent will undertake further investigations to determine if *Halosarcia* "Angel Fish Island" ms occurs at any additional locations within the Murrin Murrin East project Area. These investigations may be undertaken in cooperation with other mining companies operation in the vicinity of Lake Carey.	EPA, on advice from DEP and CALM	New Commitment

Issue	Objective	Commitment	To Whose Satisfaction	Status
Vegetation	To minimise the impact of the borefield operation on the surrounding vegetation.	Commitment 28 Prior to the borefields being developed, the Proponent will: • review the vegetation mapping for the proposed borefield areas; • identify significant vegetation communities which have the potential to be affected by groundwater drawdown; • design and implement a vegetation monitoring programme for these communities; and • develop contingency measures to minimise any impacts on these communities should the monitoring programme identify that the borefield operation is resulting in unacceptable impacts on these communities.	DEP, WRC and CALM	New Commitment
Groundwater	To maintain the Leonora town water supply.	Commitment 29 The Proponent will undertake further consultation with the Water Corporation prior to the development of the Station Creek Borefield regarding management of the potential impacts on Leonora town water supply. This consultation will be undertaken in conjunction with the WRC and the DEP, and agreement reached on the monitoring and mitigative actions to be undertaken to the satisfaction of the EPA, the WRC, and the Water Corporation.	EPA, WRC and the Water Corporation.	New Commitment

Abbreviations

EPA	Environmental Protection Authority
DEP	Department of Environmental Protection
WRC	Water & Rivers Commission
CALM	Department of Conservation & Land Management
DME	Department of Minerals & Energy

Attachment 1 to Ministerial Statement 506

Section 45C change to proposal

Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion

Mr Brian Bell
for Minara Resources Ltd
Suite 7, The Russell Centre
159 Adelaide Terrace
EAST PERTH WA 6004

Dear Mr Bell

PROPOSED MODIFICATION TO PROPOSAL – MURRIN MURRIN NICKEL COBALT PROJECT – PIT 2/3 AS A TAILINGS STORAGE FACILITY (STATEMENT 506)

Under Section 45C of the *Environmental Protection Act 1986* I am able to approve changes to a proposal, without a revised proposal being submitted to the EPA, when it is considered that the changes will not have a significant adverse environmental impact.

I understand that the changes to the proposal requested, namely, the use of Pit2/3 for periodic tailings disposal, will not result in additional significant adverse impacts on the environment.

Approval is therefore granted under Section 45C of the *Environmental Protection Act 1986* for the requested changes detailed in your letters. You are reminded that this approval relates to environmental requirements in Statement 506 and does not replace any responsibilities you may have for seeking approvals from other government agencies.

Yours sincerely

Signed by

Walter Cox
CHAIRMAN

31 January 2005

Attachment 2 to Ministerial Statement 506

Section 45C change to proposal

Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion

ATTACHMENT TO STATEMENT 506 – CHANGE TO DESCRIPTION OF PROPOSAL

MURIN MURRIN PROPOSED HEAP LEACH PROJECT

Proposal: Stage 2 Expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation (Stage 1), 60 kilometres east of Leonora as documented in schedule 1 of Statement 506.

The Stage 2 expansion of the project includes the mining of additional ore; an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Proponent: Minara Resources Ltd (formerly Anaconda Operations Pty Ltd)

Change: The construction and operation of a Heap Leach Facility located south-east of the existing Murrin Murrin processing plant (approximate coordinates GDA 391400mE, 6815800mE) as shown in Figure 1.

From:
Modified from the Key Characteristics Table (1229) Schedule 1 of Statement 506

ELEMENT	QUANTITIES/ DESCRIPTION	
	Design	**Maximum Capacity**
Life of Project (Indicative)	~ 30 years	
Inputs		
Nickel Cobalt ore (Mtpa)	10	11
Calcrete[1] (Mtpa)	3.9	4.3
Elemental Sulphur (Mtpa)	1.4	1.9[2]
Process Water (ML/d)	Up to 88	Up to 97[3]
Natural Gas (TJpd)	40	90
Outputs[4]		
Products		
Nickel Metal Briquettes (tpa)	115,000	126,500
Cobalt Metal Briquettes (tpa)	11,000	12,000
Cobalt Powder (tpa)	11,000	12,000
Cobalt Cathode (if electrowinning is used) (tpa)	11,000	12,000
Cobalt Sulphate Crystals (tpa)	22,000	24,000
Mixed Nickel Cobalt Sulphide Powder (tpa)	250,000	275,000
Nickel Powder (tpa)	115,000	126,500
Nickel Cathode (if electrowinning is used) (tpa)	115,000	126,500
Ammonia Sulphate Crystals (tpa)	400,000	440,000
Wastes and Emissions		
Tailings Solids (Mtpa) (including gypsum)	13.3	14.5
Waste from Dewatering Operations (kL/d)	Up to 500	Up to 500
Sulphur Dioxide[5] (g/s)	329	ND
Oxides of Nitrogen[5] (g/s)	27.3	ND
Carbon dioxide (Mtpa)	1.14	ND
Waste Dumps- Indicative Characteristics		
Area disturbed by waste dumps and ore stockpiles at MME (km^2)	25	
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin North and South (km^2)	15	
Height of waste dumps	20m	

Tailings Storage Facility and Evaporation Ponds- Indicative Characteristics	
Area of disturbance TSF (km^2) Area of Disturbance Evaporation Ponds (km^2) Groundwater criteria	Up to 23 Up to 12 Designed to: • Comply with the DoIR guidelines; • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.
Pits- Indicative Characteristics	
Area to be disturbed at Murrin Murrin East (km^2) Area to be disturbed at Murrin Murrin North and South (km^2) Depth of pits	17 8.5 Estimated max. depth of 50m
Calcrete Quarry- Indicative Characteristics	
Area of disturbance (km^2)	15

Notes:

Figures presented in this table for waste dumps, pits, calcrete quarry and the TSF and evaporation ponds are indicative only and final figures will be determined during detailed engineering in consultation with the DoIR.

1. The quantity of calcrete required will vary as a function of its calcium carbonate content. A high calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neturalisation requirements. The estimated value of 3.9Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400tpd sulphuric acid plants for the Expansion Project to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000tpa ammonia plant for the Expansion project to enable supply to third party users
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

ND Not Defined

To:

ELEMENT	QUANTITIES/ DESCRIPTION	
	Design	**Maximum Capacity**
Life of Project (Indicative)	~ 30 years	
Inputs		
Nickel Cobalt ore (Mtpa)	10	11
Calcrete[1] (Mtpa)	3.9	4.3
Elemental Sulphur (Mtpa)	1.4	1.9[2]
Process Water (ML/d)	Up to 88	Up to 97[3]
Natural Gas (TJpd)	40	90
Outputs[4]		
Products		
Nickel Metal Briquettes (tpa)	115,000	126,500
Cobalt Metal Briquettes (tpa)	11,000	12,000
Cobalt Powder (tpa)	11,000	12,000
Cobalt Cathode (if electrowinning is used) (tpa)	11,000	12,000
Cobalt Sulphate Crystals (tpa)	22,000	24,000
Mixed Nickel Cobalt Sulphide Powder (tpa)	250,000	275,000
Nickel Powder (tpa)	115,000	126,500
Nickel Cathode (if electrowinning is used) (tpa)	115,000	126,500
Ammonia Sulphate Crystals (tpa)	400,000	440,000
Wastes and Emissions		
Tailings Solids (Mtpa) (including gypsum)	13.3	14.5

Waste from Dewatering Operations (kL/d)	Up to 500	Up to 500
Sulphur Dioxide[5] (g/s)	329	ND
Oxides of Nitrogen [5] (g/s)	27.3	ND
Carbon dioxide (Mtpa)	1.14	ND
Waste Dumps- Indicative Characteristics		
Area disturbed by waste dumps and ore stockpiles at MME (km^2) Area disturbed by waste dumps and ore stockpiles at Murrin Murrin North and South (km^2) Height of waste dumps	25 15 20m	
Tailings Storage Facility and Evaporation Ponds- Indicative Characteristics		
Area of disturbance TSF (km^2) Area of Disturbance Evaporation Ponds (km^2) Groundwater criteria	Up to 23 Up to 12 Designed to: • Comply with the DoIR guidelines; • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.	
Pits- Indicative Characteristics		
Area to be disturbed at Murrin Murrin East (km^2) Area to be disturbed at Murrin Murrin North and South (km^2) Depth of pits	17 8.5 Estimated max. depth of 50m	
Calcrete Quarry- Indicative Characteristics		
Area of disturbance (km^2)	15	
Heap Leach Facility		
Total Area of disturbance (ha) Construction Period Project Life	40 6 months 30 years	
Characterisitcs		
Leach pad size and construction	24.64 ha Compacted clay base with a single 1mm HDPE liner with coarse material over liner	
Stockpiles	1 Mt scats (current stockpile) + 0.25 Mt /a	
Irrigation system	HDPE pipes with drippers	
Leachate capture	Herring bone HDPE piping arrangement collected into a main HDPE piping header and returned into either the PLS or ILS ponds via a "w" drain arrangement	
Pregnant Liquor Transport to plant	Pumped through HDPE or rubber lined carbon steel pipe in HDPE lined corridor	
Barren liquor	Returned from plant in HDPE or rubber lined carbon steel pipe in HDPE lined corridor	
Acidification feed	Pumped from the existing acid storage facilities to the agglomerator	
Storage	Five ponds, 6.28 ha in total. Ponds for pregnant liquor solution, intermediate liquor solution, CCD1 overflow, barren liquor and storm water containment will be installed	
Drainage	A diversion drain upstream of the heap leach pad will redirect runoff to a sediment trap and through a culvert (under the haulage road) to the south east. Runoff from the conveyor corridor will be collected in storm water pond	
Infrastructure		
Rate of processing	0.5 Mtpa (Years 1, 2 & 3); then 0.25 Mtpa (i.e. rate of scat production)	

Haul roads and access	No change to existing roads
Power requirements	500 kW produced from existing gas-fired power plant Overhead cabling to be located adjacent to the heap leach pad corridor
Water requirements	No additional abstraction required
Groundwater monitoring bores	New bores will be drilled on site to monitor groundwater quality near the HLF
Modifications to process plant	None required
Changes to hydrocarbon storage	None required
Changes to personnel	Additional five
Changes to camp facilities	None required
Recovery	Overall Ni and Co recovery from heaps expected to be about 70%
Waste Residue	
Volume	About 0.345 Mtpa (Years 1 & 2); then 0.1725 Mtpa (69% of scat volume)
Rehabilitation	Heaps to be rehabilitated *insitu*

Notes:

Figures presented in this table for waste dumps, pits, calcrete quarry and the TSF and evaporation ponds are indicative only and final figures will be determined during detailed engineering in consultation with the DoIR.

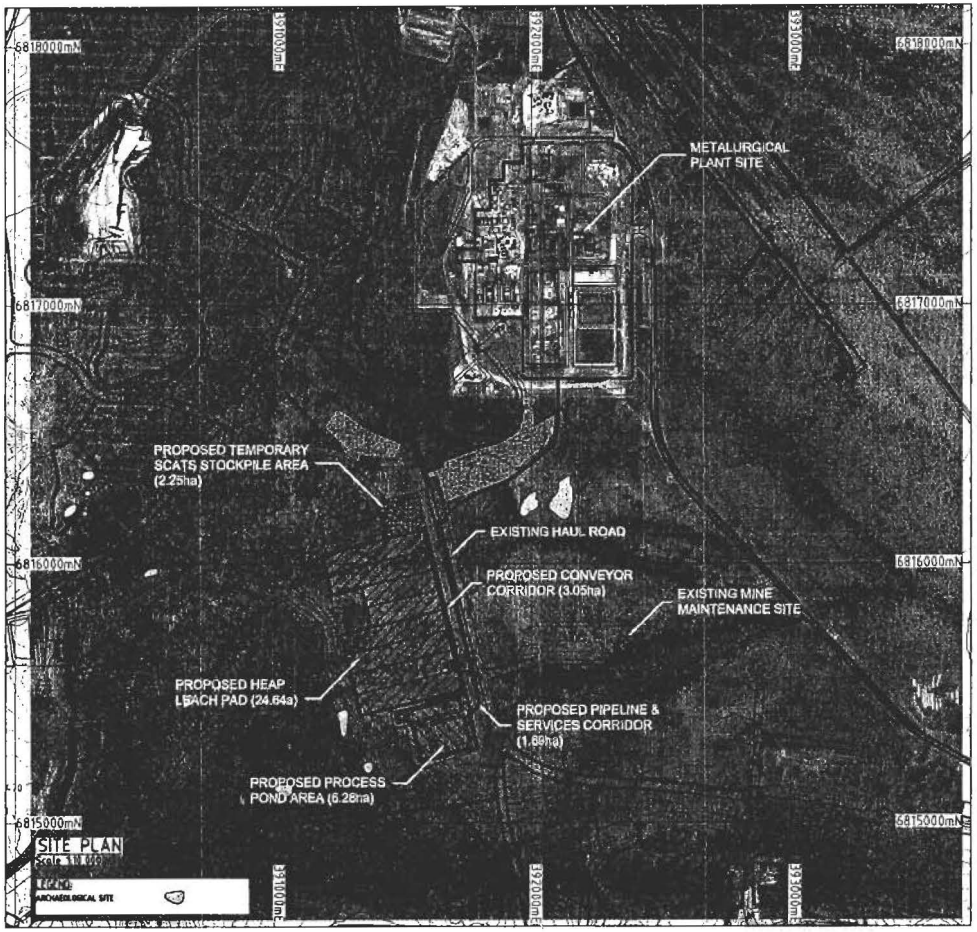
1. The quantity of calcrete required will vary as a function of its calcium carbonate content. A high calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neturalisation requirements. The estimated value of 3.9Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400tpd sulphuric acid plants for the Expansion Project to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000tpa ammonia plant for the Expansion project to enable supply to third party users
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

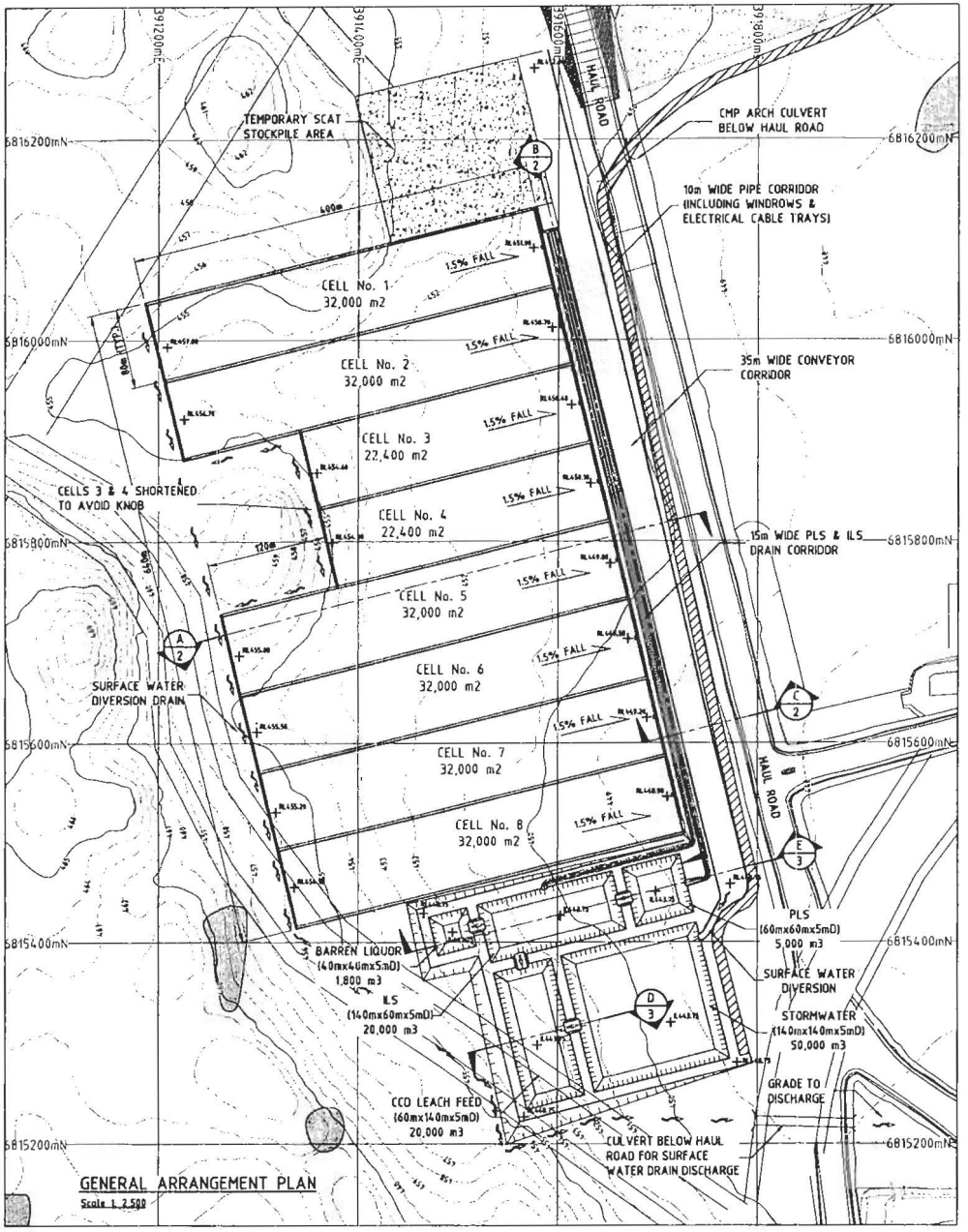
ND Not defined

Approval Date: 8 Dec 2005

NOTES:

1. ALL DIMENSIONS IN METRES U.N.O
2. CONTOUR INTERVAL IS 1 m.
3. ELEVATIONS TO AUSTRALIAN HEIGHT DATUM (mAHD) & COORDINATE DATUM GDA94, PROJECTION MGA, ZONE51
4. PROJECT SITE AREA SURVEYED BY MINARA RESOURCES.
5. EXISTING SERVICES ARE NOT SHOWN. CONTRACTOR TO SATISFY HIMSELF TO LOCATION, DEPTH AND/OR HEIGHT OF ALL UNDERGROUND AND OVERHEAD SERVICES PRIOR TO CONSTRUCTION.
6. CONTRACTOR'S ATTENTION IS DRAWN TO AREAS OF ARCHAEOLOGICAL INTEREST IN THE VICINITY OF THE PROJECT – REFER TO MINARA RESOURCES ENVIRONMENTAL DEPARTMENT FOR SPECIAL REQUIREMENTS.
7. ROUTING OF ALL ACCESS ROADWAYS AND CLEARING LIMITS TO BE APPROVED BY MINARA RESOURCES IN ADVANCE OF WORKS.
8. ACTUAL CUT BATTER SLOPES TO BE DETERMINED BY ENGINEER IN FIELD DEPENDING ON GEOLOGICAL CONDITIONS ENCOUNTERED.





GENERAL ARRANGEMENT PLAN
Scale 1 : 2 500

REVISION	DESCRIPTION	INITS	DATE	INITS	DATE
-	-	-	-	-	-
-	-	-	-	-	-
B	ISSUED FOR NOTICE OF INTENT	-	-	-	-
A	ISSUED FOR CLIENT REVIEW & COMMENT	-	-	-	-
		CHECKED		APPROVED	

MINARA RESOURCES

Golder Associates

1 HAVELOCK STREET
WEST PERTH, WA 6005 AUSTRALIA
PH (08) 9213 7600 FAX (08) 9213 7611
EMAIL: goldenpr@golder.com.au

CLIENT	MINARA RESOURCES PTY LTD		
DRAWN D.HORNBY	DATE APRIL 2005	DRAWING CHECK A.LOWRY	DATE APRIL 2005
DESIGNED A.LOWRY	DATE APRIL 2005	DESIGN CHECK D.WILLIAMS	DATE APRIL 2005
AUTHORISED	DATE	SCALE AS SHOWN	

PROJECT: MURRIN MURRIN HEAP LEACH PAD

DRAWING TITLE: LOCATION PLAN AND GENERAL ARRANGEMENT PLAN

PROJECT No: 05641108 | NOI-FIGURE 1 | B

18/05/2005

AUTOCAD FILE: J:\Jobs\05\MMING\05641108_Minara Heap Leach Location\CAD\Figures\05641108_NOI-FIGURE_01_REVB.dwg
PLOT SCALE 1:1

A1

Attachment 3 to Statement 506

Change to Proposal

Proposal: **Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion, 60 km east of Leonora**

Proponent: Minara Resources Ltd

Change: Changes to Schedule 1, Key Characteristics Table relating to the continued operation of the Heap Leach Facility allowing ore processing to remain at 0.5 Mtpa for 'life of mine'

Element	**Description of proposal**	**Description of approved change to proposal**
Life of Project (Indicative)	~30 years	~30 years
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete[1] (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Nickel Metal Briquettes (tpa)	126,500	**714,500 tpa (Maximum Capacity of Nickel, Cobalt, and Mixed Products)**
Cobalt Metal Briquettes (tpa)	12,000	
Cobalt Powder (tpa)	12,000	
Cobalt Cathode (if electrowinning is used) (tpa)	12,000	
Cobalt Sulphate Crystals (tpa)	24,000	
Mixed Nickel Cobalt Sulphide Powder (tpa)	275,000	
Nickel Powder (tpa)	126,500	
Nickel Cathode (if electrowinning is used) (tpa)	126,500	
Ammonia Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5
Waste from Dewatering Operations (kL/d)	Up to 500	Up to 500
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14

Element	**Description of proposal**	**Description of approved change to proposal**
Waste Dumps – Indicative Characteristics		
Area disturbed by waste dumps and ore stockpiles Murrin Murrin east (km^2)	25	25
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin North and South (km^2)	15	15
Height of Waste Dumps (m)	20	20
Tailings Storage Facility and Evaporation Ponds – Indicative Characteristics		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23
Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Groundwater Criteria	• Comply with DoIR guidelines • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.	• Comply with Department of Mines and Petroleum guidelines • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.
Pits – Indicative Characteristics		
Area to be disturbed at Murrin Murrin East (km^2)	17	17
Area to be disturbed at Murrin Murrin North and South (km^2)	8.5	8.5
Depth of pits	Estimated max. 50 m	Estimated max. 50 m
Calcrete Quarry – Indicative Characteristics		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance (ha)	40	40
Construction Period	6 months	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Project Life	30 years	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**

Element	**Description of proposal**	**Description of approved change to proposal**
Characteristics		
Leach Pad size and construction	24.64 ha Compacted clay base with a single 1 mm HDPE liner with coarse material over liner.	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Stockpiles	1 Mt scats (current stockpile) + 0.25 Mtpa	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Irrigation System	HDPE pipes with drippers	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Leachate capture	Herring bone HDPE piping arrangement collected into a main HDPE piping header and returned to either the PLS or ILS ponds via a 'w' drain arrangement	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Pregnant Liquor Transport to Plant	Pumped through HDPE or rubber lined carbon steel pipe in HDPE lined corridor	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Barren Liquor	Returned from plant in HDPE or rubber lined steel pipe in HDPE lined corridor	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Acidification Feed	Pumped from the existing acid storage facilities to the agglomerator	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Storage	Ponds for pregnant liquor solution, intermediate liquor solution, overflow from counter current decantation tank 1 (CCD1), barren liquor and storm water containment	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Drainage	A diversion drain upstream of the heap leach pad redirects runoff to a sediment trap and through a culvert (under the haulage road) to the south east. Runoff from the conveyor corridor will be collected in storm water pond.	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Infrastructure		
Rate of Processing	0.5 Mtpa (Years 1, 2 and 3); then 0.25 Mtpa (i.e. rate of scat production).	**0.5 Mtpa**
Haul Roads and Access	ND	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Power Requirements	500 kW produced from existing gas-fired power plant. Overhead cabling to be located adjacent to the heap leach pad corridor.	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**

Element	**Description of proposal**	**Description of approved change to proposal**
Water Requirements	No additional abstraction required	**REMOVED AS COVERED UNDER THE *RIGHTS IN WATER AND IRRGATION ACT 1914***
Groundwater Monitoring Bores	New bores will be drilled on the site to monitor groundwater quality near the HLF	**REMOVED AS COVERED UNDER PART V OF THE *ENVIRONMENTAL PROTECTION ACT 1986***
Modifications to Process Plant	ND	**REMOVED AS COVERED UNDER PART V OF THE *ENVIRONMENTAL PROTECTION ACT 1986***
Changes to Hydrocarbon Storage	ND	**REMOVED AS COVERED UNDER PART V OF THE *ENVIRONMENTAL PROTECTION ACT 1986***
Changes to Personnel	ND	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Changes to Camp Facilities	ND	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Recovery		
Percentage	Overall Ni and Co recovery from heaps expected to be about 70%	**REMOVED AS NOT ENVIRONMENTALLY RELEVANT**
Waste Residue		
Volume	About 0.345 Mtpa (Years 1 & 2); then 0.1725 Mtpa (69%) of scat volume	**0.375 Mtpa**
Rehabilitation	Heaps to be rehabilitated *in situ*	**REMOVED AS COVERED UNDER PART V OF THE *ENVIRONMENTAL PROTECTION ACT 1986***

Notes:

1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

ND Not defined

Dr Paul Vogel
CHAIRMAN
Environmental Protection Authority
under delegated authority

Approval date: 24 January 2012

Attachment 4 to Statement 506

Change to Proposal

Proposal: **Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion, 60 km east of Leanora**

Proponent: Minara Resources Ltd

Change: Changes to Schedule 1, Key Characteristics Table relating to the clearing of an additional 300 ha of vegetation to allow for the development of additional Pits, Waste Dumps and Ore Stockpiles.

Element	**Description of proposal**	**Description of approved change to proposal**
Life of Project (Indicative)	~30 years	~30 years
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete[1] (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Maximum Capacity of Nickel, Cobalt, and Mixed Products (tpa)	714,500	714,500
Ammonia Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5
Waste from Dewatering Operations (kL/d)	Up to 500	Up to 500
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14
Waste Dumps – Indicative Characteristics		
Area disturbed by waste dumps and ore stockpiles Murrin Murrin east (km^2)	25	25
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin North and South (km^2)	15	**Removed, incorporated into new consolidated element for Pits, Waste Dumps and Ore Stockpiles**
Height of Waste Dumps (m)	20	20
Tailings Storage Facility and Evaporation Ponds – Indicative Characteristics		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23

Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Element	**Description of proposal**	**Description of approved change to proposal**
Groundwater Criteria	• Comply with DoIR guidelines • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.	• Comply with Department of Mines and Petroleum guidelines • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.
Pits – Indicative Characteristics		
Area to be disturbed at Murrin Murrin East (km^2)	17	17
Area to be disturbed at Murrin Murrin North and South (km^2)	8.5	**Removed, incorporated into new consolidated element for Pits, Waste Dumps and Ore Stockpiles**
Depth of pits **(m)**	Estimated max. 50 m	Estimated max. 50 m
Pits, Waste Dumps and Ore Stockpiles		
Area to be disturbed at Murrin Murrin North and South (km^2)	**Not in original statement**	**26.5 – New element from consolidation of pit and waste dump elements relating to Murrin Murrin North and South**
Calcrete Quarry – Indicative Characteristics		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance (ha)	40	40
Infrastructure		
Rate of Processing **(Mtpa)**	0.5	0.5
Waste Residue		
Volume **(Mtpa)**	0.375	0.375

Notes:

1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

List of Figures:

Addition of Figure 5 - Approved additional Mine Pits, Waste Dumps and Ore Stockpile locations, including existing operation footprint.

Dr Paul Vogel
CHAIRMAN
Environmental Protection Authority
under delegated authority

Approval date: 27 March 2013

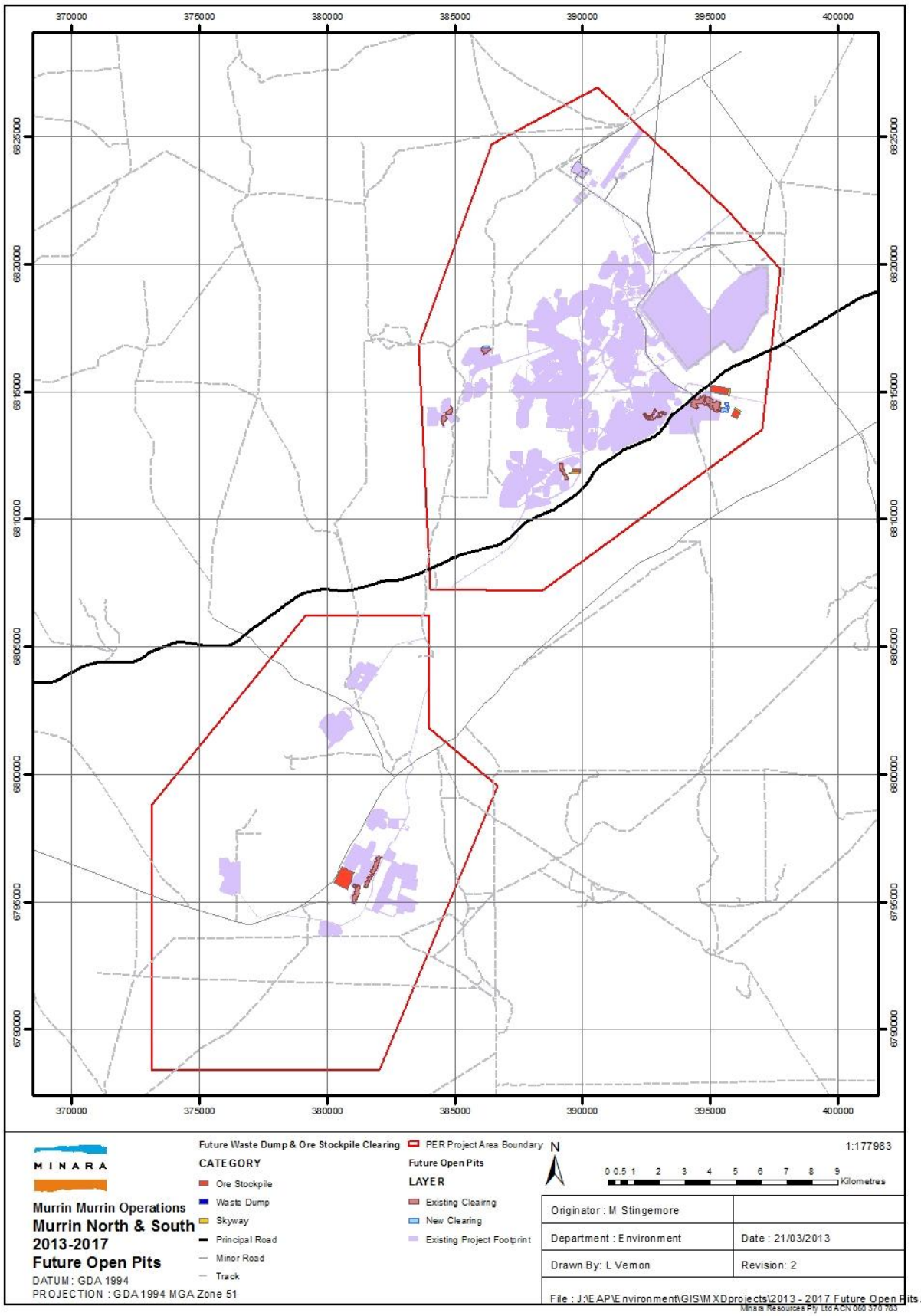


Figure 5 – Approved additional Mine Pits, Waste Dumps and Ore Stockpile locations, including existing operation footprint.

Attachment 5 to Ministerial Statement 506

Change to proposal under s45C of the *Environmental Protection Act 1986*

This Attachment replaces Schedule 1 and Attachments 1 to 4 of Ministerial Statement 506

Proposal: Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora.

Proponent: Minara Resources Pty Ltd.

Changes:

- Removal of Groundwater criteria from the Key Characteristics Table.

Table 1: Summary of the Proposal

Proposal Title	Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora.
Short Description	The proposal is for the Stage 2 expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation, 60 kilometres east of Leonora. The Stage 2 expansion includes the mining of additional ore, an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Table 2: Location and authorised extent of physical and operational elements

Element	**Description of authorised proposal**	**Description of approved change to proposal**
Life of Project (Indicative)	~30 years	~30 years
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete[1] (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Maximum Capacity of Nickel, Cobalt, and Mixed Products (tpa)	714,500	714,500
Ammonium Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5
Waste from Dewatering Operations (kL/d)	Up to 500	Up to 500

Element	Description of authorised proposal	Description of approved change to proposal
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14
Pits, Waste Dumps and Ore Stockpiles		
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin East (km^2)	25	25
Area to be disturbed for pits at Murrin Murrin East (km^2)	17	17
Area disturbed by pits, waste dumps and ore stockpiles at Murrin Murrin North and South (km^2)	26.5	26.5
Height of Waste Dumps (m)	20	20
Depth of pits (m)	Estimated max. 50 m	Up to 50 m
Tailings Storage Facility and Evaporation Ponds		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23
Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Groundwater Criteria	• Comply with Department of Mines and Petroleum guidelines • Prevent surface breakout of saline liquors; and • Prevent the water table outside of the facility from rising to a level shallower than 8m below the ground surface at a distance greater than 250m from the TSF and evaporation ponds.	**Removed as managed under the *Mining Act 1978 and* licence issued under Part V of the *Environmental Protection Act 1986*.**
Calcrete Quarry		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance (ha)	40	40
Infrastructure		
Rate of Processing (Mtpa)	0.5	0.5
Waste Residue		
Volume (Mtpa)	0.375	0.375

Note: Text in **bold** in Table 2 indicates the changes to the proposal.

Notes:
1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

Figures - all previous Figures are replaced by the following:

Figure 1 Murrin Murrin Regional Location
Figure 2 Murrin Murrin Project Layout
Figure 3 Murrin Murrin Project Mining Area Development Envelopes

Inclusion of Table 3 Coordinates defining Murrin Murrin Nickel-Cobalt Project (GDA 1994 MGA Zone 51)

Inclusion of Table 4 Coordinates defining Murrin Murrin Nickel-Cobalt Project Borefield Areas (GDA 1994 MGA Zone 51)

[Signed 20 December 2016]

Robert Harvey
DEPUTY CHAIRMAN
Environmental Protection Authority
under delegated authority

Approval date: _____

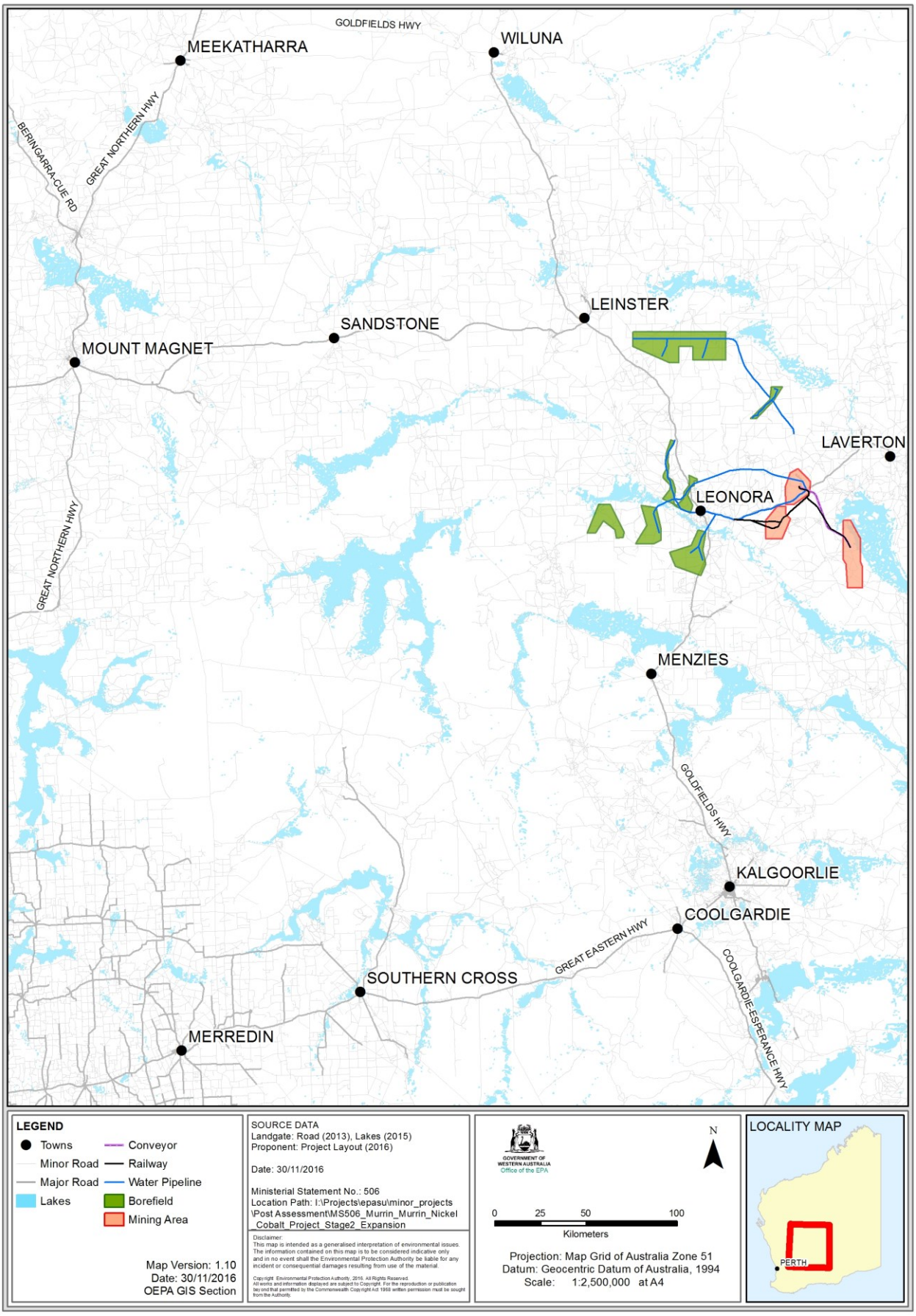


Figure 1 Murrin Murrin Regional Location

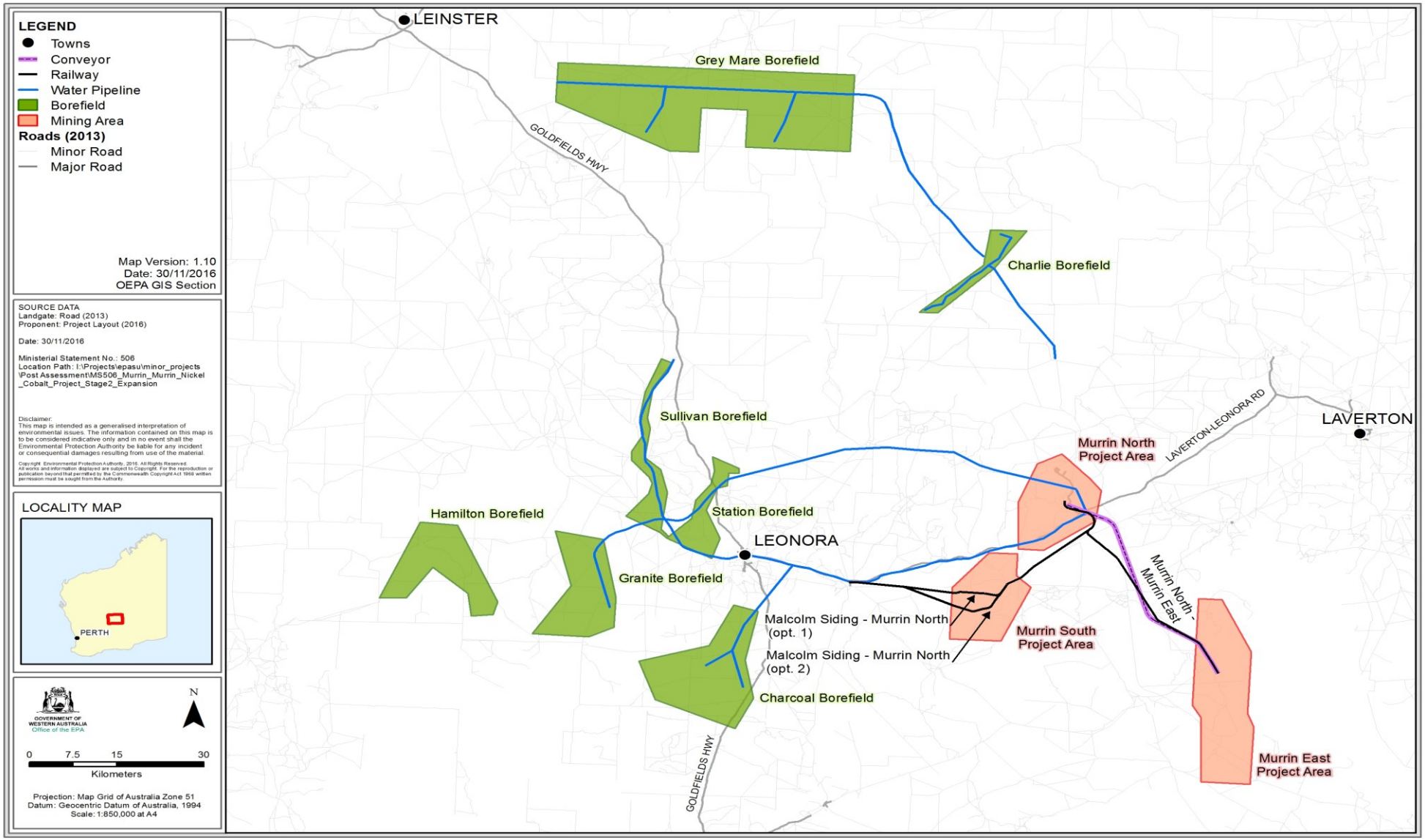


Figure 2 Murrin Murrin Project Layout

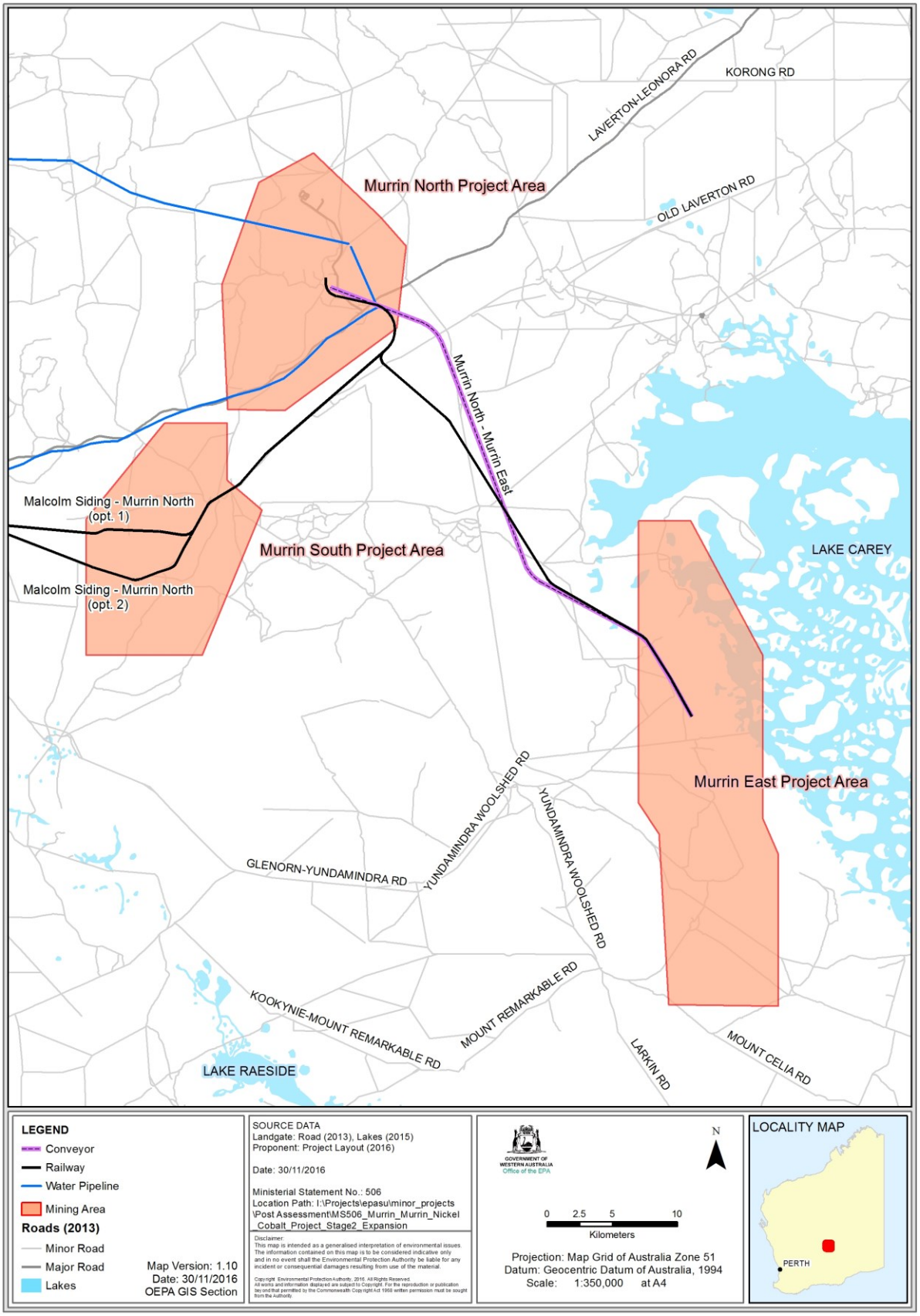


Figure 3 Murrin Murrin Project Mining Area Development Envelopes

Table 3 Coordinates defining Murrin Murrin Nickel-Cobalt Project Mining Areas (GDA 1994 MGA Zone 51)

Coordinate Number	Mining Area Name	Easting	Northing
Murrin East Project Area			
1	Murrin East Project Area	415540	6798690
2	Murrin East Project Area	419556	6798690
3	Murrin East Project Area	425105	6788330
4	Murrin East Project Area	425105	6775810
5	Murrin East Project Area	426268	6773060
6	Murrin East Project Area	426268	6761430
7	Murrin East Project Area	417865	6761540
8	Murrin East Project Area	417125	6774640
9	Murrin East Project Area	415540	6777020
Murrin North Project Area			
1	Murrin North Project Area	390596	6826920
2	Murrin North Project Area	395705	6822060
3	Murrin North Project Area	397720	6819800
4	Murrin North Project Area	397000	6813500
5	Murrin North Project Area	388401	6807170
6	Murrin North Project Area	384012	6807240
7	Murrin North Project Area	383580	6816810
8	Murrin North Project Area	386422	6824690
Murrin South Project Area			
1	Murrin South Project Area	383986	6806190
2	Murrin South Project Area	383986	6801780
3	Murrin South Project Area	386662	6799520
4	Murrin South Project Area	382046	6788380
5	Murrin South Project Area	373157	6788370
6	Murrin South Project Area	373157	6798820
7	Murrin South Project Area	379138	6806190

Table 4 Coordinates defining Murrin Murrin Nickel-Cobalt Project Borefield Areas (GDA 1994 MGA Zone 51)

Coordinate Number	Borefield Name	Easting	Northing
Charcoal Borefield			
1	Charcoal Borefield	335837	6793360
2	Charcoal Borefield	340037	6792260
3	Charcoal Borefield	338337	6782260
4	Charcoal Borefield	340137	6774560
5	Charcoal Borefield	337337	6768260
6	Charcoal Borefield	323337	6773460
7	Charcoal Borefield	320137	6781110
8	Charcoal Borefield	331987	6784910
Charlie Borefield			
1	Charlie Borefield	376029	6871830
2	Charlie Borefield	382277	6871890
3	Charlie Borefield	382278	6871890
4	Charlie Borefield	377428	6864540
5	Charlie Borefield	377212	6864220
6	Charlie Borefield	377128	6864130
7	Charlie Borefield	367742	6854540
8	Charlie Borefield	365857	6854520
9	Charlie Borefield	364650	6854510
10	Charlie Borefield	365412	6855230
11	Charlie Borefield	375216	6864580
12	Charlie Borefield	375360	6865860
13	Charlie Borefield	375392	6866150
14	Charlie Borefield	375812	6869890
Granite Borefield			
1	Granite Borefield	304387	6806860
2	Granite Borefield	312737	6805560
3	Granite Borefield	315487	6793810
4	Granite Borefield	315487	6787760
5	Granite Borefield	311237	6785660
6	Granite Borefield	301537	6785810
7	Granite Borefield	307687	6795910
Grey Mare Borefield			
1	Grey Mare Borefield	300137	6902160
2	Grey Mare Borefield	351138	6902160
3	Grey Mare Borefield	351138	6886560
4	Grey Mare Borefield	333137	6886560
5	Grey Mare Borefield	333137	6894160
6	Grey Mare Borefield	325137	6894160
7	Grey Mare Borefield	325137	6885160
8	Grey Mare Borefield	320137	6885160
9	Grey Mare Borefield	300137	6894160

Coordinate Number	Borefield Name	Easting	Northing
Hamilton Borefield			
1	Hamilton Borefield	281160	6807510
2	Hamilton Borefield	287584	6807180
3	Hamilton Borefield	295202	6791950
4	Hamilton Borefield	294561	6789280
5	Hamilton Borefield	290892	6788820
6	Hamilton Borefield	290044	6793410
7	Hamilton Borefield	283757	6798390
8	Hamilton Borefield	279449	6791910
9	Hamilton Borefield	274871	6791670
Station Borefield			
1	Station Borefield	330649	6823320
2	Station Borefield	335342	6821200
3	Station Borefield	335342	6820160
4	Station Borefield	333609	6820140
5	Station Borefield	333413	6817540
6	Station Borefield	331733	6816930
7	Station Borefield	330089	6812410
8	Station Borefield	332781	6806800
9	Station Borefield	331532	6802630
10	Station Borefield	323611	6806380
11	Station Borefield	323938	6806710
12	Station Borefield	327712	6810570
13	Station Borefield	327953	6812510
14	Station Borefield	327979	6812700
15	Station Borefield	328244	6814320
16	Station Borefield	330643	6817690
17	Station Borefield	331123	6820430
Sullivan Borefield			
1	Sullivan Borefield	320862	6842840
2	Sullivan Borefield	322699	6842040
3	Sullivan Borefield	319748	6836840
4	Sullivan Borefield	319067	6830660
5	Sullivan Borefield	319656	6828510
6	Sullivan Borefield	319017	6822570
7	Sullivan Borefield	321855	6820300
8	Sullivan Borefield	323232	6815700
9	Sullivan Borefield	322768	6810270
10	Sullivan Borefield	322759	6810170
11	Sullivan Borefield	322580	6808170
12	Sullivan Borefield	323938	6806710
13	Sullivan Borefield	323611	6806380
14	Sullivan Borefield	322533	6807460
15	Sullivan Borefield	316360	6810520

Coordinate Number	Borefield Name	Easting	Northing
16	Sullivan Borefield	320049	6815250
17	Sullivan Borefield	320564	6817410
18	Sullivan Borefield	319906	6818680
19	Sullivan Borefield	316844	6821910
20	Sullivan Borefield	316709	6823780
21	Sullivan Borefield	318582	6827330
22	Sullivan Borefield	317751	6830550
23	Sullivan Borefield	318386	6835920

Attachment 6 to Ministerial Statement 506

Change to proposal approved under section 45C of the
Environmental Protection Act 1986

This Attachment replaces Attachment 1 to Attachment 5 of Ministerial Statement 506

Proposal: Murrin Murrin Nickel Cobalt Project Stage 2 Expansion 60km East of Leonora

Proponent: Minara Resources Pty Ltd

Changes:

The change is to amend the authorised extent, including:

- increase the water discharged from dewatering operations (by removing the criteria);
- increase the maximum depth of pits from 50 m to 80 m; and
- increase the maximum height of waste dumps (by removing the criteria).

Table 1: Summary of the Proposal

Proposal Title	Murrin Murrin Nickel Cobalt Project Stage 2 Expansion 60km East of Leonora.
Short Description	The proposal is for the Stage 2 expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation, 60 kilometres east of Leonora. The Stage 2 expansion includes the mining of additional ore, an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Table 2: Location and authorised extent of physical and operational elements

Element	Previously Authorised Extent	Authorised Extent
Life of Project (Indicative)	~30 years	~30 years
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete1 (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Maximum Capacity of Nickel, Cobalt, and Mixed Products (tpa)	714,000	714,000
Ammonium Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5

Element	Previously Authorised Extent	Authorised Extent
Waste from Dewatering Operations (kL/d)	Up to 500	**Removed**
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14
Pits, Waste Dumps and Ore Stockpiles		
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin East (km2)	25	25
Area to be disturbed for pits at Murrin Murrin East (km2)	17	17
Area disturbed by pits, waste dumps and ore stockpiles at Murrin Murrin North and South (km2)	26.5	26.5
Height of Waste Dumps (m)	20	**Removed**
Depth of pits (m)	Up to 50 m	**Up to 80 m**
Tailings Storage Facility and Evaporation Ponds		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23
Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Calcrete Quarry		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance	40	40
Infrastructure		
Rate of Processing (Mtpa)	0.5	0.5
Waste Residue		
Volume (Mtpa)	0.375	0.375

Note: Text in **bold** in Table 2 indicates a change to the proposal.

Notes:
1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

Table 3: Abbreviations

Abbreviation	Term
ha	hectare
km	kilometre
GL	gigalitre

Figures (attached)

Figure 1 Murrin Murrin Regional Location
Figure 2 Murrin Murrin Project Layout
Figure 3 Murrin Murrin Project Mining Area Development Envelopes

Coordinates defining the Approved Total Disturbance Area for the Murrin Murrin Nickel Cobalt Project, are held by the Department of Water and Environmental Regulation (File Number: 1DEWRA-000889).

[Signed 17 September 2018]

Dr Tom Hatton
CHAIRMAN
Environmental Protection Authority
under delegated authority

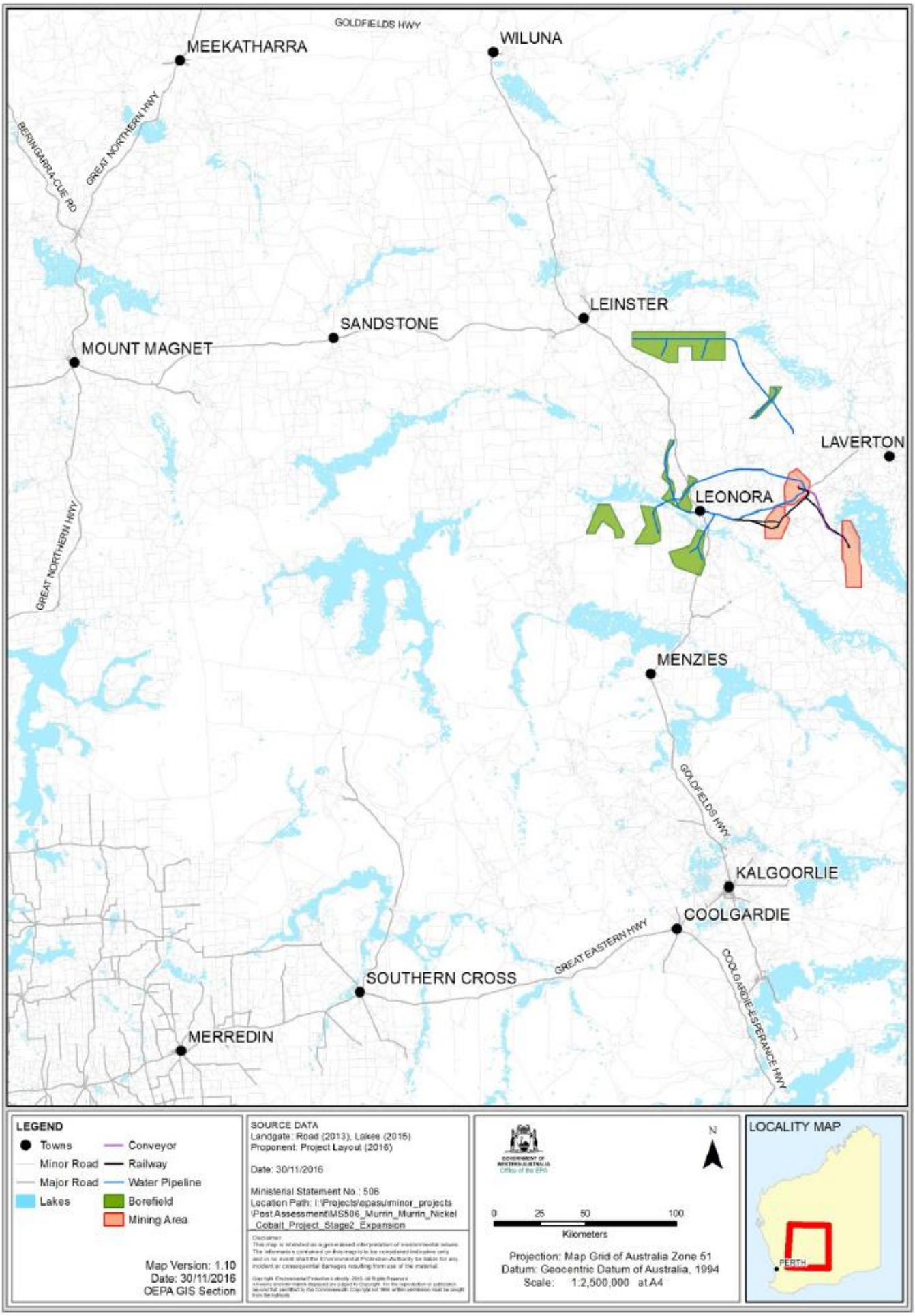


Figure 1 Murrin Murrin Regional Location

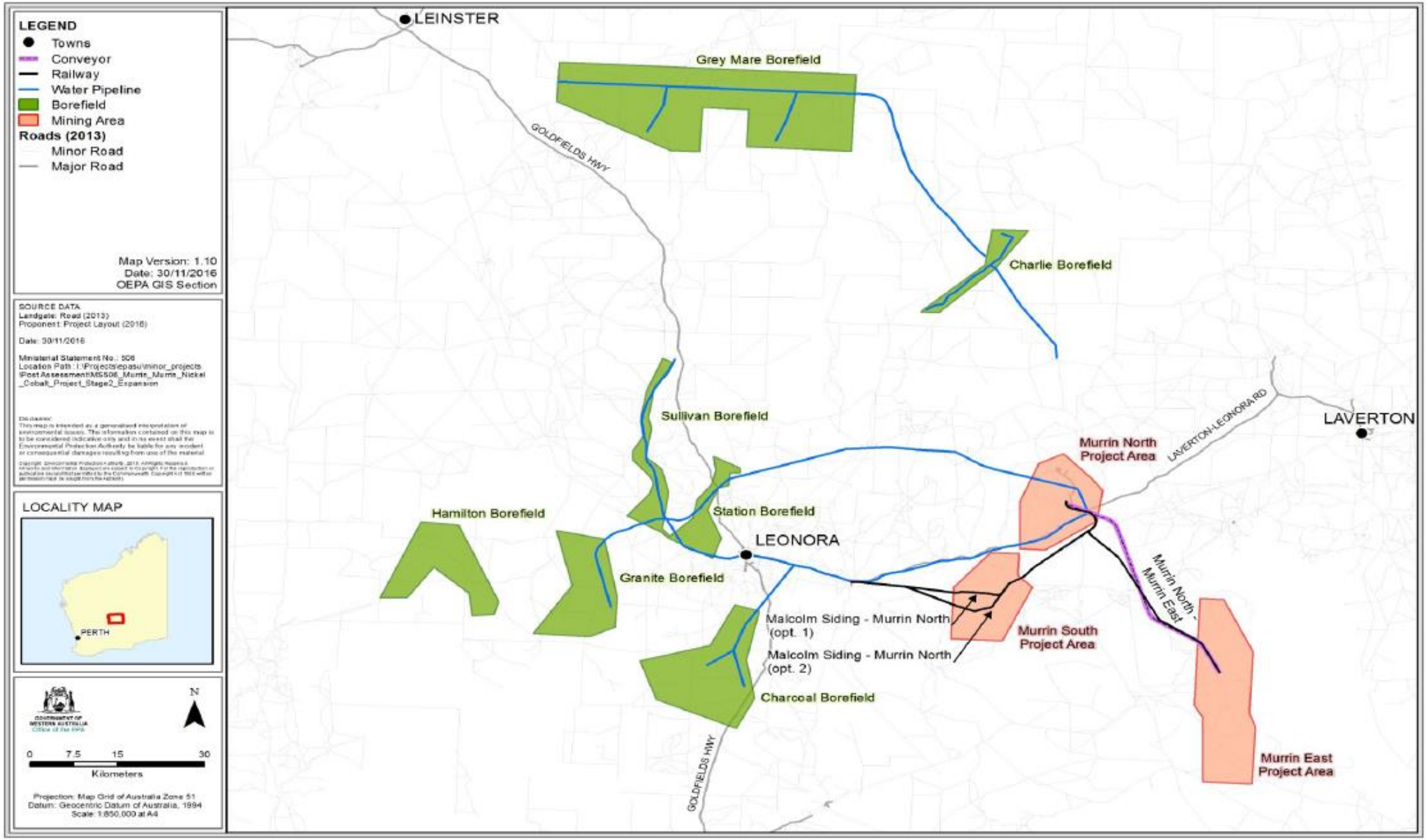


Figure 2 Murrin Murrin Project Layout

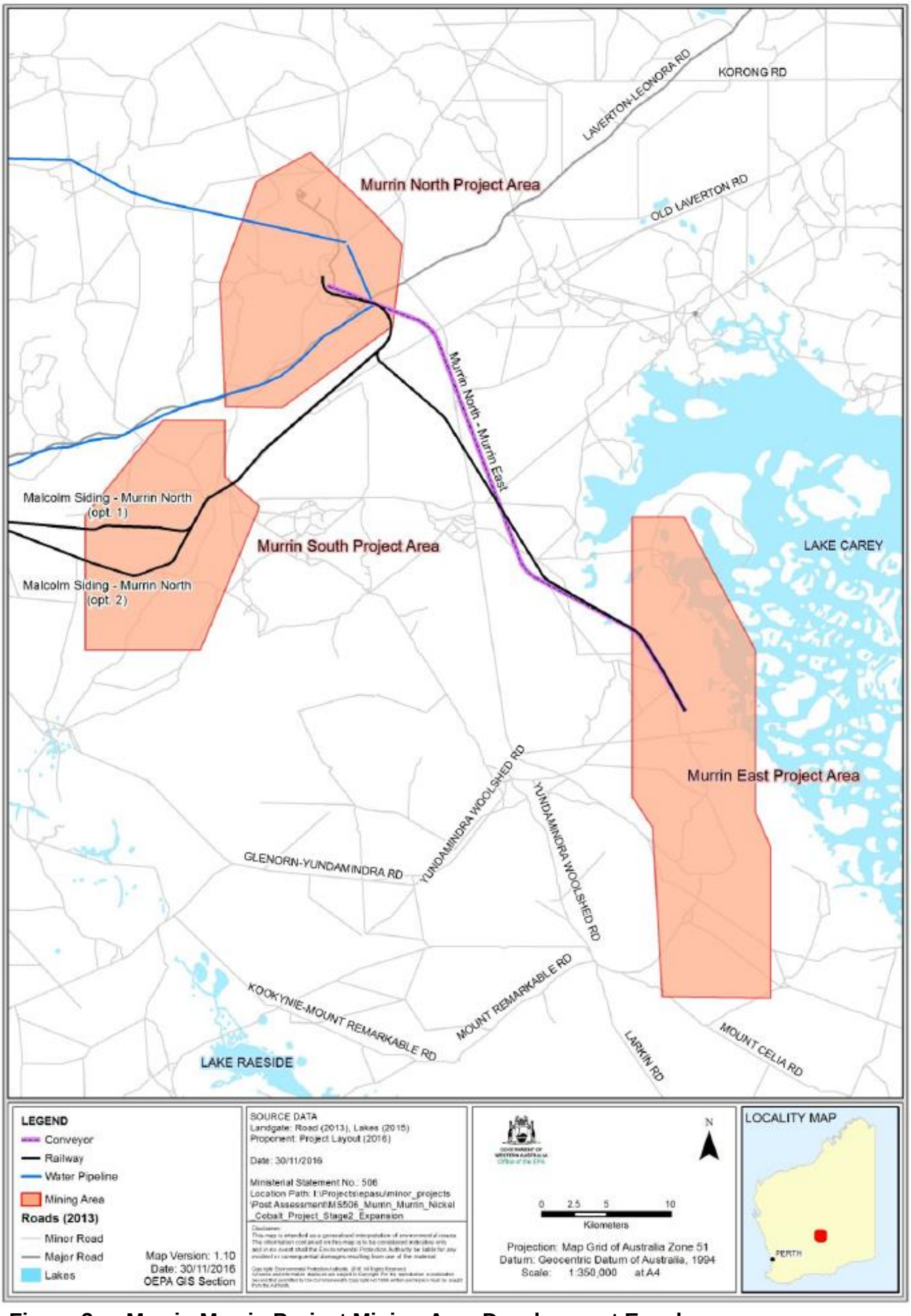


Figure 3 Murrin Murrin Project Mining Area Development Envelopes

Attachment 7 to Ministerial Statement 506

Amendment to proposal approved under section 45C of the *Environmental Protection Act 1986*

This Attachment replaces Schedule 1 and Attachment 1 to Attachment 6 of Ministerial Statement 506.

Proposal: Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora

Proponent: Minara Resources Pty Ltd

Changes:

- Reduce the authorised land disturbance within the development envelope at Murrin Murrin East by 1,650 hectares (ha)
- Increase in authorised land disturbance to Murrin Murrin North and Murrin Murrin South by 1,650 ha.
- Reduce the total spatial extent of the development envelope from 68,888 ha to 20,172 ha through the following:
    - decrease the existing development envelope for Murrin Murrin North and Murrin Murrin South by 23,774 ha, from 37,435 ha to 13,661 ha.
    - decrease the existing development envelope for Murrin Murrin East by 24,942 ha from 31,453 ha to 6,511 ha.

Table 1: Summary of the proposal

Proposal title	Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora.
Short description	The proposal is for the Stage 2 expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation, 60 kilometres east of Leonora. The Stage 2 expansion includes the mining of additional ore, an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Table 2: Location and authorised extent of physical and operational elements

Element	Previously Authorised Extent	Authorised Extent
Life of Project (Indicative)	~30 years	~30 years
Development Envelope	**Figures 2 and 3**	**Clearing of 6,850 hectares within a Development Envelope**

Element	Previously Authorised Extent	Authorised Extent
		of 20,172 hectares
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete1 (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Maximum Capacity of Nickel, Cobalt, and Mixed Products (tpa)	714,000	714,000
Ammonium Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14
Pits, Waste Dumps and Ore Stockpiles		
Area disturbed by waste dumps and ore stockpiles at Murrin Murrin East (km^2)	25	**Removed**
Area to be disturbed for pits at Murrin Murrin East (km^2)	17	**Removed**
Area disturbed by pits, waste dumps and ore stockpiles at Murrin Murrin North and South (km^2)	26.5	**Removed**
Total disturbance of pits, waste dumps and ore stockpiles (km^2)	**68.5**	**68.5 (6,850 ha)**
Depth of pits (m)	Up to 80 m	Up to 80 m
Tailings Storage Facility and Evaporation Ponds		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23
Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Calcrete Quarry		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance	40	40
Infrastructure		
Rate of Processing (Mtpa)	0.5	0.5
Waste Residue		

Element	Previously Authorised Extent	Authorised Extent
Volume (Mtpa)	0.375	0.375

Note: Text in **bold** in Table 2 indicates a change to the proposal.

Notes:

1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

Table 3: Abbreviations

Abbreviation	Term
CEO	Chief Executive Officer
GL	gigalitre
ha	hectare
km	kilometre

Figures (attached)

Figure 1: Regional location
Figure 2: Development envelope – Murrin Murrin North and South
Figure 3: Development envelope – Murrin Murrin East

All coordinates are in metres, listed in Map Grid of Australia Zone 51 (MGA Zone 51, datum of Geocentric Datum of Australia 1994 (GDA94).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation in Environment Online.

[Signed 6 November 2023]

Prof Matthew Tonts
CHAIR
Environmental Protection Authority
under delegated authority

6 November 2023

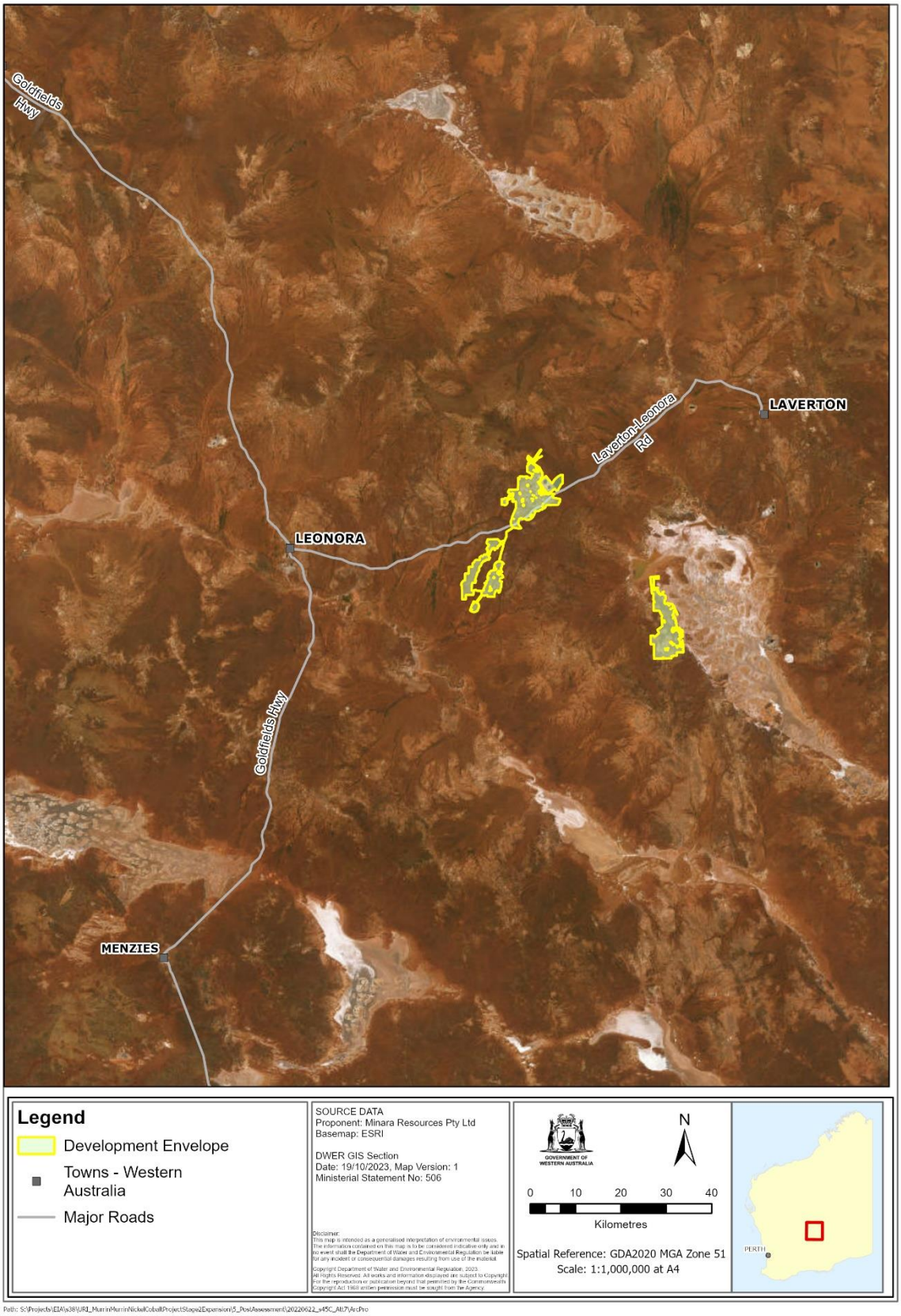


Figure 1: Regional location

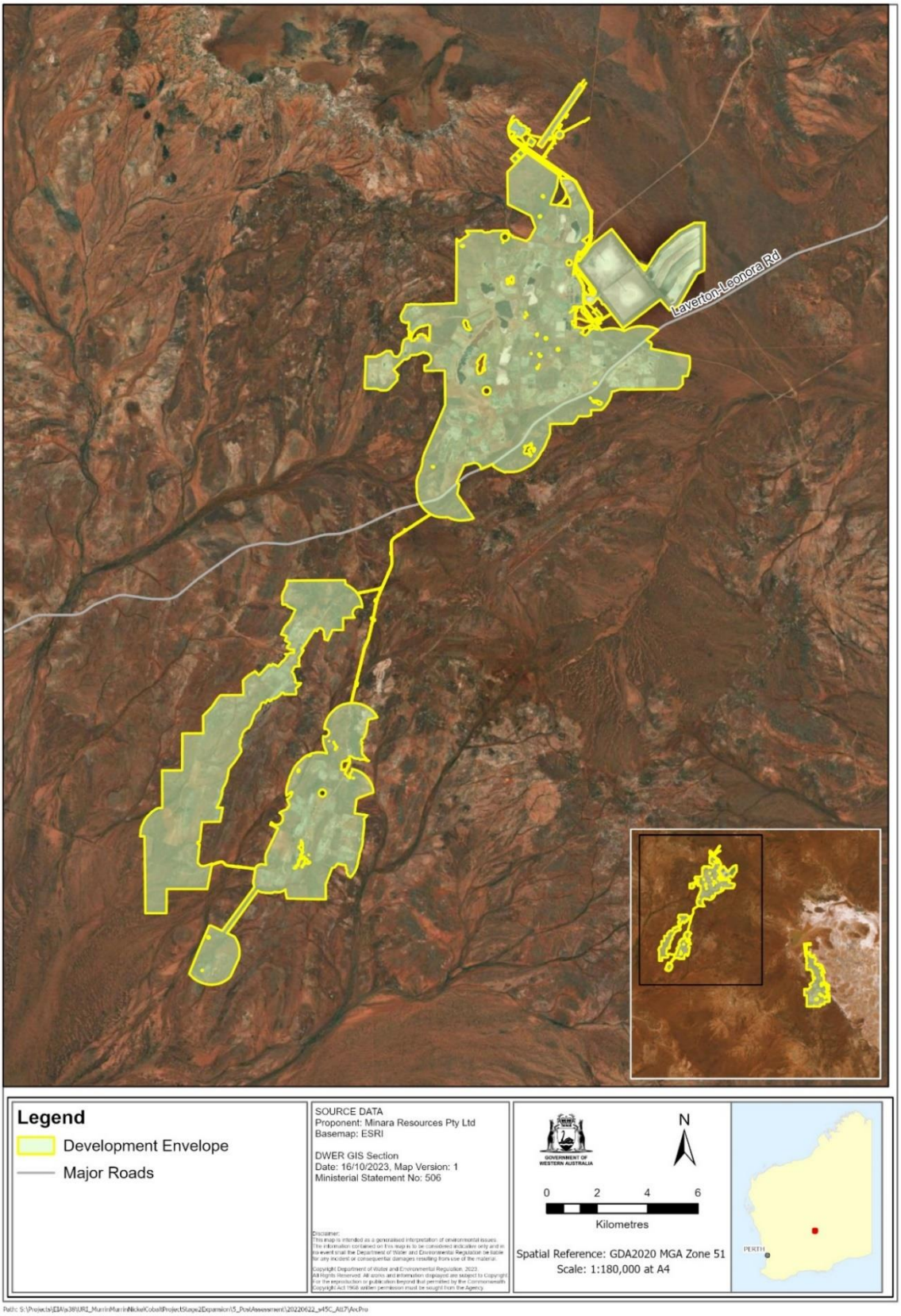


Figure 2: Development envelope – Murrin Murrin North and South

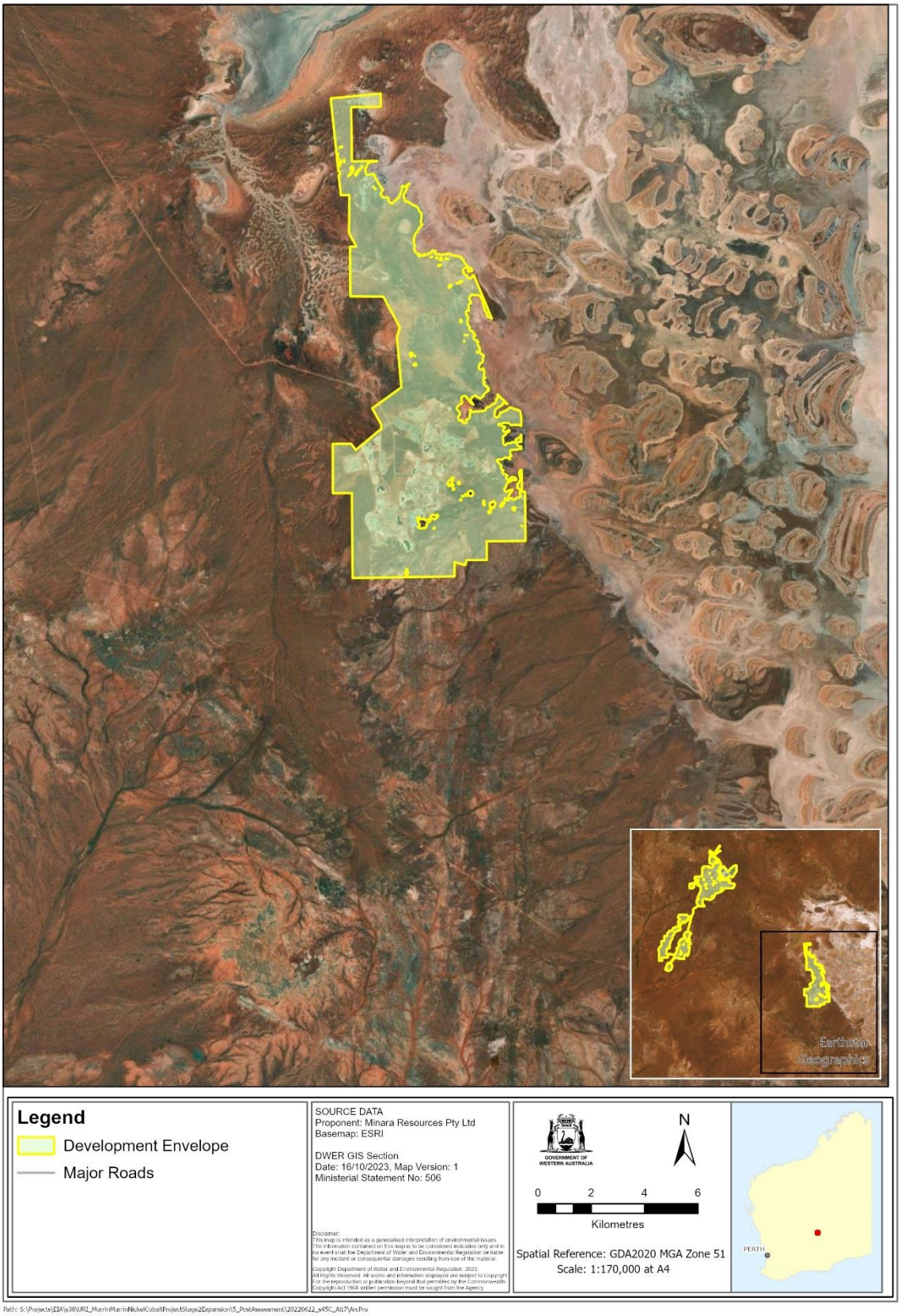


Figure 3: Development envelope – Murrin Murrin East

Attachment 8 to Ministerial Statement 506

Amendment to proposal approved under section 45C of the *Environmental Protection Act 1986*

This Attachment replaces Schedule 1 and Attachment 1 to Attachment 7 of Ministerial Statement 506.

Proposal: Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora

Proponent: Minara Resources Limited

Changes:

- No additional clearing, emissions or discharges or changes to the life of mine.
- Ministerial Statement figures updated to include proposal supporting infrastructure previously presented in Attachment 6 and incorrectly omitted from Attachment 7 due to an administrative error. Figures updated to include water pipeline connections that were omitted due to an error of transcription in Attachment 6.
- The development envelope details in Table 2 updated to correctly reference mining and borefield development envelopes referenced in the corrected figures.
- The development envelope extent of 20,172 hectares (ha) in Table 2 has been moved to the correct location under 'Pits, Waste Dumps and Ore Stockpiles' in Table 2.

Table 1: Summary of the proposal

Proposal title	Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion 60km East of Leonora.
Short description	The proposal is for the Stage 2 expansion of the Murrin Murrin Nickel-Cobalt mining and processing operation, 60 kilometres east of Leonora. The Stage 2 expansion includes the mining of additional ore, an expansion of the processing plant to process additional ore; and the development of additional infrastructure associated with mining and processing of the ore.

Table 2: Location and authorised extent of physical and operational elements

Element	Previously Authorised Extent	Authorised Extent
Life of Project (Indicative)	~30 years	~30 years

Element	Previously Authorised Extent	Authorised Extent
Mining and Borefield Development Envelopes	Clearing of 6,850 hectares within a Development Envelope of 20,172 ha	**Figure 1 to Figure 4**
Inputs		
Nickel Cobalt Ore (Mtpa)	11	11
Calcrete[1] (Mtpa)	4.3	4.3
Elemental Sulphur (Mtpa)	1.9[2]	1.9[2]
Process Water (ML/d)	Up to 97[3]	Up to 97[3]
Natural Gas (Tjpd)	90	90
Outputs[4]		
Maximum Capacity of Nickel, Cobalt, and Mixed Products (tpa)	714,000	714,000
Ammonium Sulphate Crystals (tpa)	440,000	440,000
Waste and Emissions		
Tailings Solids (Mtpa) (including gypsum)	14.5	14.5
Sulphur Dioxide (g/s)	329	329
Oxides of Nitrogen (g/s)	27.3	27.3
Carbon Dioxide (Mtpa)	1.14	1.14
Pits, Waste Dumps and Ore Stockpiles		
Total disturbance of pits, waste dumps and ore stockpiles (km^2)	68.5 (6,850 ha)	68.5 (6,850 ha)
Mining Development Envelope	**Not specified**	**A Mining Development Envelope of 20,172 ha (Figure 3 and Figure 4)**
Depth of pits (m)	Up to 80 m	Up to 80 m
Tailings Storage Facility and Evaporation Ponds		
Area of Disturbance TSF (km^2)	Up to 23	Up to 23
Area of Disturbance Evaporation Ponds (km^2)	Up to 12	Up to 12
Calcrete Quarry		
Area of Disturbance (km^2)	15	15
Heap Leach Facility		
Total Area of Disturbance	40	40
Infrastructure		
Rate of Processing (Mtpa)	0.5	0.5
Waste Residue		
Volume (Mtpa)	0.375	0.375

Note: Text in **bold** in Table 2 indicates a correction of administrative error.

Notes:

1. The quantity of calcrete required will vary as a function of its calcium carbonate content. High calcium carbonate content will mean that a smaller quantity of calcrete will enable the Project to meet its neutralization requirements. The estimated value of 3.9 Mtpa is based on an average calcium carbonate content of 52%.
2. Maximum capacity is based on the option of two 4,400 tpd sulphuric acid plants to enable supply to third party users.
3. Maximum capacity is based on the option of a 350,000 tpa ammonia plant to enable supply to third party users.
4. The product masses listed as the outputs represent the maximum production rates for each product in isolation from other related products.

Table 3: Abbreviations

Abbreviation	Term
CEO	Chief Executive Officer
GL	gigalitre
ha	hectare
km	kilometre

Figures (attached)

Figure 1: Regional location
Figure 2: Project layout
Figure 3: Development envelope – Murrin Murrin North and South
Figure 4: Development envelope – Murrin Murrin East

All coordinates are in metres, listed in Map Grid of Australia Zone 51 (MGA Zone 51, datum of Geocentric Datum of Australia 2020 (GDA2020).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation in Environment Online.

[Signed 24 April 2024]

Prof Matthew Tonts
CHAIR
Environmental Protection Authority
under delegated authority

Approval date: 24 April 2024

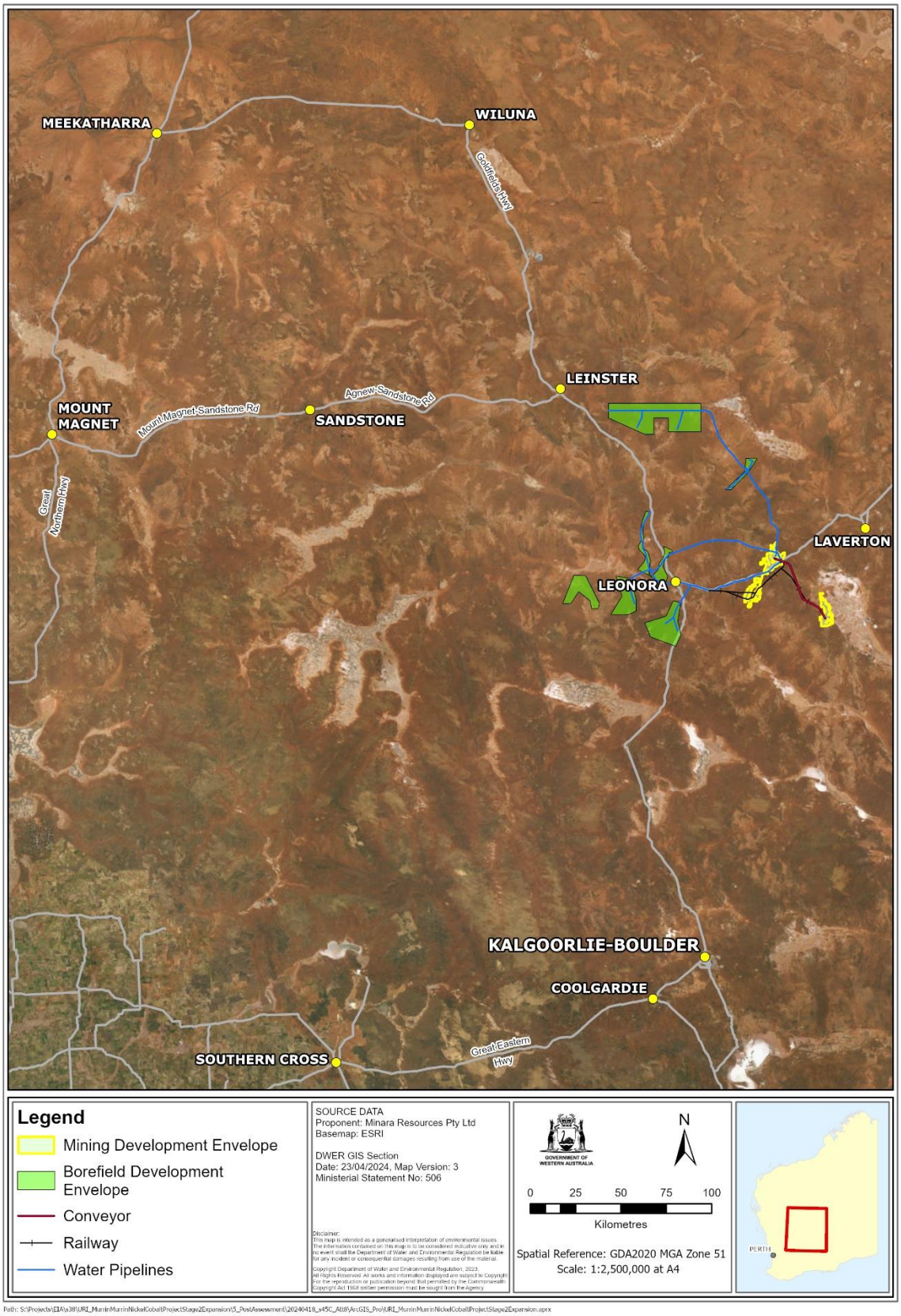


Figure 1 Regional location[1]

[1] The borefield development envelope was previously presented as 'borefield' in Attachment 6.

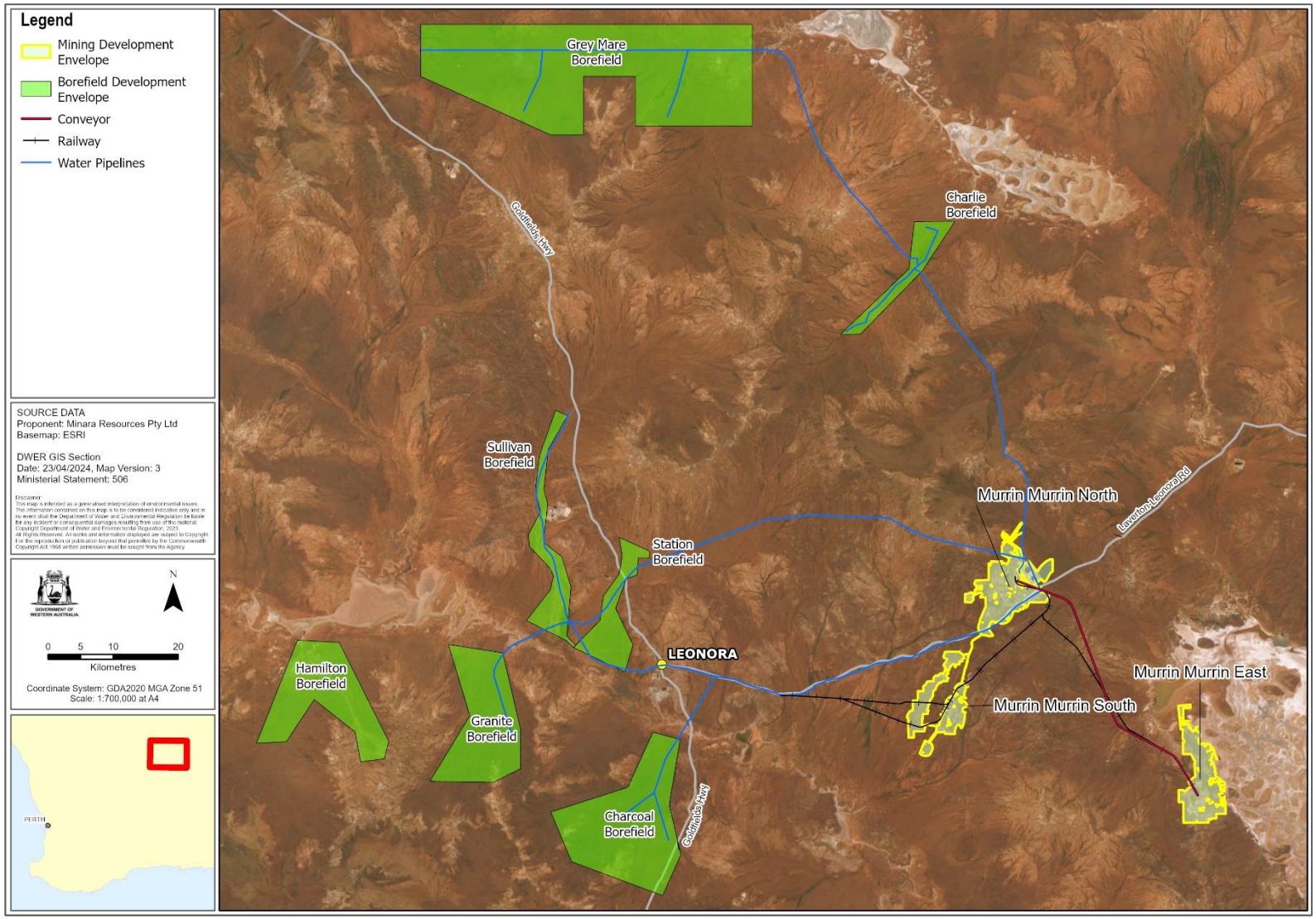


Figure 2 Project layout

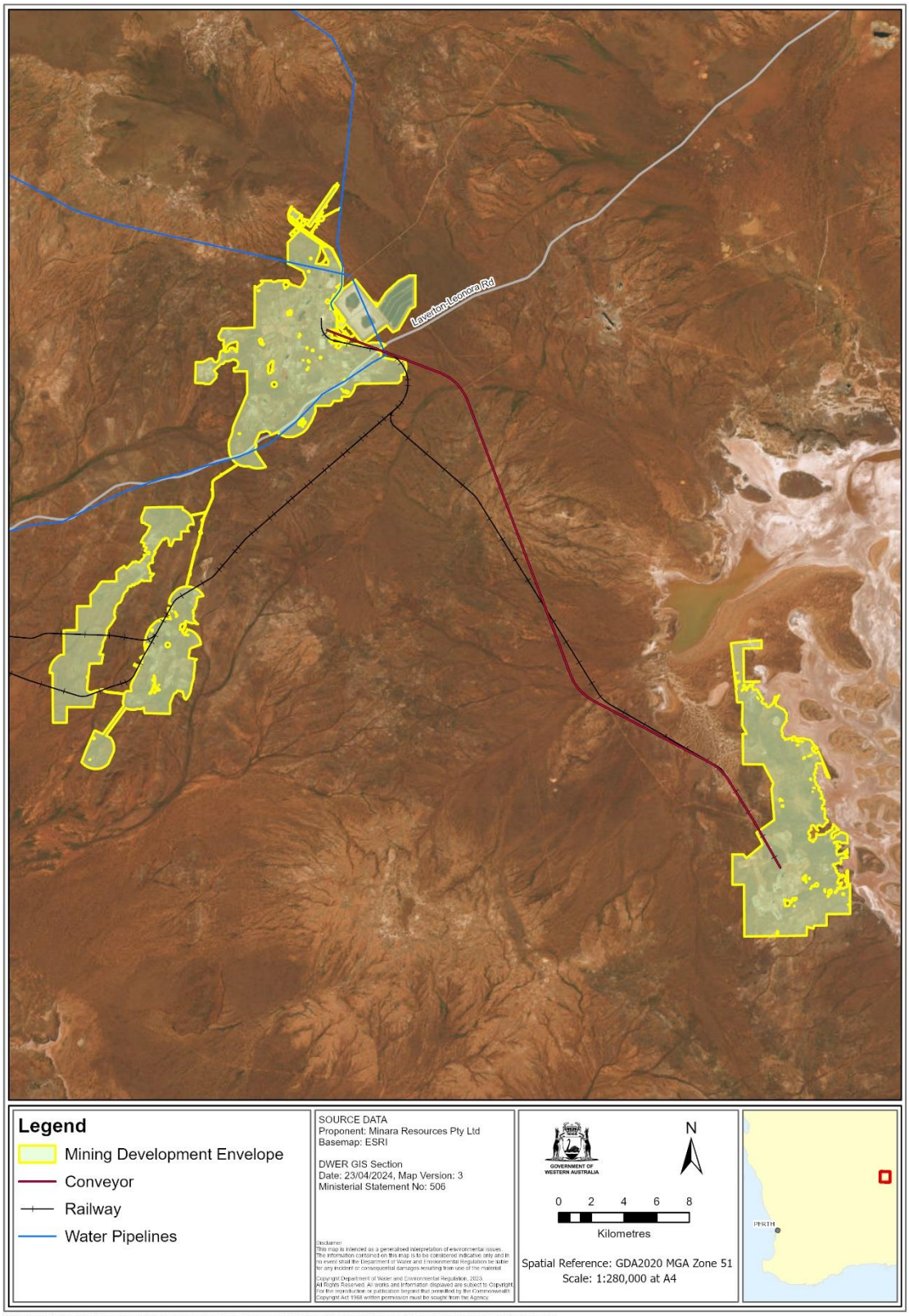


Figure 3 Development envelope – Murrin Murrin North and South

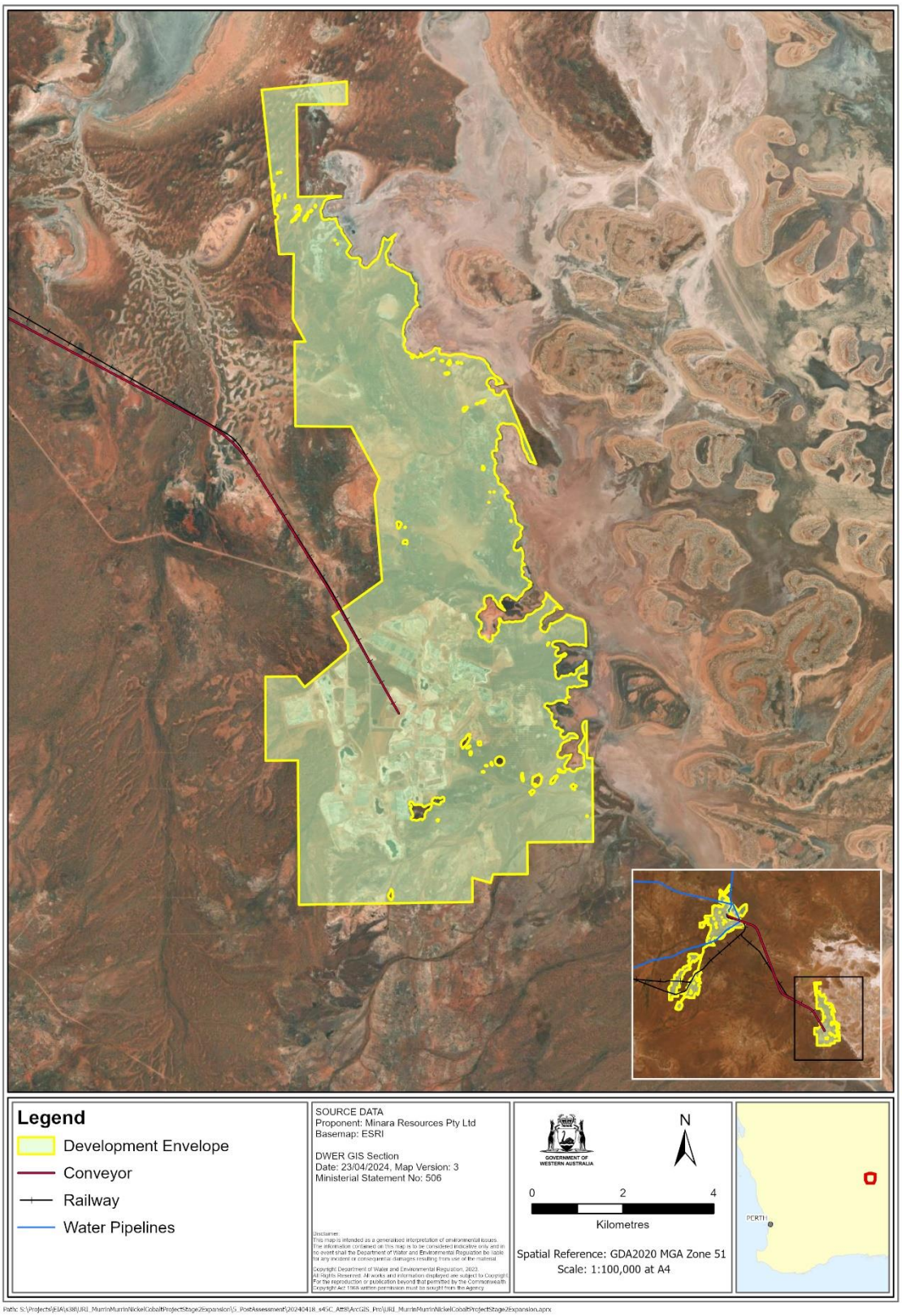


Figure 4 Development envelope – Murrin Murrin East