



Statement No.

000571

**MINISTER FOR THE ENVIRONMENT AND HERITAGE**

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

**MT MARGARET NICKEL-COBALT PROJECT, SHIRE OF LEONORA**

**Proposal:** The mining and processing of up to 15 million tonnes per annum of nickel-cobalt ore at the Mt Margaret Project area, approximately 300 kilometres north of Kalgoorlie, as documented in schedule 1 of this statement.

**Proponent:** Anaconda Nickel Limited

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

**Assessment Number:** 1317

**Report of the Environmental Protection Authority:** Bulletin 1025

The proposal referred to above may be implemented subject to the following conditions and procedures:

*Procedural conditions*

**2 Implementation and Changes**

- 1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions 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 and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.
- 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 and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

Published on

**14 SEP 2001**

## **2 Proponent Commitments**

- 2-1 The proponent shall implement the 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 the conditions in this statement.

## **3 Proponent Nomination and Contact Details**

- 3-1 The proponent for the time being nominated by the Minister for the Environment and Heritage 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 and Heritage has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environmental Protection of any change of contact name and address within 60 days of such change.

## **4 Commencement and Time Limit of Approval**

- 4-1 The proponent shall provide evidence to the Minister for the Environment and Heritage within five years of the date of this statement that the proposal has been substantially commenced or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment and Heritage will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment and Heritage prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- the environmental factors of the proposal have not changed significantly,
- new, significant, environmental issues have not arisen, and
- all relevant government authorities have been consulted.

Note: The Minister for the Environment and Heritage may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

*Environmental conditions*

**5 Compliance Audit and Performance Review**

5-1 The proponent shall prepare an audit program in consultation with and submit compliance reports to the Department of Environmental Protection which address:

- the implementation of the proposal as defined in schedule 1 of this statement;
- evidence of compliance with the conditions and commitments; and
- the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environmental Protection is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement. Usually, the Department of Environmental Protection prepares an audit table which can be utilised by the proponent, if required, to prepare an audit program to ensure the proposal is implemented as required. The Chief Executive Officer is responsible for the preparation of written advice to the proponent, which is signed off either by the Minister or, under an endorsed condition clearance process, a delegate within the Environmental Protection Authority or the Department of Environmental Protection that the requirements have been met.

5-2 The proponent shall submit a performance review report every five years after the start of the operations phase, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority, which addresses:

- the major environmental issues with the project; the objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives;
- the level of progress in the achievement of sound environmental performance, including industry benchmarking, and use of best available technology where practicable;
- significant improvements gained in environmental management, including the use of external peer reviews;
- stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
- the proposed environmental objectives over the next five years, including improvements in technology and management processes.

**6 Borefield Contingency Plan**

6-1 Prior to commissioning, the proponent shall prepare a Borefield Contingency Plan, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority for the development of contingency water supplies in the event that the proposed production borefield is unable to sustain the water requirements of the proposal.

This Plan shall include a detailed timetable of actions to develop the contingency water supply into a production borefield within one year.

Note: The Borefield Contingency Plan should be submitted to the Environmental Audit Section of the Department of Environmental Protection to initiate the compliance audit process.

- 6-2 In the event that monitoring identifies unacceptable impacts, the Minister for the Environment and Heritage on advice of the Environmental Protection Authority may require the proponent to implement actions set out in the Borefield Contingency Plan.
- 6-3 The proponent shall review and where necessary revise the Borefield Contingency Plan required by condition 6-1 annually, or as otherwise required by the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.
- 6-4 The proponent shall make the Borefield Contingency Plan required by condition 6-1 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

## **7 Greenhouse Gas Emissions Management Plan**

- 7-1 Prior to commencement of construction of the processing plant, 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 to minimise total net “greenhouse gas” emissions and/or “greenhouse gas” emissions per unit of product; 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 Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

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 total net “greenhouse gas” emissions and/or the “greenhouse gas” emissions per unit of product 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;

- 5 an analysis of the extent to which the proposal meets the requirements of the National Greenhouse Strategy using a combination of:
- “no regrets” measures;
  - “beyond no regrets” measures;
  - land use change or forestry offsets;
  - international flexibility mechanisms; and
- 6 a target set by the proponent for the reduction of total net “greenhouse gas” emissions and/or “greenhouse gas” emissions per unit of product over time, and annual reporting of progress made in achieving this target.

Note: In Section 5 above, the following definitions apply:

- (1) “no regrets” measures are those that can be implemented by a proponent which are effectively cost-neutral and provide the proponent with returns in savings which offset the initial capital expenditure that may be incurred, and
- (2) “beyond no regrets” measures are those that can be implemented by a proponent which involve some additional cost that is not expected to be recovered.
- 7-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 7-1 to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.
- 7-3 The proponent shall make the Greenhouse Gas Emissions Management Plan required by condition 7-1 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

## **8 Subterranean Fauna Sampling Plan**

- 8-1 Prior to commencing production from each borefield or calcrete mining operation, the proponent shall develop a Subterranean Fauna Sampling Plan for the respective borefield or calcrete mining area, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The objective of this Plan is:

- to increase scientific knowledge about subterranean fauna to assist in the conservation of this element of the environment.

This Plan shall address:

- 1 subterranean fauna surveys of the area to be affected by the borefield or calcrete mining operation to assist in establishing the conservation significance of any species within the affected areas;
- 2 characterisation of subterranean fauna habitats to be affected by the borefield or calcrete mining operation and identification of similar subterranean fauna habitats outside the affected areas;

- 3 subterranean fauna surveys of similar habitats outside the areas to be affected by the borefield or calcrete mining operation to assist in establishing the conservation significance of fauna within the areas to be affected; and
- 4 specific measures to record and preserve biological information on any species collected in the project area.

Note: The Subterranean Fauna Sampling Plan should be submitted to the Environmental Audit Section of the Department of Environmental Protection to initiate the compliance audit process.

- 8-2 The proponent shall implement the Subterranean Fauna Sampling Plan required by condition 8-1.
- 8-3 The proponent shall make the Subterranean Fauna Sampling Plan required by condition 8-1 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.
- 8-4 The proponent shall submit the results of the Subterranean Fauna Sampling Plan to the Environmental Protection Authority, the Department of Conservation and Land Management and the Western Australian Museum.
- 8-5 In the event that the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management considers, based on the results of the Subterranean Fauna Sampling Plan, that the Environmental Protection Authority objective for this Plan would be compromised, then the proponent shall develop an action plan to the requirements and timing of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

## **9 Significant Flora Management Plan**

- 9-1 Prior to ground-disturbing activities, the proponent shall prepare a Significant Flora Management Plan to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

This Plan shall address:

1. the impacts upon significant flora species within the project area;
2. where necessary, offsite surveys to better understand the regional significance of significant flora species;
3. planning to avoid any disturbance to significant flora wherever possible; and
4. the propagation and return of significant flora into rehabilitation areas.

Note 1: 'Significant flora' are those which are Declared Rare, Priority, restricted, undescribed or range extensions of species in the project area.

Note 2: The Significant Flora Management Plan should be submitted to the Environmental Audit Section of the Department of Environmental Protection to initiate the compliance audit process.

- 9-2 The proponent shall implement the Significant Flora Management Plan required by condition 9-1.
- 9-3 The proponent shall review the Significant Flora Management Plan at least every three years to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

#### Procedures

- 1 Where the condition states "to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority", the Chief Executive Officer of the Department of Environmental Protection will obtain that advice for the preparation of written advice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies, as required, in order to provide its advice to the Chief Executive Officer of the Department of Environmental Protection.

#### Notes

- 1 The Minister for the Environment and Heritage will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environmental Protection over the fulfilment of the requirements of the conditions.
- 2 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 1986*.

DR JUDY EDWARDS MLA  
MINISTER FOR THE ENVIRONMENT AND HERITAGE

14 SEP 2001

### The Proposal (1317)

The Mt Margaret Nickel-Cobalt Project is for a large-scale nickel and cobalt mining and processing operation located approximately 300 kilometres (km) north of Kalgoorlie in the north-eastern goldfields. The proposal will involve the mining and processing of up to 15 million dry tonnes per annum (Mtpa) of lateritic ore to produce approximately 60,000 tonnes per annum (tpa) of nickel and up to 8,000 tpa of cobalt. The ore will be mined at Marshall Pool, 55 km south south-east of Leinster, and Lawlers, 10 km south of Leinster (see Figures 1 and 2).

Primary crushing, beneficiation and blending will be undertaken at each of these mining areas before the ore is transported to the Marshall Pool area for processing. The processing plant will use a pressure acid leach process to dissolve the nickel and cobalt from the ore. The dissolved nickel and cobalt are then recovered through a series of processing steps including precipitation and solvent extraction before being refined on-site to produce nickel and cobalt metal (see Figure 3).

The main components of the proposal are:

- mining of up to 15 Mtpa of nickel-cobalt ore from the Marshall Pool and Lawlers orebodies;
- Run Of Mine (ROM) stockpiles, crushing, wet beneficiation and blending at the Marshall Pool and Lawlers project areas;
- disposal of mine waste and beneficiation reject material to mined out pits and/or to waste dumps in the mining areas;
- transport of ore by one or a combination of the following: conveyor; road; rail; or slurry pipeline from the mining areas to the processing plant;
- construction of processing plant consisting of pressure acid leach, washing, precipitation, solvent extraction and refining circuits at Marshall Pool;
- development of the borefields and associated infrastructure to supply approximately 50 megalitres of water per day with a total dissolved solids content of less than 20,000 milligrams per litre; the Depot Springs and Marshall Creek Borefields will be developed as required over the life of the project, with Sandstone South Borefield being a contingency borefield for the project; the Marshall Creek Borefield will initially be developed for water supply during construction;
- construction of an initial tailings containment facility with a capacity to contain the first five years of tailings produced;
- in-pit disposal of tailings after year five if this is technically, economically and environmentally feasible, or alternatively, the development of an additional conventional tailings storage facility at a site approximately 24 km west of the plant;
- evaporation ponds for the disposal of decant water from the tailings storage facilities or liquor recovered during thickening of the tailings;
- mining and processing of 0.4 Mtpa of magnesite ore to produce magnesia for use on-site and for sale;
- the development of a calcrete quarry 3.5 km north of Lake Raeside;
- transportation of the calcrete by road, rail or slurry pipeline to the processing plant;



- development of an infrastructure corridor between the Mt Margaret and Murrin Murrin Projects; this would be a multi-purpose corridor to enable haulage, water and power transmission; and
- transportation by road/rail of imported sulphur through Kwinana and/or Esperance to the processing plant.

The key characteristics of the proposal are summarised in table 1 below.

**Table 1 - Key Proposal Characteristics (1317)**

Element	Description	
Life of Project (Indicative)	30 years	
<b>Development Stages</b>		
Stage 1	Mining and beneficiation of up to 15 Mtpa of ore to produce 6 Mtpa of leach feed to a pressure acid leach circuit which will be processed to 60,000 tpa of contained nickel as nickel-cobalt hydroxide.	
Stage 2	Refinery to produce up to 160,000 tpa of nickel metal and 16,000 tpa of cobalt metal from nickel-cobalt hydroxide. The refinery will produce up to 100,000 tpa of nickel metal from nickel-cobalt hydroxides supplied by external projects. The commencement of construction of this Project stage is currently scheduled for 2003.	
<b>Primary Inputs</b>		
Nickel/Cobalt Ore (Mtpa)	up to 15	
Magnesite Ore (Mtpa)	0.4	
Calcrete (Mtpa)	1.25	
Elemental Sulphur (Mtpa)	0.9	
Process Water (megalitres/ per day with TDS of <20,000 milligrams per litre)	50	
Natural Gas (terajoules per day)	40	
Nickel/Cobalt Hydroxide (tpa Ni)	100,000	
<b>Outputs</b>		
Nickel metal (tpa)	up to 160,000	
Cobalt metal (tpa)	16,000	
Magnesia (tpa)	200,000	
<b>Wastes and Emissions</b>		
Coarse rejects from beneficiation (Mtpa)	5	
Tailings Solids (Mtpa)	8	
Water from Dewatering Operations (ML/d)	up to 1	
Sulphur Dioxide (grams per second)	186 (approximately)	
Oxides of Nitrogen (grams per second as nitrogen dioxide)	24 (approximately)	
Greenhouse Gas (carbon dioxide equivalent Mtpa)	1.5 (approximately)	
<b>Waste Dumps and Ore Stockpiles – Indicative Characteristics</b>	<b>Without In-Pit Disposal</b>	<b>With In-Pit Disposal</b>
Area disturbed by waste dumps (km <sup>2</sup> )	13	12
Ore stockpiles (km <sup>2</sup> )	8	10
Coarse rejects (from beneficiation) (km <sup>2</sup> )	9	4
<b>TOTAL (km<sup>2</sup>)</b>	<b>30</b>	<b>26</b>
Final height of waste dumps above ground level (m)	30	

Element	Description	
Life of Project (Indicative)	30 years	
<b>Pits - Indicative Characteristics</b>		
Area to be disturbed (km <sup>2</sup> )	50	
Depth of pits	maximum depth of 50 metres below ground level	
<b>Tailing Storage Facility and Evaporation Ponds – Indicative Characteristics Assuming Conventional Subaerial Storage</b>	Without In-Pit Disposal	With In-Pit Disposal
Area to be disturbed for tailing storage facility (km <sup>2</sup> )	9	3
Area to be disturbed for evaporation ponds (km <sup>2</sup> )	6	6
<b>TOTAL (km<sup>2</sup>)</b>	<b>15</b>	<b>9</b>
<b>Other areas of disturbance – Indicative Characteristics</b>		
Calcrete Quarry (km <sup>2</sup> )	3	
Magnesite Mine (associated with the Ni/Co orebodies) (km <sup>2</sup> )	1	
Infrastructure (inc. corridors and accommodation villages) (km <sup>2</sup> )	12	
Total Area of disturbance (assuming no in-pit disposal) (km <sup>2</sup> )	111	

**Note:**

1 km<sup>2</sup> = 100 hectares

ML/d – million litres per day

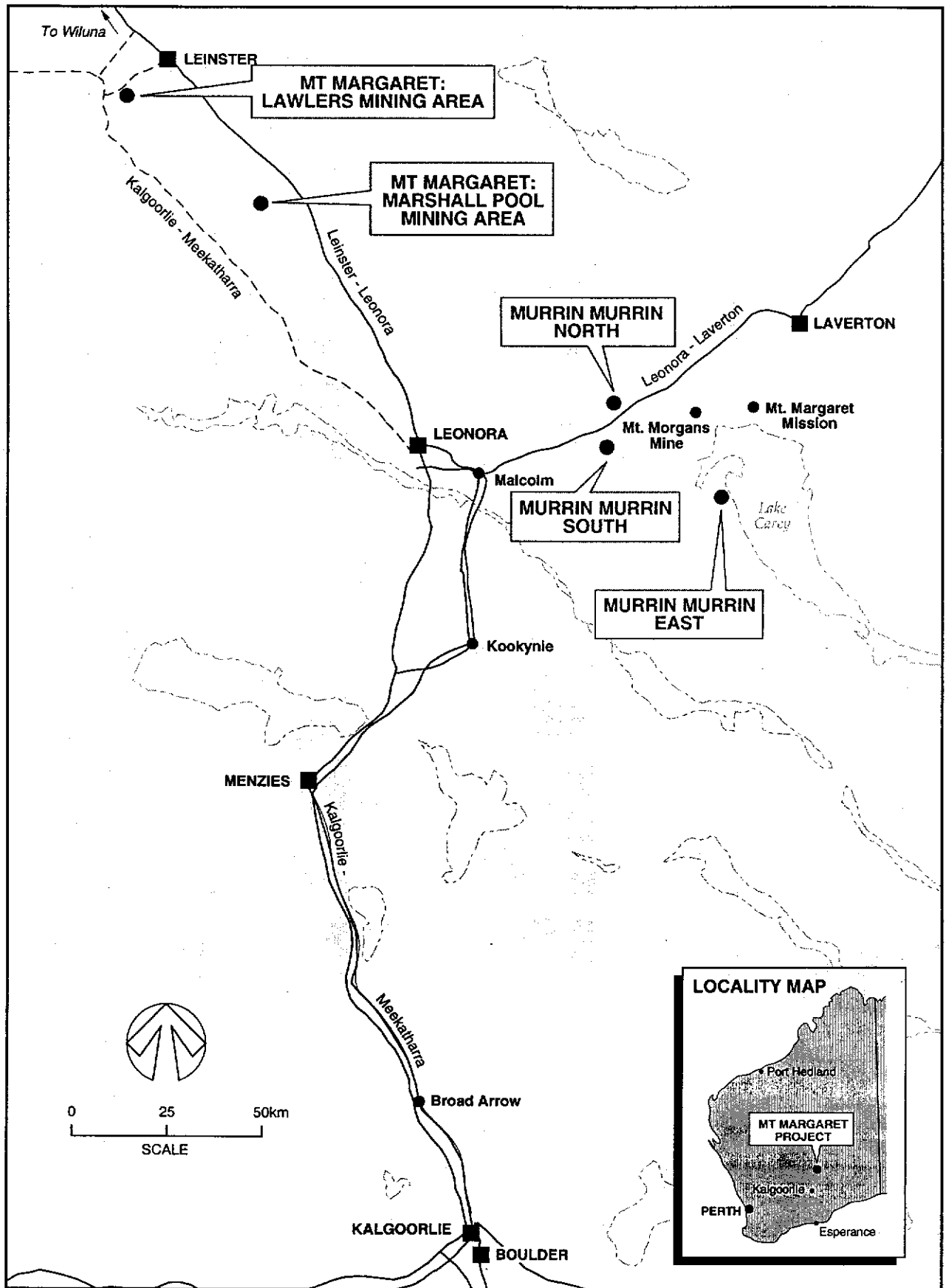
TDS – Total Dissolved Solids

tpa – tonnes per annum

Mtpa – million tonnes per annum

**Figures (attached)**

1. Location Plan
2. Project Layout
3. Process Flow Chart



Job No.	31059-018-071	Anaconda Nickel Limited MT MARGARET PROJECT PUBLIC ENVIRONMENTAL REVIEW  <b>LOCATION OF MT MARGARET PROJECT</b>	
Prep. By	KMF 22 Nov 00		
Chk'd By			
Office	Perth, Western Australia Phone: +61 8 9221 1630		

Figure 1. Location Plan (Source: URS, 2000)

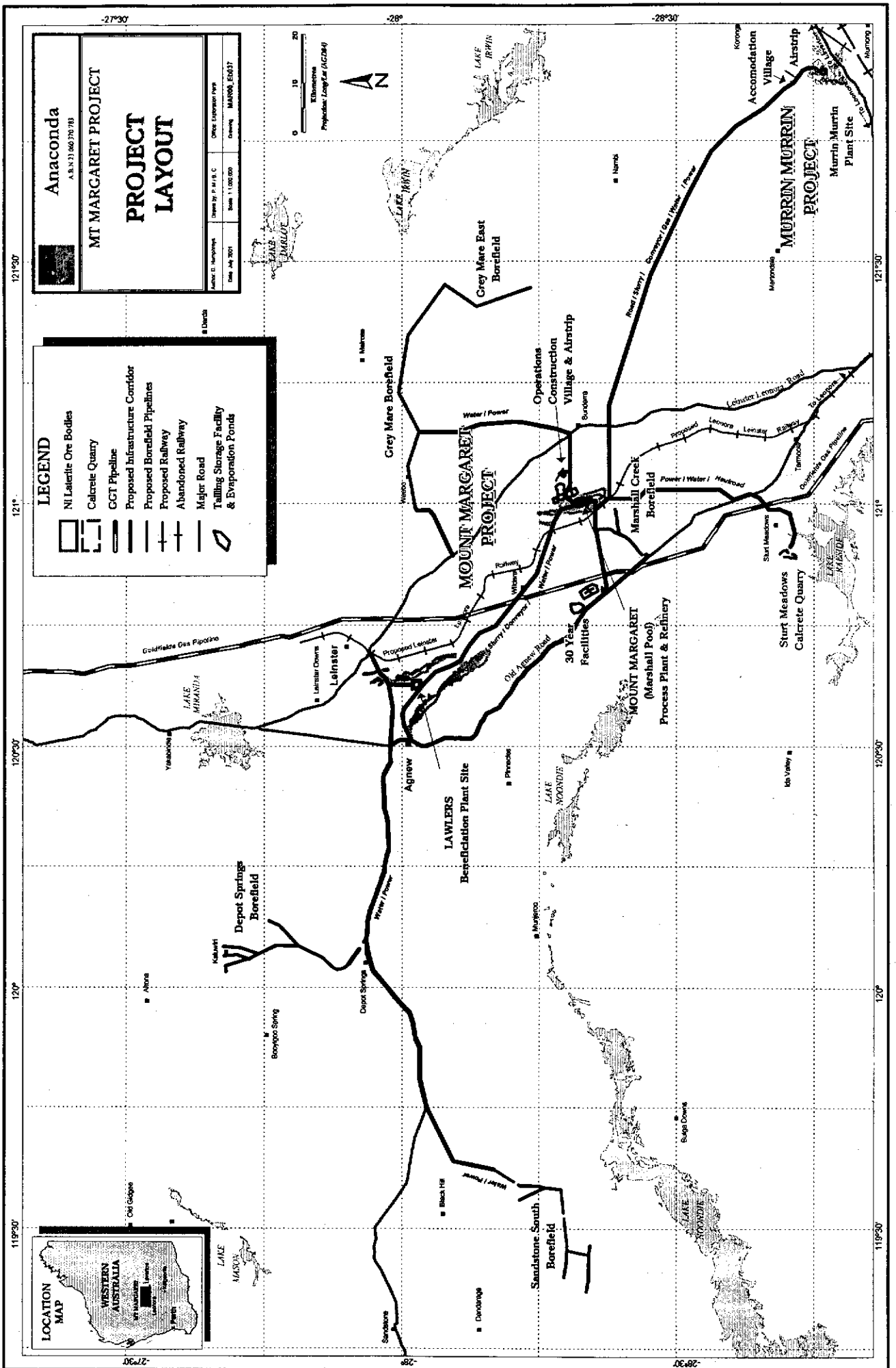


Figure 2. Project Layout (Source: URS, 2000)

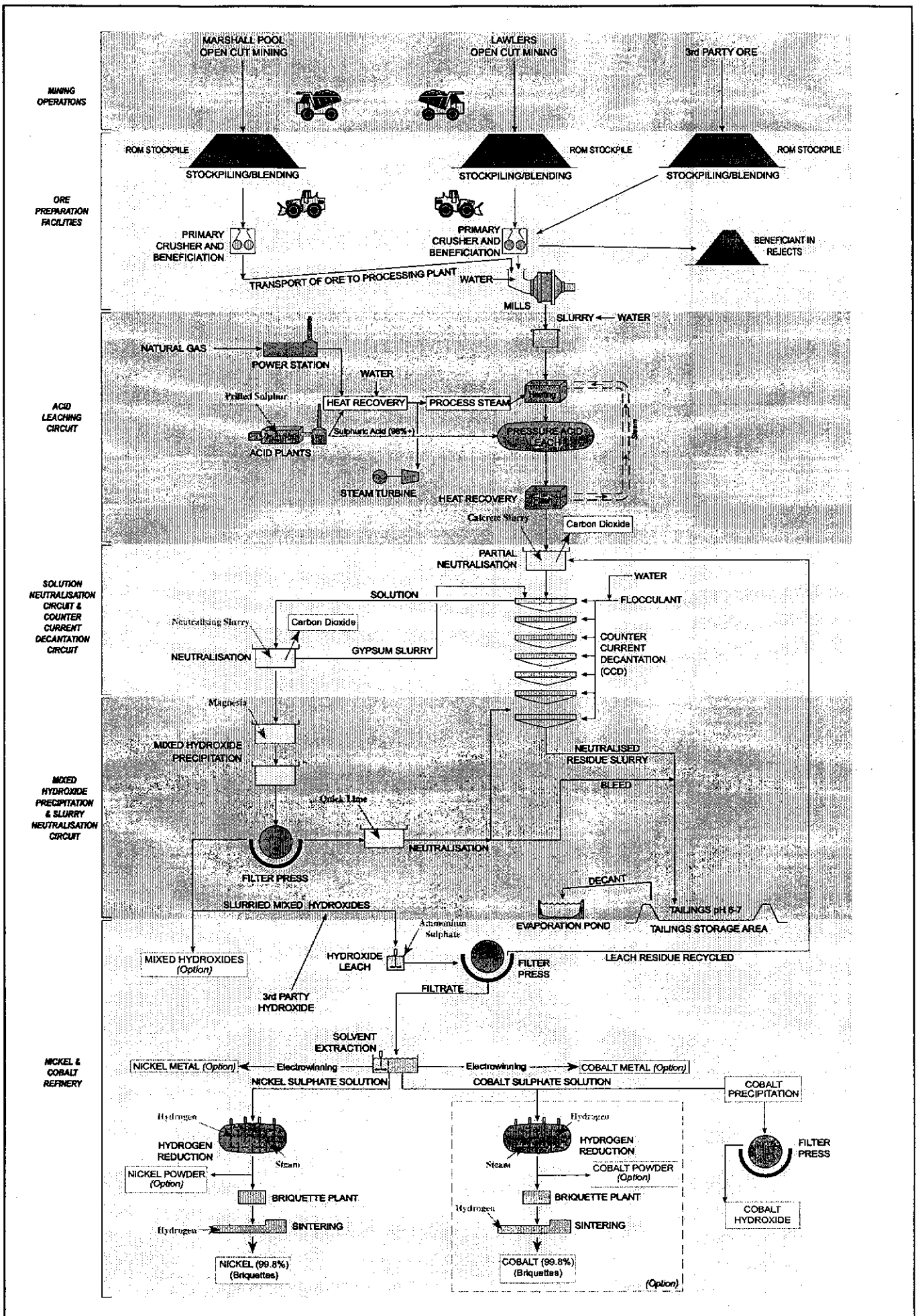


Figure 3. Process Flow Diagram (Source: URS, 2000)

**Proponent's Consolidated Environmental Management  
Commitments**

July 2001

**MT MARGARET NICKEL-COBALT PROJECT  
SHIRE OF LEONORA  
(Assessment No. 1317)**

**ANACONDA NICKEL LTD**

## Proponent's Environmental Management Commitments – Mt Margaret Nickel-Cobalt Project (Assessment No. 1317)

### Abbreviations:

ACMC: Aboriginal Cultural Materials Committee  
 AER: Annual Environmental Report  
 CALM: Department of Conservation and Land Management  
 DEP: Department of Environmental Protection  
 DIA: Department of Indigenous Affairs  
 DMPR: Department of Mineral and Petroleum Resources  
 EA: Environment Australia

EMP: Environmental Management Plan  
 EMS: Environmental Management System  
 EPA: Environmental Protection Authority  
 NPI: National Pollution Inventory  
 TDS: Total Dissolved Solids  
 WAM: WA Museum  
 WRC: Water and Rivers Commission

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Environmental Management Programme (EMP)	To implement the EMP to ensure sound environmental management of the project's construction phase.	<p>Commitment 1.1 Implement the EMP for the project's construction phase. (Draft EMP, Appendix C, PER)</p> <p>Commitment 1.2 Ensure that contractors comply with the environmental management strategies and procedures described in the EMP by making them aware of the requirements of the EMP through the induction programmes and undertaking routine audits of their activities during construction.</p>	<p>1.1 Prior to commencement of the project.</p> <p>1.2 During the construction of the project.</p>	To the requirements of the EPA on the advice of EA, DMPR, CALM, and other relevant agencies.	The EMP implementation and results of audits will be reported in the Annual Environmental Report (AER).
Environmental Management System (EMS)	To develop and implement an EMS to ensure sound environmental management of the project's operation and decommissioning phases.	<p>Commitment 2.1 Develop and implement an EMS for the operation of the project.</p> <p>Commitment 2.2 Ensure that its contractors comply with the environmental management strategies and procedures described in the EMS through induction programmes and by undertaking routine audits of their activities.</p>	<p>2.1 Prior to start of operation of the project.</p> <p>2.2 Biannual audits during the operation of the project.</p>	To the requirements of the EPA on the advice of DMPR and CALM.	The EMS is approved by the DEP. Implementation and results of audits will be reported in the AER.
Borefield vegetation	To manage the impact of the borefield operation on the surrounding vegetation.	<p>Commitment 3.1 Prepare and implement a vegetation monitoring programme for vegetation stress in the borefield areas from which the water for the project will be sourced.</p> <p>Commitment 3.2 In the event that the borefield vegetation monitoring programme shows that any borefield is adversely impacting upon the vegetation, modify the borefield's operations by using different production bores and/or by switching production to an alternative borefield or other water supply.</p>	<p>3.1 Commence prior to development of borefield and continue through operation.</p> <p>3.2 Ongoing</p>	To the requirements of the EPA on the advice of EA and CALM	The vegetation monitoring programme for the borefields is approved by the DEP. Results to be reported in the AER.

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Groundwater	To manage the impact of the borefield operation on other users in the region.	<p>Commitment 4.1 Progressively implement groundwater monitoring programmes at the borefields as they are developed in accordance with the WRC Groundwater Well Licence Conditions.</p> <p>Commitment 4.2 In the event that the groundwater monitoring programme shows that the borefield is operating outside of the WRC Groundwater Well Licence conditions, modify pumping regimes and/or switch production to an alternative borefield or other water supply while the reasons for the variation are investigated.</p> <p>Commitment 4.3 Following completion of the project, decommission the borefields and monitor the aquifer recovery of the water table and water quality:</p> <ol style="list-style-type: none"> <li>1. for a period of at least 25 years; or</li> <li>2. until it recovers to more than 60% of its capacity ; or</li> <li>3. until another user takes control of the borefield.</li> </ol>	<p>4.1 Commence prior to development of borefield and continue through operation.</p> <p>4.2 Ongoing</p> <p>4.3 Post Closure</p>	To the requirements of the EPA on the advice of WRC.	The groundwater monitoring programme for the borefields is approved by the DEP. Results to be reported in the AER.
Borefield management	Sustainable abstraction of groundwater.	<p>Commitment 5.1 Develop a detailed borefield management plan for each borefield it develops in consultation with the DEP, WRC and EA. Integral to such plans will be the sustainable abstraction of groundwater. The plan will include:</p> <ol style="list-style-type: none"> <li>1. Details of the monitoring programmes including monitoring intervals and reporting requirements;</li> <li>2. Undertake the additional collection of baseline data (e.g. rainfall, evaporation, depth to water table and quality) prior to and during borefield operation;</li> <li>3. Monitoring of production, observation and pastoral bores for groundwater level and quality;</li> <li>4. Use of monitoring data to revise production and recharge modelling, abstraction and management strategies;</li> <li>5. Integration of other monitoring results e.g. vegetation and stygofauna into the above data analysis;</li> <li>6. Contingency strategies, which include triggers (e.g. unacceptable impacts to groundwater drawdown and quality, vegetation, stygofauna or other users) upon which the implementation strategies will be based;</li> <li>7. Decommissioning and rehabilitation; and</li> <li>8. Monitoring of groundwater recovery.</li> </ol> <p>Commitment 5.2 In the unlikely event that borefield operations result in subsidence and cause damage to station buildings, undertake appropriate repairs and/or provide compensation.</p>	<p>5.1 Commence prior to development of borefield and continue through operation.</p>	To the requirements of the EPA on the advice of WRC and EA.	The borefield management plan for each borefield is approved by the DEP. Evidence of implementation of the management plan to be reported in the AER.



Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Pastoral activities	To minimise the impact on existing pastoral activities.	<p>Commitment 6.1 Ensure that any existing operational bores which are rendered inoperative, either because of quality or quantity problems, due to the proponent's activities are replaced with an alternative source, similar in quality and quantity as in the affected bores.</p> <p>Commitment 6.2 Consult with the pastoral station managers at least annually.</p>	<p>6.1 During operation.</p> <p>6.2 During construction and operation throughout the life of the project</p>	DMPR	Water levels in pastoral monitoring bores to be reported in the AER.
Land systems	To minimise disturbance of regionally significant land systems.	<p>Commitment 7.1 Ensure that its contractors comply with the environmental management strategies and procedures described in the EMS, specific to minimising disturbance to regionally significant land systems, through induction programmes and by undertaking routine audits of their activities.</p>	<p>7.1 During construction and operation.</p>	CALM	Reported in the AER
Protection of flora and vegetation	To minimise disturbance of the general flora and vegetation of the Project Area.	<p>Commitment 8.1 Progressively rehabilitate disturbed areas in accordance with the EMP and EMS, to minimise disturbance of biological communities in accordance with an integrated mine plan.</p>	<p>8.1 Ongoing from the commencement of construction.</p>	DMPR and CALM	Reported in the AER
Protection of significant flora	To minimise disturbance of known priority flora within the Project Area.	<p>Commitment 9.1 Clearly mark and avoid disturbance to known populations of significant flora where practicable.</p> <p>Commitment 9.2 If significant flora populations are likely to be disturbed during construction or operation, consult with CALM prior to their removal to develop appropriate management options and to facilitate the implementation of appropriate management prior to disturbance.</p> <p>Commitment 9.3 In the event that significant flora (significant being rare, priority, restricted, undescribed or range extensions of species) are found within the Project Area, undertake additional surveys for these flora to gain a better understanding of their distribution and significance prior to disturbance.</p> <p>Commitment 9.4 Run induction programmes for contractors and undertake routine audits of contractors' activities which will specifically address commitments 9.1 to 9.3.</p>	<p>9.1 Prior to construction and during operation if further populations are located.</p> <p>9.2 During construction and operation.</p> <p>9.3 During construction and operation</p> <p>9.4 During construction and operation.</p>	CALM	Reported in the AER

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Subterranean fauna	To ensure that adequate information is available for the purposes of assessing the potential impacts of the project on subterranean fauna and assisting with its conservation.	<p>Commitment 10.1 Prepare and implement a subterranean fauna management plan and review this plan annually.</p> <p>Commitment 10.2 Continue to work with other mining companies in the region to ensure that data on subterranean fauna are shared.</p> <p>Commitment 10.3 Establish a panel of relevant persons (CALM, DEP, WAM, UWA, EA, and Company representatives) with expertise to consult with and review the results, and revise the subterranean fauna management programme when and where necessary.</p> <p>Commitment 10.4 Contribute to the research funding (possibly a PhD student) to study the abundance, diversity and significance of the Stygofauna in the region using industry best sampling, survey and monitoring techniques applicable.</p>	<p>10.1 Prior to and during construction and operation.</p> <p>10.2 Ongoing</p> <p>10.3 Ongoing</p> <p>10.4 Ongoing</p>	CALM, EA, and WA Museum	The subterranean fauna surveys will be reviewed by the DEP during development and also supplied to the WA Museum. The subterranean fauna management plan is approved by the DEP. Results of monitoring programmes and management actions will be reported in the AER.
Regional conservation	To enhance the regional conservation of land systems	<p>Commitment 11.1 Provide for, and support, the conservation of biodiversity as an integrated component of land management on the land associated with its pastoral leases, either as a primary or joint land use. The boundaries of areas managed for conservation, management mechanisms and long-term security arrangements will be developed in collaboration with CALM and other stakeholders.</p> <p>Commitment 11.2 Provide a status review of its conservation of biodiversity in the Annual Environmental Report (AER) to the regulatory authorities, which will include: progress of discussions with CALM, any arrangements or outcomes reached and any subsequent management strategies implemented and their outcome.</p>	<p>11.1 Prior to construction</p> <p>11.2 Annually</p>	To the requirements of the EPA on the advice of CALM	Reported in the AER
Erosion control	To minimise the risk of erosion and sedimentation.	<p>Commitment 12.1 Minimise the extent of land disturbance and progressively rehabilitate disturbed areas.</p>	12.1 During construction and operation.	DMPR	Reported in the AER
Potential water quality impacts due to surface runoff	To minimise the off-site transport of sediments.	<p>Commitment 13.1 Minimise exposed soil surfaces, identify (via visual inspection and land system information) and treat areas prone to erosion and progressively rehabilitate disturbed areas.</p> <p>Commitment 13.2 Prepare and implement a surface water quality monitoring programme for Marshall Creek in the area of the Marshall Pool.</p>	<p>13.1 During construction and operation.</p> <p>13.2 During construction and operation.</p>	DMPR and WRC	The surface water monitoring programme is approved by the DEP, DMPR and WRC. Results will be reported in the AER.

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Dust control – construction phase	To control any dust generated as a result of construction phase activities.	<p>Commitment 14.1 Implement dust control measures including:</p> <ul style="list-style-type: none"> <li>• minimising soil disturbance; and</li> <li>• use of dust-suppression measures (e.g. water sprays)</li> </ul>	14.1 During construction.	DMPR	No complaints received. If complaints are received, these, and the remediation measures implemented will be reported in the AER.
Dust control – operations phase	To control dust generation during the operations phase.	<p>Commitment 15.1 Implement dust control measures including:</p> <ul style="list-style-type: none"> <li>• regular cleaning of areas likely to accumulate dust;</li> <li>• sealing of major roadways within the Plant Site; and</li> <li>• use of water sprays on mine areas, ore and calcare haulage routes, stockpiles and other Project Areas, as required.</li> </ul>	15.1 During operation.	DMPR	No complaints received. If complaints are received, these, and the remediation measures implemented will be reported in the AER.
Greenhouse gas emissions	To reduce greenhouse gas emissions and to comply with the State and Federal Government Greenhouse Policies.	<p>Commitment 16.1 The total greenhouse gas emissions (carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride) for the project will be calculated by the proponent on an annual basis and reported to the DEP.</p> <p>Commitment 16.2 Continue to explore mechanisms to reduce greenhouse gas emissions.</p> <p>Commitment 16.3 Enter into the Commonwealth's Greenhouse Challenge Programme once commissioning has been completed and steady-state operations have been achieved.</p>	16.1 During operation  16.2 During operation  16.3 During operations	Australian Greenhouse Office	Reported in the AER. NPI reporting.
Noise	To meet the State's noise regulations during construction and operation of the project.	<p>Commitment 17.1 If noise levels attributable to the project appear likely to exceed the noise regulations, implement noise reduction measurements such as the use of waste dumps as noise barriers.</p> <p>Commitment 17.2 The proponent will not mine within 2 km of the Agnew Hotel until the noise and dust emissions can be fully assessed.</p> <p>Commitment 17.3 The proponent will not undertake mining or blasting in the areas within close proximity to the Agnew Hotel during night time hours without prior approval.</p>	17.1 During construction and operation  17.2 During construction and operation  17.3 During construction and operation	DMPR	No complaints received. If complaints are received, these, and the remediation measures implemented will be reported in the AER.

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
<p>Tailings storage facilities and evaporation ponds</p>	<p>To select the most appropriate method, considering environmental, technical and economic factors, to dispose of tailings and liquor after the first five years of operation.</p> <p>To move towards the disposal of thickened tailings which contain no free draining liquid upon placement.</p>	<p>Commitment 18.1 Undertake the following:</p> <ul style="list-style-type: none"> <li>• A detailed assessment of tailings solids and water liquor 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).</li> <li>• A detailed assessment of the tailings stream to investigate the technical and economic issues associated with the thickening and subsequent transport and handling of the thickened tailings stream.</li> <li>• An assessment of the predicted particle form and geotechnical characteristics of the tailings, including settling characteristics, and settled and compacted permeabilities.</li> <li>• A detailed evaluation of the potential sites for the tailings storage facilities, including those for in-pit disposal at Marshall Pool and conventional sub-aerial deposition.</li> <li>• Submit a Notice of Intent and Works Approval Application to the DEP and DMPR, which presents the results of the above studies and provides detailed information relating to the design, construction and operation of the proposed tailings storage facility and evaporation ponds.</li> </ul> <p>Commitment 18.2 Backfill the mined-out pits with thickened tailings material if the above studies indicate that this is geotechnically, environmentally and economically feasible.</p>	<p>18.1 Years 1 to 5 of operation.</p>	<p>DEP (Environmental Regulation Division), DMPR and WRC</p>	<p>Notice of Intent and Works Approval Application. The Notice of Intent would address issues associated with seepage management, groundwater contamination modelling and management, environmental impacts and management, and closure and rehabilitation.</p>

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance
Design, operation and closure of the tailings storage facilities and evaporation ponds	To ensure the integrity of the tailings storage facilities and evaporation ponds.	<p>Commitment 19.1 Design, construct and operate the Tailings Storage Facilities (TSF) and evaporation ponds in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>• comply with the DMPR Guidelines;</li> <li>• prevent surface breakout of saline liquors;</li> <li>• level shallower than 8m below the ground surface at a distance greater than 200 m from the TSF and evaporation ponds; and</li> <li>• no unacceptable impacts on beneficial uses of the underlying groundwater.</li> </ul> <p>Commitment 19.2 Ensure the construction and operation of these disposal facilities will not result in unacceptable impacts to the existing groundwater regime and surrounding vegetation. Groundwater monitoring bores will be installed downstream of the facility to monitor for seepage. Vegetation around the tailings storage facility and evaporation ponds will be visually monitored.</p> <p>Commitment 19.3 If seepage is observed (rising groundwater levels and TDS content) which is outside of the design criteria for the TSF then undertake remedial measures such as the installation and operation of recovery bores and cut-off trenches.</p>	<p>19.1 Design, construction and operation.</p> <p>19.2 During construction and operation</p>	DMPR and WRC	The capacity of the tailings storage facility and evaporation ponds and any measured or observed impacts of these facilities will be reported in the AER along with any remedial action undertaken.
Overburden waste and beneficiation reject dumps	To ensure that the final overburden waste and beneficiation reject dumps are stable and support a self-sustaining vegetation.	<p>Commitment 20.1 Design and operate the overburden waste and beneficiation reject dumps such that they are stable, resistant to erosion and can be successfully rehabilitated.</p>	20.1 During operation and closure	DMPR	The areal extent of the waste dumps and their status (active, rehabilitated) will be documented in the AER.
In-pit disposal of overburden waste and beneficiation reject material	To reduce surface disturbance required for dumps by disposing overburden waste and beneficiation reject material to mined out pits.	<p>Commitment 21.1 Implement the integrated mine plan to dispose of overburden waste and beneficiation reject material to mined out pits where it is economically viable to do so.</p>	21.1 During mine planning operation, and closure.	DMPR	
Aboriginal Environmental Consultation Committee	To ensure community concerns are known and that the community can assist with the development of suitable environmental management practices.	<p>Commitment 22.1 Form the Mt Margaret Aboriginal Environmental Consultation Committee which includes local Aboriginal representatives who will meet at approximately quarterly intervals until the Committee considers that it is no longer required. This committee will be conducted along similar lines as the Murrin Murrin Aboriginal Environmental Liaison Committee.</p>	22.1 Ongoing		Meetings with the Mt Margaret Aboriginal Environmental Consultation Committee to be recorded with dates and major issues discussed at meeting and supplied to committee members.
Aboriginal heritage	To avoid disturbance of Aboriginal sites.	<p>Commitment 23.1 In complying with the provisions of the <i>Aboriginal Heritage Act 1972-1980</i> the proponent will:</p> <ul style="list-style-type: none"> <li>• provide reports and submissions to the DIA and ACMC.; and</li> <li>• record the outcomes of meetings with the Aboriginal Environmental Consultation Committee in the AER.</li> </ul>	23.1 During construction and operation.	DIA	Reports and submissions to the DIA and ACMC. Meetings with the Aboriginal Environmental Consultation Committee to be recorded with dates and major issues discussed at meeting to be documented in the AER.

Issues	Objectives	Commitments (Action)	Timing	Whose Advice	Evidence of Compliance.
Operation risks	To minimise the risks associated with plant operations.	<p>Commitment 24.1 Complete hazard and operability studies (HAZOPs) during the detailed design of the plant processing facilities to ensure that the plant is designed to minimise operational risks.</p>	24.1 During design of the project.	DMPR	The HAZOP will be submitted to the DMPR for approval.
Rehabilitation	<p>Optimise rehabilitation of the TSF.</p> <p>Progressive rehabilitation of all mining areas and waste dumps.</p>	<p>Commitment 25.1 Undertake rehabilitation trials on the initial five year tailings storage facility following its decommissioning.</p> <p>Commitment 25.2 Implement an integrated mining and rehabilitation plan during the life of the project to reduce the areas requiring disturbance for waste dumps and tailings. This plan will focus on the use of in-pit disposal of these wastes and the progressive rehabilitation of backfilled pits and other areas of disturbance.</p> <p>Commitment 25.3 Undertake reviews of the project's draft closure plan every five years, in consultation with the relevant regulatory authorities, and include any interim modification in the AER as they eventuate. Any modifications will be integrated into the EMS.</p>	<p>25.1 Commence on decommissioning of five year tailings storage facility.</p> <p>25.2 Mine planning prior to commencement of construction and ongoing review during operations.</p>	DMPR and CALM	Rehabilitation trial results and variations to the integrated mine plan to be reported in AER.