MACKAY POTASH PROJECT
MINE CLOSURE PLAN

PREPARED FOR **AGRIMIN LIMITED**

November 2021

Stantec

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REVISION SCHEDULE

Rev No.	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
V1	2 November 2020	First draft of the MCP	B. Yanez	P. de San Miguel	P. de San Miguel	P. de San Miguel
V2	27 August 2021	Second draft, MCP	B. Yanez / C. Kains	M. Spence	M. Spence	M. Spence
V3	9 September 2021	Third draft, MCP, with updated figures	B. Yanez			P. Tapsell

Mine Closure Plan Cover Page

Table 1 1: Mine Closure Plan Requirements

Mine Closure Plan Requirements	
Title	Mackay Potash Project Mine Closure Plan
Site Name and Code	Greenfields Site
Document Version Number	V2
Date of Submission	September 2021
Tenements	E80/4887 E89/4888 E80/4889 E80/4890 E80/4893 E80/4995 E80/5055 E80/5124 E80/5172 L80/87 L80/88 *EL30651 (NT)(application)* *EL31870 (NT) (application)* *EL31871 (NT) (application)*
Tenement holder or Authorised Company/Person	Agrimin Potash Pty Ltd
Contact Details	Mark Savich Chief Executive Officer and Executive Director Agrimin Limited 2C Loch Street Nedlands WA 6009 admin@agrimin.com.au +61893895363

Checklist: Mine Closure Plan

Qu No	Mine Closure Plan (MCP) Checklist	Y/N NA	Page No	Comments	Changes from previous version	Page No.	Summary
1	Has the Checklist been endorsed by a senior representative within the tenement holder/operating company? (See bottom of Checklist.)	Y	vi		N/A		
Public Availability							
2	Are you aware that all approved MCPs will be made publicly available?	Y			N/A		
3	Is there any information in this MCP that should not be publicly available?	N			N/A		
4	If "Yes" to Q3, has confidential information been submitted in a separate document/section?	N/A			N/A		
Cover Page, Table of Contents							
5	Does the MCP cover page include • Project Title • Company Name • Contact Details (including telephone numbers and email addresses) • Document ID and version number • Date of submission (needs to match the date of this checklist)	Y	i		N/A		
Scope and Purpose							
6	State why the MCP is submitted (e.g. as part of a mining Project, a reviewed MCP or to fulfil other legal requirements)	Y	1		N/A		
Project Overview							
7	Does the project summary include: • Land ownership details (include any land management agency responsible for the land / reserve and the purpose for which the land / reserve (including surrounding land) is being managed) • Location of the project • Comprehensive site plan(s)	Y	7		N/A		

Qu No	Mine Closure Plan (MCP) Checklist	Y/N NA	Page No	Comments	Changes from previous version	Page No.	Summary
	• Background information on the history and status of the project.						
Legal Obligations and Commitments							
8	Does the MCP include a consolidated summary or register of closure obligations and commitments?	Y	12		N/A		
Stakeholder Engagement							
9	Have all stakeholders involved in closure been identified?	Y	13		N/A		
10	Does the MCP include a summary or register of historic stakeholder engagement with details on who has been consulted and the outcomes?	Y	14		N/A		
11	Does the MCP include a stakeholder consultation strategy to be implemented in the future?	Y	15		N/A		
Post-mining land use(s) and Closure Outcomes							
12	Does the MCP include agreed post-mining land use(s), closure outcomes and conceptual landform design diagram?	Y	51	Conceptual landform design diagram has been identified as a knowledge gap and will continue to be updated. Closure outcomes in page 53.	N/A		
13	Does the MCP identify all potential (or pre-existing) environmental legacies, which may restrict the post mining land use (including contaminated sites)?	Y	11	For contaminated sites refer to page 45	N/A		
14	Has any soil or groundwater contamination that occurred, or is suspected to have occurred, during the operation of the mine, been reported to DWER as required under the Contaminated Sites Act 2003?	N	45		N/A		
Development of Completion Criteria							
15	Does the MCP include an appropriate set of specific completion criteria and closure performance indicators?	Y	53		N/A		

Qu No	Mine Closure Plan (MCP) Checklist	Y/N NA	Page No	Comments	Changes from previous version	Page No.	Summary
Collection and Analysis of Closure Data							
16	Does the MCP include baseline data (including pre-mining studies and environmental data)?	Y	18		N/A		
17	Has materials characterisation been carried out consistent with applicable standards and guidelines (e.g. GARD Guide)?	Y	26		N/A		
18	Does the MCP identify applicable closure learnings from benchmarking against other comparable mine sites?	Y	49		N/A		
19	Does the MCP identify all key issues impacting mine closure objectives and outcomes (including potential contamination impacts)?	Y	46		N/A		
20	Does the MCP include information relevant to mine closure for each domain or feature?	Y	63		N/A		
Identification and Management of Closure Issues							
21	Does the MCP include a gap analysis/risk assessment to determine if further information is required in relation to closure of each domain or feature?	Y	52		N/A		
22	Does the MCP include the process, methodology, and has the rationale been provided to justify identification and management of the issues?	Y	52		N/A		
Closure Implementation							
23	Does the MCP include a summary of closure implementation strategies and activities for the proposed operations or for the whole site?	Y	63		N/A		
24	Does the MCP include a closure work program for each domain or feature?	Y	76		N/A		
25	Does the MCP contain site layout plans to clearly show each type of disturbance as defined in Schedule 1 of the MRF Regulations?	Y	10		N/A		
26	Does the MCP contain a schedule of research and trial activities?	Y	63		N/A		
27	Does the MCP contain a schedule of progressive rehabilitation activities?	Y	63		N/A		
28	Does the MCP include details of how unexpected closure and care and maintenance will be handled?	Y	79		N/A		

Qu No	Mine Closure Plan (MCP) Checklist	Y/N NA	Page No	Comments	Changes from previous version	Page No.	Summary
29	Does the MCP contain a schedule of decommissioning activities?	Y	79		N/A		
30	Does the MCP contain a schedule of closure performance monitoring and maintenance activities?	Y	80		N/A		
Closure Monitoring and Maintenance							
31	Does the MCP contain a framework, including methodology, quality control and remedial strategy for closure performance monitoring including post-closure monitoring and maintenance?	Y	80		N/A		
Financial Provisioning for Closure							
32	Does the MCP include costing methodology, assumptions and financial provision to resource closure implementation and monitoring?	Y	83		N/A		
33	Does the MCP include a process for regular review of the financial provision?	Y	83		N/A		
Management of Information and Data							
34	Does the MCP contain a description of management strategies including systems and processes for the retention of mine records?	Y	84		N/A		

Corporate Endorsement

"I hereby certify that to the best of my knowledge, the information within this Mine Closure Plan and checklist is true and correct and addresses all the requirements of the Guidelines for the Preparation of a Mine Closure Plan approved by the Director General of Mines, Industry Regulation and Safety.

Name: _____ Signed: _____

Position: _____

Date: _____

(NB: The corporate endorsement must be given by tenement holder(s) or a senior representative authorised by the tenement holder(s), such as a Registered Manager or Company Director).

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1. Project Summary

1.1 Scope and Purpose

1.1.1 Purpose

The following Mine Closure Plan (MCP) has been prepared as a component of documentation submitted to the Western Australian Environmental Protection Authority (EPA) for its assessment of the proposed Agrimin Limited (Agrimin) Mackay Potash Project (the Project). The Project is to be assessed under Part IV of the *Environmental Protection Act 1986* (EP Act). The MCP has been developed as an Appendix of the Environmental Review Document (ERD).

This MCP will be submitted to the Department of Mines, Industry Regulation, and Safety (DMIRS) and EPA. Agrimin has addressed the DMIRS *Statutory Guidelines for Mine Closure Plans* and accompanying *Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans* (DMIRS 2020) in preparing this MCP.

This MCP has also been prepared in accordance with the:

- *Mining Act 1978* (WA);
- Mines Safety and Inspection Regulations 1995 (WA) [MSIR]; and
- *Contaminated Sites Act 2003* (WA) [CS Act].

This MCP fulfils the requirement for a plan outlining the decommissioning and closure of facilities in accordance with the 1995 MSIR and the requirements of the EPA, and Department of Water and Environmental Regulation (DWER)[1]. This plan addresses:

- removal, or if appropriate, disposal on-site of plant and infrastructure;
- rehabilitation of disturbed areas to agreed final land use(s); and
- the process for the identification of contaminated sites.

A comprehensive list of relevant legislation and regulatory guidance documents pertaining to mine closure that have been referred to when preparing this MCP, is provided in Section 2.

The DMIRS objective for rehabilitation and closure is that mining activities are rehabilitated and closed in a manner to make them physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use without unacceptable liability to the State.

Planning for the Project's closure and rehabilitation is undertaken in an effective and progressive manner in order to prevent and minimise adverse long term environmental, social, and economic impacts. In general, mine closure works aim to:

- minimise the footprint of operations upon closure;
- determine the optimum strategies for effective closure and rehabilitation of the site;
- progressively rehabilitate disturbed areas during the Project's life;
- monitor the site during operations and upon completion of rehabilitation activities to ensure adaptive management and to demonstrate compliance with closure objective; and
- meet closure obligations and reduce unacceptable liability to the State of WA.

[1] The Department of Water (DoW), the Department of Environmental Regulation (DER) and the Office of the Environmental Protection Authority (OEPA) merged on 1 July 2017 to become the Department of Water and Environmental Regulation (DWER). Publications produced by either agency have been continued to be referenced as such.

In addition, Agrimin's Environmental Policy states (specifically with regard to closure and rehabilitation) that it will:

- rehabilitate sites or areas disturbed as required by applicable closure requirements to a safe, stable, and non-polluting, self-sustaining agreed end land use; and
- work with the community and stakeholders with the aim of achieving mutually acceptable outcomes from all areas of operation.

This MCP has been prepared to enable Agrimin to ensure that all closure obligations are met. These core goals have been instrumental when developing this MCP.

1.1.2 Project Description

Agrimin propose to develop a greenfields Sulphate of Potash (SOP) fertiliser operation. The Project is located in the Eastern Pilbara region of Western Australia (WA), adjacent to the WA and Northern Territory (NT) border. Agrimin propose to extract shallow brine-hosted potash from the top 3 m layer of salt lake sediment on Lake Mackay.

The process will involve a network of shallow trenches whereby brine will flow along the trenches into a series of solar evaporation ponds to precipitate SOP bearing salts. These salts will be wet harvested and pumped to a processing plant designed to produce 450,000 tonnes per year of SOP as dry granular product. The Project has a proposed project life of 20 years with targeted construction commencing in late 2022/early 2023 and first production of potash in 2025, with 50% production in 2026 and 100% production by 2027. Land disturbance for the entire Project will total up to 16,500 ha and comprise up to 15,000 ha within the On-Lake Development Envelope (On-LDE), 1,000 ha within the Northern Infrastructure Development Envelope (NIDE), 300 ha within the Southern Infrastructure Development Envelope (SIDE) and 200 ha within the Off-Lake Development Envelope (Off-LDE). The Project will include the development of the following key components (Figure 1-1):

- On-lake infrastructure: brine extraction trenches, waste salt stockpiles, solar evaporation ponds and salt harvesters;
- Off-lake infrastructure: processing plant, power station, process water borefield and associated site facilities; and
- Logistics infrastructure: haul road, port storage facility and barge loading facility (the latter two components are not part of the scope of this MCP).

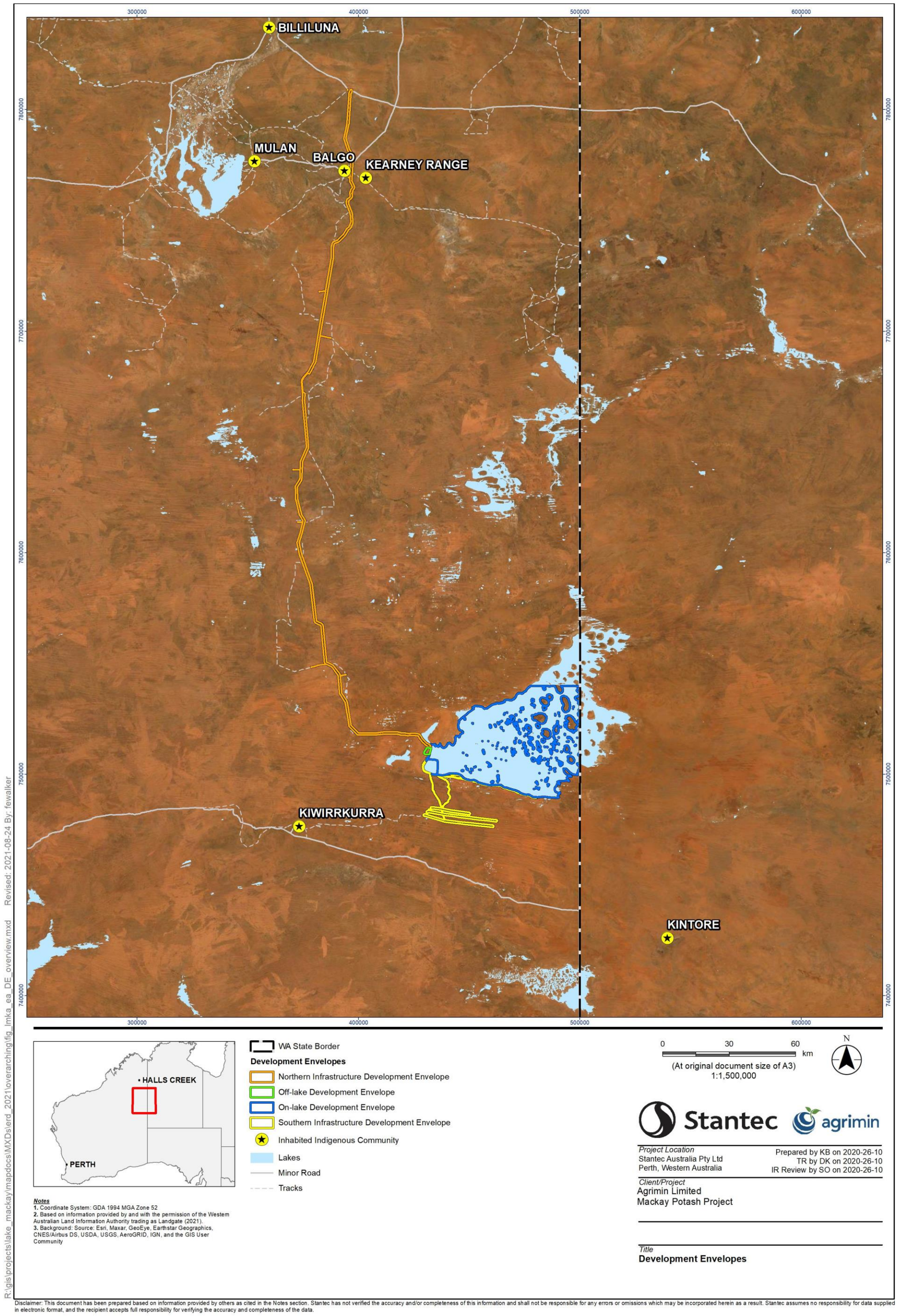

Figure 1-1: Schematic of key Project components

A simplified process flow diagram for the processing plant is shown in **Figure 1-2**. The processing plant is designed to receive 3.0 Mtpa of raw potash salts, being fed from the evaporation ponds via two slurry pipelines. The salts will be crushed and the slurry from the crushing circuit will be fed into a thickener to minimise the amount of brine that moves forward into the next stages of the process.

The salt slurry exiting the thickener will be transferred to a series of conversion vessels where the raw potash salts will be converted into a single potash-bearing salt mineral in the form of schoenite. The resulting slurry exiting the conversion circuit will contain only schoenite and halite and will be transferred to the flotation circuit. The salt slurry exiting the conversion circuit will then be mixed with flotation reagents in the conditioning tanks prior to being transferred to the flotation cells where the schoenite is preferentially floated from the halite. The combination of the flotation and leach reactors ensures that the concentrate is of the right schoenite quality and the recovery from the slurry is achieved. The resulting schoenite concentrate will be de-brined and fed to the first stage SOP crystalliser to initiate SOP production.

The SOP crystallisation step will take place at an elevated temperature to dissolve magnesium sulphate and crystallise SOP (K_2SO_4) within the SOP crystalliser vessels. The resulting SOP slurry will be transferred to a hydrocyclone followed by a centrifuge. The SOP will then be dried and stockpiled in a covered storage area prior to haulage to Agrimin's storage facility at Wyndham Port.

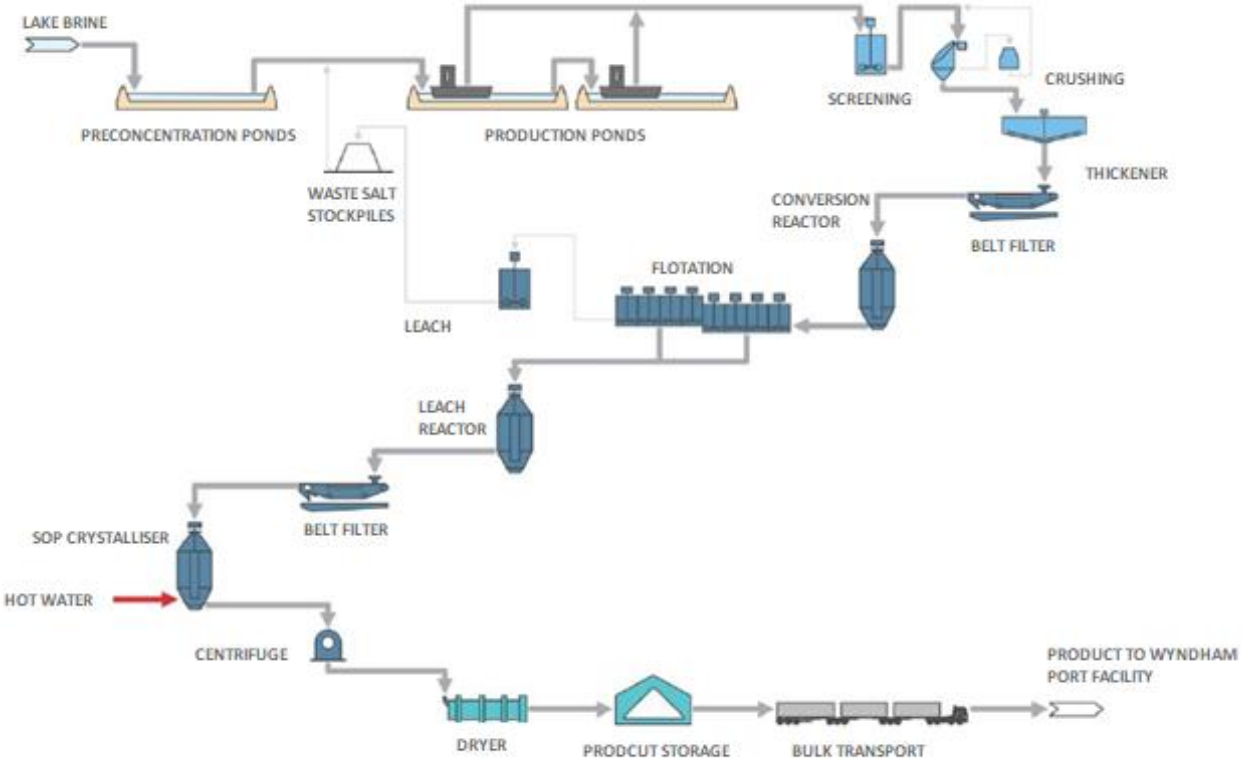

Figure 1-2: Simplified process flow diagram for the processing plant

1.1.3 MCP Structure

This MCP sets out a strategic approach to mine closure. It should be noted that as this is the first Mine Closure Plan (MCP) to be submitted for the Mackay Potash Project, following the submission of the first draft conceptual mine closure plan, no *Reviewed mine closure plans* section has been included in this MCP. The plan is set out in accordance with the 2020 Statutory Guidelines sections as follows:

- Project summary;
- Identification of closure obligations and commitments;
- Stakeholder engagement;
- Baseline and closure data and analysis;
- Post-mining land use;
- Closure risk assessment;
- Closure outcomes and completion criteria;
- Closure implementation;
- Closure monitoring and maintenance;
- Financial provisioning for closure; and
- Management of information and data.

1.1.4 MCP Scope

This MCP addresses closure requirements for the proposed Agrimin mining tenements (currently Exploration Licences) as presented in Table 1-1. The Western Australian tenements cover an area of 349,995 hectares (ha). Figure 1-3 depicts the extent of the tenure covered within this MCP. The Project area covers on and off lake development, haul roads and water pipeline corridors. The relevant mining tenure will be obtained under the Mining Act 1978 to support mining and processing activities. The Project excludes development on the Northern Territory side of Lake Mackay.

Although this MCP reflects the current state of closure planning, once approved, this document is intended to be continually reviewed and updated over the life of the Project.

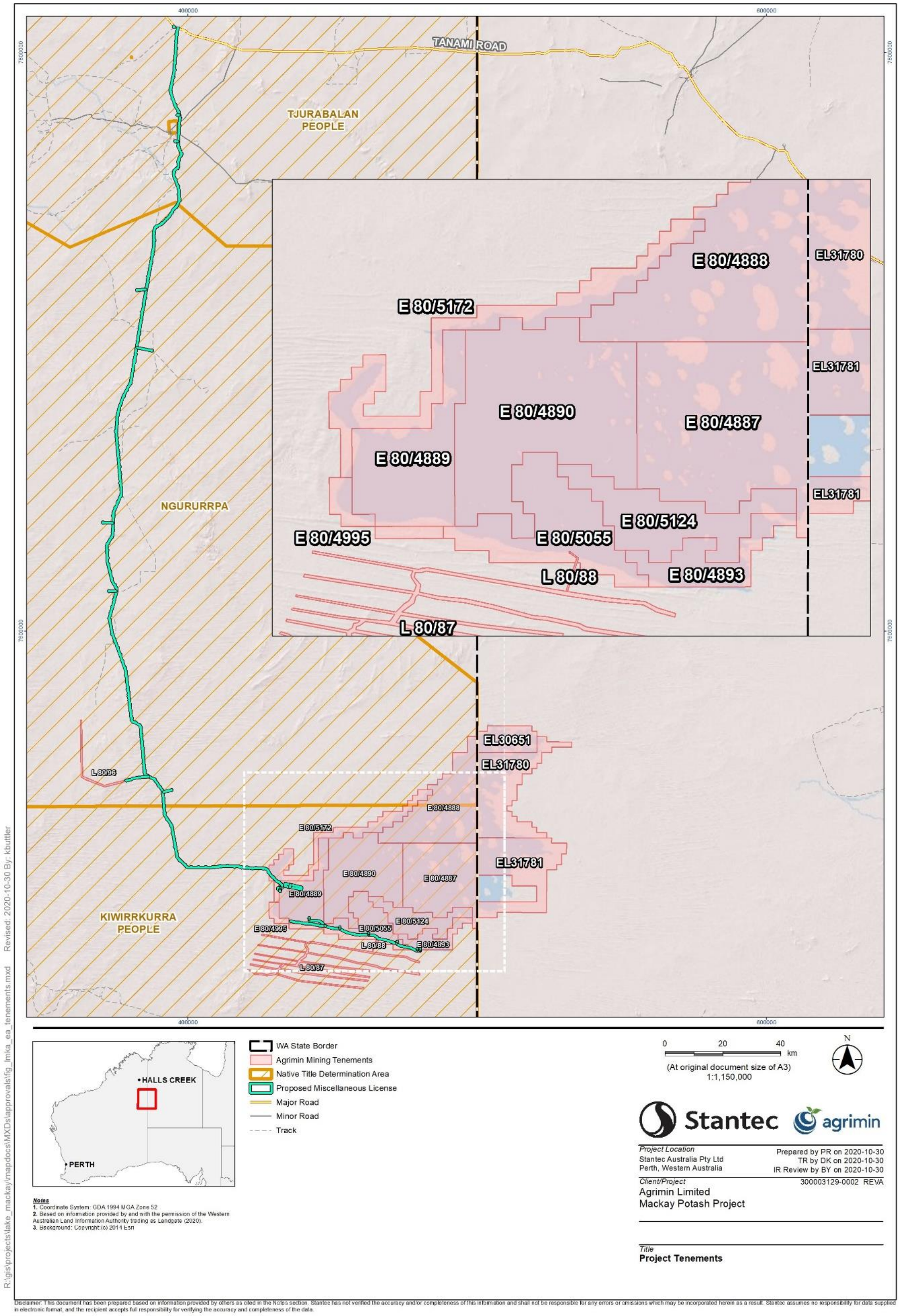

Figure 1-3: Agrimin Lake Mackay Project Area tenements

1.2 Location, Ownership, Tenure and Setting

The Project is part of the Kimberly Mineral Field 80, located in the Pilbara region of WA, within the Shire of East Pilbara. The Kiwirrkurra community is the closest township to the Project, located 120 km south-west by road. The Project is approximately 490 km south of Halls Creek and approximately 785 km south of the Port of Wyndham (**Figure 1-4**).

The tenements which are the subject of this MCP are all held by wholly owned subsidiary companies of Agrimin Limited. Agrimin Limited (Agrimin) (the Proponent) is a Western Australian minerals company that has 100% ownership of the Mackay Potash Project. Agrimin's Australian Company Number is 122 162 396. The structure of companies associated with the tenements listed in **Table 1-1**. There is currently a pending application for a Miscellaneous Licence associated with the haul road.

Table 1-1: Project Tenements

Tenure	Tenement Type	Tenement Holder	Issue Date	Expire Date	Tenement Area (ha)	Development Envelope
E80/4887 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	22/01/2015	21/01/2025	61,681	On-LDE
E80/4888 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	28/04/2015	27/04/2025	63,360	On-LDE
E80/4889 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	22/01/2015	21/01/2025	27,196	NIDE, On-LDE, Off-lake and SIDE
E80/4890 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	22/01/2015	21/01/2025	63,270	On-LDE
E80/4893 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	22/01/2015	21/01/2025	11,372	SIDE and On-LDE
E80/4995 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	18/07/2017	17/07/2022	4,740	SIDE and On-LDE
E80/5055 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	27/07/2017	26/07/2022	52,912	SIDE and On-LDE
E80/5124 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	11/07/2018	10/07/2023	21,805	On-LDE
E80/5172 (WA)	Exploration Licence	Agrimin Potash Pty Ltd	11/02/2010	10/02/2024	29,127	NIDE, On-LDE, Off-lake and SIDE
L80/87 (WA)	Miscellaneous Licence	Agrimin Potash Pty Ltd	10/02/2017	09/02/2038	14,379	SIDE
L80/88 (WA)	Miscellaneous Licence	Agrimin Potash Pty Ltd	06/09/2017	05/09/2038	153	SIDE
L80/96 (WA)	Miscellaneous Licence	Agrimin Potash Pty Ltd	11/02/2010	10/02/2024	1,988a	NIDE
EL30651 (NT) (application)	Exploration Licence	Agrimin Limited	N/A	N/A	18,010	Excluded from Proposal Area
EL31870 (NT) (application)	Exploration Licence	Agrimin Limited	N/A	N/A	52,817	Excluded from Proposal Area
EL31871 (NT) (application)	Exploration Licence	Agrimin Limited	N/A	N/A	53,122	Excluded from Proposal Area

The East Pilbara Shire covers an area of 372,571 km^2 with an estimated resident population of approximately 10,600 people. The major localities within the shire are Newman and Nullagine. The majority of land within the Mackay subregion is unallocated crown land, with areas of conservation, mining leases, and Aboriginal lands and reserves. There are several small areas of urban development in the subregion and approximately 7% of the Great Sandy Desert bioregion is used for grazing (Kendrick 2001).

1.2.1 Native Title

The Project lies within three Native Title Determination Areas proclaimed under the NT Act:

- Kiwirrkurra Determination Area (Determination Number: WCD2001/002);
- Ngururrpa Determination Area (Determination Number: WCD2007/004); and
- Tjurabalan Determination Area (Determination Number WCD2001/001).

Agrimin has signed a Native Title Agreement (WAD6019/1998) with the Tjamu Registered Native Title Body Corporate for the Kiwirrkurra People. Agrimin has also prepared a Cultural Heritage Management Plan (CHMP) with the Kiwirrkurra People Native Title holders to manage interactions and dealings with Traditional Owners.

The Project is also located within Part III Aboriginal Reserve 24923 that was created under the Aboriginal Affairs Planning Authority Act 1972. Under this Act, the Kiwirrkurra Native Title holders have exclusive rights to occupy, use and benefit from the Reserve. Land within the within Part III Aboriginal Reserve 24923 is non-transferable freehold title under the Aboriginal Land Rights Act 1976. Agrimin has been issued with mining entry permits by the Minister for Aboriginal Affairs, authorising it to access the Aboriginal Reserve and the Minister for Mines and Petroleum has issued the corresponding Consent to Mine notices.

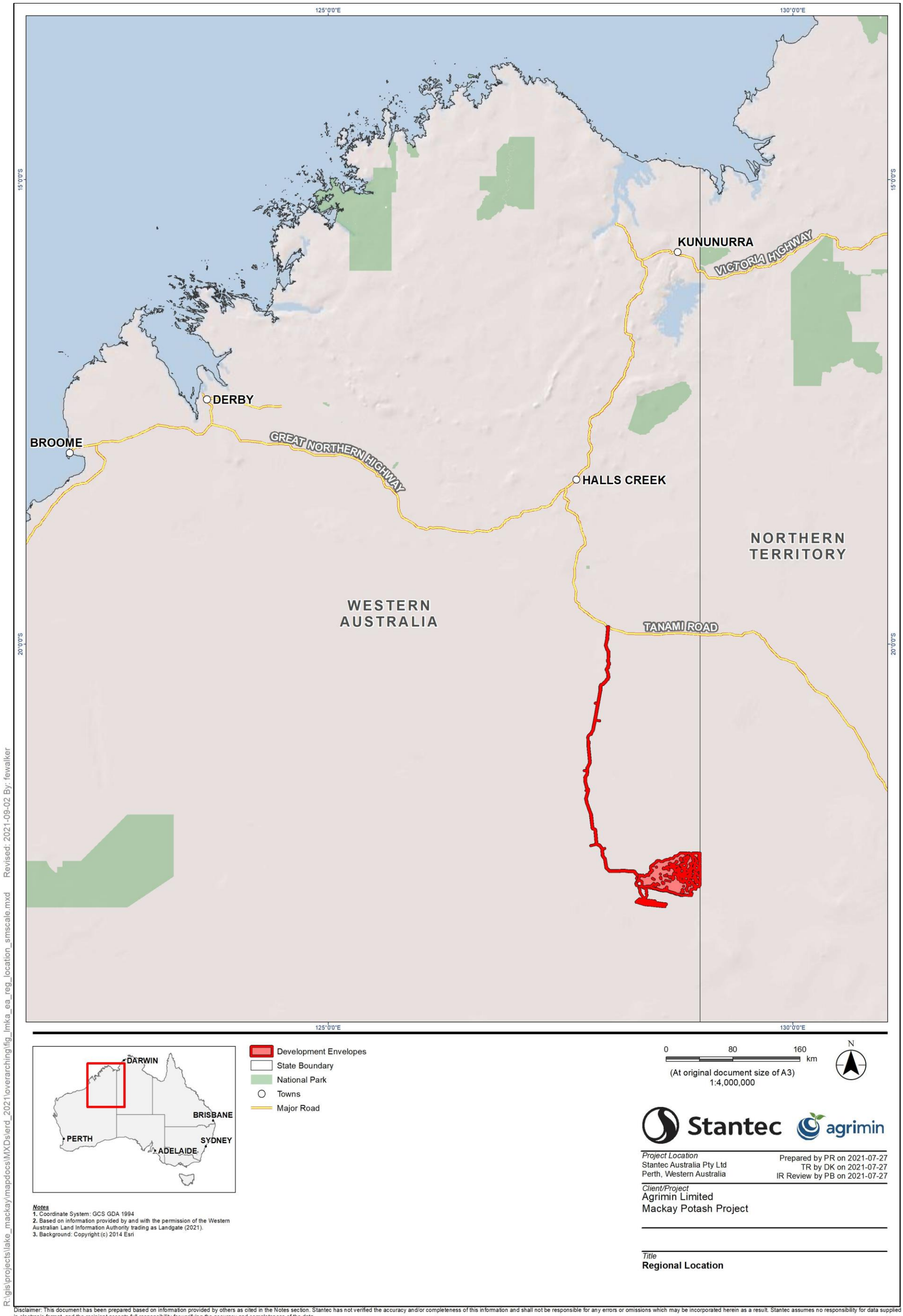

Figure 1-4: Regional location of the Project

1.3 Project History

A summary of the Project history is tabulated below in Table 1-2.

Table 1-2: Mining and Approval History

Date	Milestone
1930	Lake Mackay formally discovered by Donald George Mackay.
1996	Samples of the lake collected by Geoscience Australia and analysed for magma typing, age determination, alteration mapping and evaluation.
1995-1996	Mapping, aerial and ground magnetic/radiometric data acquisition and geotechnical surveys conducted by Aurora Gold.
1996-1997	BHP Billiton exploration into iron oxide-copper-gold (IOCG) in the area. Depth to basement approximated at 300 m below surface.
2006	Ground based gravity survey by Geological Survey of Western Australia.
2007	Geoscience Australia and Geological Survey of Western Australia worked together to conduct a regional geochemistry investigation.
2009	Reward Minerals Ltd.'s (Reward) subsidiary Holocene Pty Ltd - exploration of the lakebed for uranium, precious and base metal deposits.
2013	Joint venture entered into by Rum Jungle Resources and Toro Energy, giving Rum Jungle Resources potash exploration rights to the southern part of the lake.
2007-2014	Reward held tenements covering the majority of the lake. After 2009 drilling program, Rewards intended to begin development of a mining program.
2014	Reward surrendered its tenement holdings based on the timeframe and holding costs outweighing the project progress.
2014	Agrimin applied for four exploration licenses.
2015	Agrimin begun exploration, heritage, and environmental activities at the Project.
2017	Eight more exploration licenses were obtained by Agrimin who then consolidated control of Lake Mackay.
2017-2019	Extensive pump testing exploration and feasibility programs underway at Lake Mackay to construct the geological and hydrogeological models to support the Mineral Resource Estimate, Ore Reserve and DFS Mine Planning.
2019	EPA determines that the Project is to be assessed at the level of Public Environmental Review (PER).
2019 - 2021	Preparation of key technical studies and approvals documentation.

1.4 Project Domains and Features

1.4.1 Domain and Feature Classification and Development Envelopes

To facilitate effective closure planning, the Project has been divided into a number of physically distinct 'domains' and 'features'. The domains are comprised of features that have similar rehabilitation, decommissioning and closure objectives and requirements. These domains and features are spread out across a series of development envelopes:

- On-lake (On-LDE);
- Off-lake (Off-LDE);
- Southern Infrastructure (SIDE); and
- Northern Infrastructure (NIDE).

The closure domains applicable to this MCP and summary of the planned features within each domain showing their position in relation to the development envelopes are described further in Section 8.1.

1.4.2 Historic Liability

At this stage in the development of the Project, there have been no significant environmental impacts identified and historic exploration programmes have been successfully initiated and completed. No known encumbrances or environmental liabilities are associated with the Project at the time of developing the MCP. Amendments to this section will be made in future iterations of the MCP where required.

2. Identification of Closure Obligations and Commitments

All legal obligations relevant to rehabilitation and closure of the Project have been identified using records available at the time of development of this MCP and are compiled in the Project's Legal Obligations Register (LOR) (Appendix A).

As this is a greenfields site, the current LOR only includes legally binding conditions included within tenement conditions and an exploration Program of Works (PoW). Future revisions of the MCP will include all legally binding conditions, commitments, and obligations applicable under State and Commonwealth legislation, including where relevant the Mining Act, MSIR, CS Act and the Western Australian Aboriginal Heritage Act (AHA) 1972. It will also include any legally binding conditions included within Mining Projects, Commitments, DWER Licence Conditions and all other legally binding documents relevant to the Project.

Decommissioning and rehabilitation of the Project will be conducted in accordance with the general provisions of the following key policy documents and related guidelines:

- Agrimin's Environmental Policy;
- the Principles of the Strategic Framework for Mine Closure (ANZMEC/MCA 2000);
- the Mine Closure Handbook (DITR 2016);
- the Integrated Mine Closure Good Practice Guide (ICMM 2019);
- the Western Australian Biodiversity Science Institute's A Framework for developing mine-site completion criteria in Western Australia (Young et al. 2019); and
- the Mine Rehabilitation Handbook, (DIIS 2016).

This MCP has also been prepared with consideration of the key objectives for closure planning included in the Strategic Framework for Mine Closure (ANZMEC/MCA 2000) which are to:

- protect the environment and public health and safety by using safe and responsible closure practices;
- reduce or eliminate environmental effects once the mine ceases operations;
- establish conditions which are consistent with the pre-determined end land use objectives; and
- reduce the need for long term monitoring and maintenance by establishing effective physical and chemical stability of disturbed areas.

3. Stakeholder Engagement

Agrimin is committed to ongoing stakeholder communication, engagement and consultation through the planning and approvals phase, as well as the construction, operational and closure phases of the Project. Agrimin's stakeholder engagement process follows the five guiding principles from the Australian and New Zealand Minerals and Energy Council and the Minerals Council of Australia Strategic Framework for Mine Closure (ANZMEC/MCA 2000). These essentially encompass:

- identification of all stakeholders and interested parties;
- continuous engagement with all parties throughout the life of the Project;
- a targeted communication strategy which reflects needs of stakeholder groups;
- ensuring adequate resources are allocated for effective engagement; and
- working closely with communities to manage potential impacts of mine closure.

DMIRS are recognised by Agrimin as their key external stakeholder for mine closure.

The stakeholder strategy between 2014 to 2021 has so far focused primarily on introducing the project and project scope to key stakeholders and regulatory agencies and on the referral supporting documentation. The Project Stakeholder Engagement Register, which details all consultation undertaken since 2014, is presented in **Appendix B.**

3.1 Stakeholder Identification

A list of Agrimin's key internal and external stakeholders, categorised into groups, is provided below.

3.1.1 Internal Stakeholders

- Agrimin's Senior Leadership Team; and
- Agrimin's Environmental Management Team and Contractor workforce.
- Agrimin's Shareholders

3.1.2 External Stakeholders

3.1.2.1 Indigenous Groups and Native Title Representative Bodies

- Tjamu Aboriginal Corporation and Kiwirrkurra People;
- Parna Ngururrpa Aboriginal Corporation and Ngururrpa People;
- Tjurabalan Native Title Land Aboriginal Corporation and Tjurabalan People;
- Central Desert Native Title Services;
- Kimberley Land Council; and
- Central Land Council.

3.1.2.2 Commonwealth Government Agencies

- Department of Agriculture, Water, and the Environment (DAWE)

3.1.2.3 Western Australian State Government Agencies

- Environmental Protection Authority (EPA);
- Department of Mines, Industry Regulation and Safety (DMIRS);
- Department of Water and Environmental Regulation – EPA Services (EPAS);
- Department of Water and Environmental Regulation – Water (DWER – Water);
- Department of Water and Environmental Regulation - Environmental Regulation (DWER – Regulation);
- Department of Biodiversity, Conservation and Attractions (DBCA);
- Department of Planning, Lands and Heritage (DPLH);
- Main Roads Western Australia (MRWA);

- Department of Jobs, Tourism, Science, and Innovation (DJTSI);
- Department of Fire and Emergency Services (DFES);
- Civil Aviation Safety Authority (CASA); and
- Members of Parliament.

3.1.2.4 Northern Territory Government Agencies

- Department of Environment, Parks and Water Security
- Department of Industry, Tourism and Trade

3.1.2.5 Local Government Authorities

- Shire of East Pilbara;
- Shire of Halls Creek; and
- Shire of Wyndham-East Kimberley.

3.1.2.6 Other

- Environmental interest groups; and
- The Night Parrot Recovery Team

3.1.2.7 Industry Groups

- Chamber of Commerce and Industry

3.2 Consultation Process

Agrimin has undertaken extensive stakeholder consultation as part of the Project design and feasibility assessments (**Appendix B**). This included presentations and briefings to stakeholder groups including representatives from environment, heritage, community, and Indigenous groups, local, State and Commonwealth Government agencies. Agrimin maintains a Stakeholder Engagement Register that includes specific consultation with stakeholders and a detailed response to issues is provided.

Agrimin will consider internal and external stakeholders in developing the post mining land use, closure objectives and completion criteria for the Project. Agrimin will ensure that there is an explicit, written legal agreement with the subsequent land managers to accept the mining legacy obligations and any outstanding costs of remediation, monitoring and reporting.

The general process utilised for stakeholder consultation includes:

- the development of a stakeholder database;
- providing Project information to key stakeholders;
- seeking feedback from stakeholders on potential environmental and social impacts, impact management and project design;
- documentation of issues raised and how they have been considered during project development;
- consideration of issues raised in project design and management plans; and
- development or modification of closure planning to reflect approved outcomes regarding post-closure land use. This may include legal obligations, closure objectives and criteria, monitoring and maintenance programs.

3.3 Future Stakeholder Engagement Strategy

A Closure Stakeholder Engagement Strategy (**Table 3-1**) has been developed to promote effective stakeholder consultation. The approach seeks input and feedback on post-closure land use, closure objectives and criteria. Mechanisms for recording stakeholder input, considering stakeholder views, and responding to stakeholders are built into the strategy. Agrimin is committed to the implementation of this stakeholder engagement strategy. The proposed frequency and timing are also presented for the individual stakeholder groups. The stakeholder engagement strategy will continue to be refined in future iterations of the MCP, including the relevant responsible person and updating to include any further identified stakeholders.

Table 3-1: Closure Stakeholder Engagement Strategy

Group	Stakeholder	Area of Interest / Topics	Consultation Method / Frequency	Responsible Person
Commonwealth Government Agencies	• Commonwealth Department of Agriculture, Water, and the Environment (DAWE)	Matters of National Environmental Significance, impacts at closure to MNES	As required and through feedback on the closure plan.	Agrimin General Manager
Western Australian State Government Agencies	• Environmental Protection Authority (EPA); • Department of Mines, Industry Regulation and Safety (DMIRS); • Department of Water and Environmental Regulation – EPA Services (EPAS); • Department of Water and Environmental Regulation – Water (DWER – Water); • Department of Water and Environmental Regulation - Environmental Regulation (DWER – Regulation); • Department of Biodiversity, Conservation and Attractions (DBCA); • Department of Planning, Lands and Heritage (DPLH); • Main Roads Western Australia (MRWA); • Department of Jobs, Tourism, Science, and Innovation (DJTSI); • Department of Fire and Emergency Services (DFES); • Civil Aviation Safety Authority (CASA); and • Members of Parliament.	Closure planning, end land use, closure objectives and criteria, pit closure and abandonment options lease relinquishment. Access and roads maintenance.	Review and approval of closure plan every 3 years, other communications as required prior to closure works.	
Northern Territory Government Agencies	• Department of Environment, Parks and Water Security • Department of Industry, Tourism and Trade	Closure planning, end land use.	As required and through closure planning process.	
Local Government Authorities	• Shire of East Pilbara; • Shire of Halls Creek; and • Shire of Wyndham-East Kimberley.	Closure planning, end land use, closure objectives and criteria, pit closure and abandonment options lease relinquishment.	Consultation as part of closure planning processes as required.	
Native Title Representative Bodies	• Central Desert Native Title Services; and • Kimberley Land Council.	End land use, business opportunities, heritage protection, site access,	Review and feedback on closure plan every 3 years, other	Agrimin General Manager

Group	Stakeholder	Area of Interest / Topics	Consultation Method / Frequency	Responsible Person
		cultural and recreational activities.	communications as required prior to closure works.	
Indigenous Groups	• Tjamu Tjamu Aboriginal Corporation and Kiwirrkurra People; • Parna Ngururrpa Aboriginal Corporation and Ngururrpa People; and • Tjurabalan Native Title Land Aboriginal Corporation.	End land use, business opportunities, heritage protection, site access, cultural and recreational activities.	Review and feedback on closure plan every 3 years, other communications as required prior to closure works.	General Manager
Interest Groups/Other	• Night Parrot Recovery Team; and where relevant for future consultation, interest groups potentially including but not limited to: • Conservation Council of Western Australia (CCWA); • Wildflower Society of Western Australia; • Waterbird Conservation Group; • Birdlife Australia; and • Waterbird Conservation Group	Land conservation, flora and fauna protection, end land use, closure objectives and criteria.	Future consultation as part of closure planning processes as required.	Agrimin General Manager
Industry Groups	• Chamber of Commerce and Industry.	End land use and business opportunities.	Consultation as part of closure planning processes as required.	
Internal Stakeholders	• Employees, managers, contractors • Agrimin shareholders	Employment, closure	Internal communications systems, as required	Agrimin General Manager

4. Baseline and Closure Data and Analysis

This Section provides available baseline data, and potential associated closure implications for the Project. Where appropriate, knowledge gaps, associated risk, and proposed controls and/or investigative tasks are considered. Baseline data will be utilised in the refinement of the completion criteria and effective mitigation and management of identified risks during the proposed closure implementation program. Once operations commence, this section will be further developed to include other information such as progressive rehabilitation and trials where relevant and updates to or new key technical studies.

4.1 Baseline Environmental Data

The following sections provide a summary of details of the Project physical and biological environment including:

- biogeographical context;
- land use;
- local climatic conditions;
- physical characteristics;
- hydrology and hydrogeology;
- local and regional ecological information (flora, fauna, ecology, communities, and habitats);
- heritage; and
- contaminated sites

4.1.1 Biogeographical Context

The majority of the Project is located within the Mackay subregion (GSD2) of the Great Sandy Desert (GSD) bioregion (**Figure 4-1**), within the Eremaean Botanical Province of WA. The GSD is characterised by gently undulating plains dominated by longitudinal dunes of varying frequency, comprising tree-steppe degrading to shrub-steppe in the southeast and open hummock grasslands with scattered trees (*Owenia reticulata*, *Eucalyptus* spp.) and shrubs (*Acacia* spp. and *Grevillea* spp.) (Beard 1990). The GSD2 subregion comprises 18,636,695 ha within the GSD, encompassing paleo-drainage systems including salt-lake chains with samphire low shrublands, and areas of sand dune fields over sandstones (Kendrick 2001). The landscape is built up of laterised uplands that support *Acacia* shrublands over *Triodia pungens* hummock grass (Kendrick 2001).

The northern portion of the Project extends into the Tanami Desert 1 subregion (TAN1) of the Tanami Desert bioregion. The Tanami Desert bioregion is characterised by gently undulating sandy plains with longitudinal dunes with shrub-steppe of *Triodia pungens*, and the occasional low rocky ranges and laterite-crusted uplands, comprising tree-steppe and plains of grass savanna (Beard 1990). The TAN1 subregion comprises 3,214,599 ha, encompassing sandplains that support *Hakea* spp., desert bloodwoods, *Acacia* spp. and *Grevillea* spp. over spinifex, with calcareous deposits from rivers and lakes throughout the landscape (Graham 2001). In the north of the subregion, the calcareous deposits support ribbon grass (*Chrysopogon spp.*) and Flinders grass (*Iseilema spp.*) and short-grasslands with river red gum (*Eucalyptus camaldulensis*) (Graham 2001).

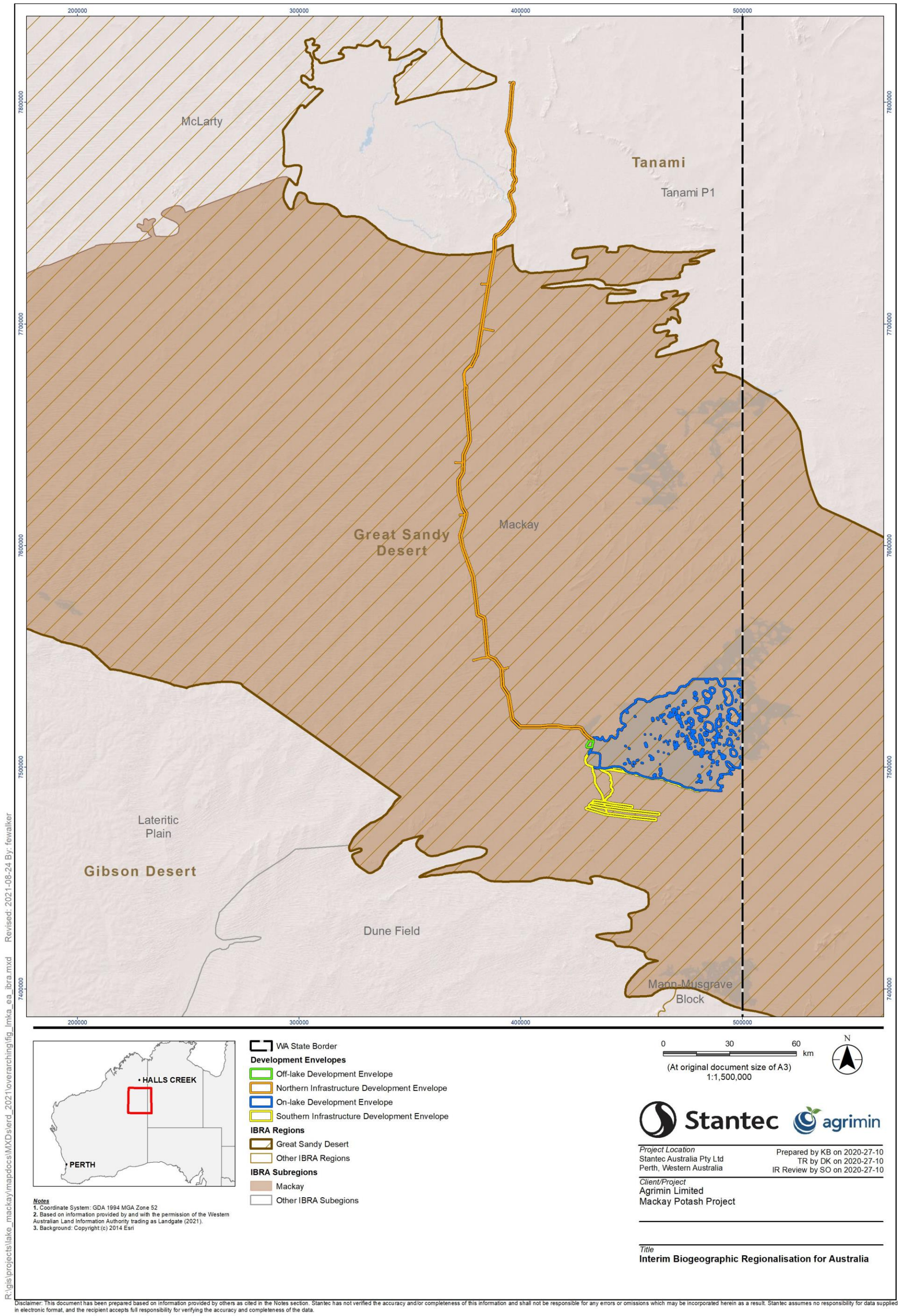

Figure 4-1: Location of the Project within the Great Sandy Desert bioregion and the Mackay subregion

4.1.2 Land Systems

The Project lies predominantly within the SV12 land system (Tille 2006b) of low to steep hilly country with mesas and buttes with extensive valley plains (Table 4-1, Figure 4-2).

Table 4-1: Land Systems and their extent within the Project area

Land System	Description	Extent within Proposal Area	
		ha	proportion (%)
SV12	Plains studded with salt pans, seasonal lakes; calcrete (kunkar) platforms; and fringing dunes	219,928.17	83.41
AB56	Plains extensively covered with longitudinal dunes; some hilly residuals with rock outcrops	10371.12	3.93
My98	Low to steep hilly country with mesas and buttes sometimes capped with pisolitic ironstone and laterite on ferruginized and silicified sandstone and greywacke with extensive valley plains	9,728.42	3.69
AB54	Gently undulating plains with linear dunes in some areas; there are also variable areas of calcrete (kunkar); pans, depressions, and lakes; and some isolated hilly residuals	6,266.79	2.38
AB39	Gently undulating plain dominated by longitudinal dunes of varying frequency; some exposures of ironstone gravels on low rises occur in the dune swales	5,664.45	2.15
AB53	Dune fields--gently undulating plains with linear dunes. There are areas of calcrete (kunkar) of variable extent, pans, lakes, depressions, and springs; and some isolated hilly residuals	5,122.53	1.94
AB29	Gently undulating plains	3,417.03	1.30
AB55	Broad, very gently undulating upland (tableland) elevated above adjacent dune fields; some low laterite-capped residuals showing exposures of sedimentary rocks; some dunes, some salt lakes and pans	2,228.10	0.85
Winnecke System	Low linear or rounded hills and associated valley floors and marginal sandplains, supporting soft spinifex hummock grasslands or sparse low snappy gum woodlands with spinifex.	660.88	0.25
BA5	Stony hills and ranges largely derived from sandstone and having flanking sand plains	150	0.06

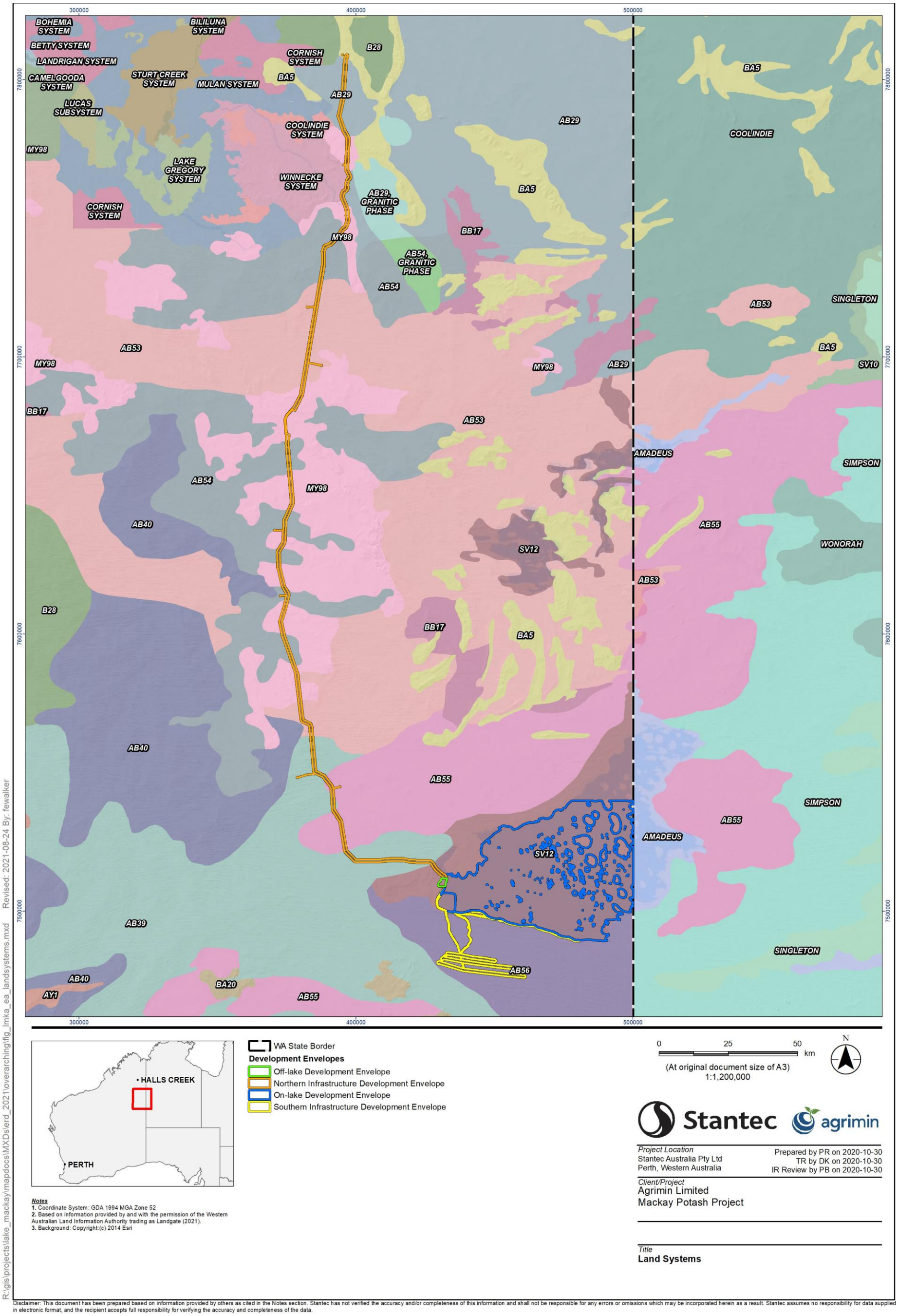

Figure 4-2: Land Systems occurring over the Project area and surrounds

4.1.3 Land Use

Historic and current mining exploration activities include diamond, gold, and Uranium exploration. Due to the remoteness of the Project area, visitors to the area for recreation and tourist purposes are limited. The Balgo road that links the Kiwirrkurra community in the south to the Balgo community in the north is infrequently travelled by tourists due to the limited facilities, condition of the road and remoteness of the area. Traditional Owners continue to use and access the land throughout the area.

4.1.4 Climate

The GSD2 and TAN1 have an arid tropical climate, characterised by summer rainfall ranging between 200 mm and 300 mm annually, with a monsoon influence (Beard 1990; Graham 2001; Kendrick 2001). However, there can be significant fluctuation in wet season rainfall from year to year, depending on the strength of monsoonal system. Temperatures are typically cool in the winter months and very hot during summer months (Graham 2001; Kendrick 2001).

The southern portion of the Project area experiences an arid tropical climate, characterised by cool mild winters and very hot summers. Daily temperatures in the summer months from November to February exceed 37°C and temperatures above 42°C are common. The winter season occurs from June to August with mean daily maximum and minimum temperatures of about 23°C and 11°C, respectively.

The northern portion of the Project area experiences a similar arid tropical climate to the southern portion. The average maximum daily temperatures in the summer months from November to February is 38.3°C. The winter season occurs from June to August with mean daily maximum of 27°C and an average minimum of 13°C.

Rainfall typically occurs in summer, influenced by monsoons and tropical cyclones. Average rainfall for the region ranges between 200 to 300 mm with minimal rainfall occurring during the cooler months (Beard 1990; Kendrick 2001). Long-term average rainfall for Walungurru and Balgo Hills weather stations are shown in Figure 4-3 and Figure 4-4. On average Balgo hills receives more rainfall over the summer months when compared with rainfall data recorded for the same period at Walungurru. The annual average evaporation rate for the region is between 2800–3200 mm/year.

The northwest of Western Australia between Broome and Exmouth is the most cyclone-prone part of Australia's coastline. Although rare, the paths of remnant tropical cyclones have come within range of Lake Mackay; Cyclone Jane (1983), Cyclone Gertie (1995) and Cyclone Sam (2000) tracked within 200 km of the lake. Although cyclone intensity decreases over land, resulting tropical lows have the potential to bring heavy rain and flooding to inland areas of Northern Australia.

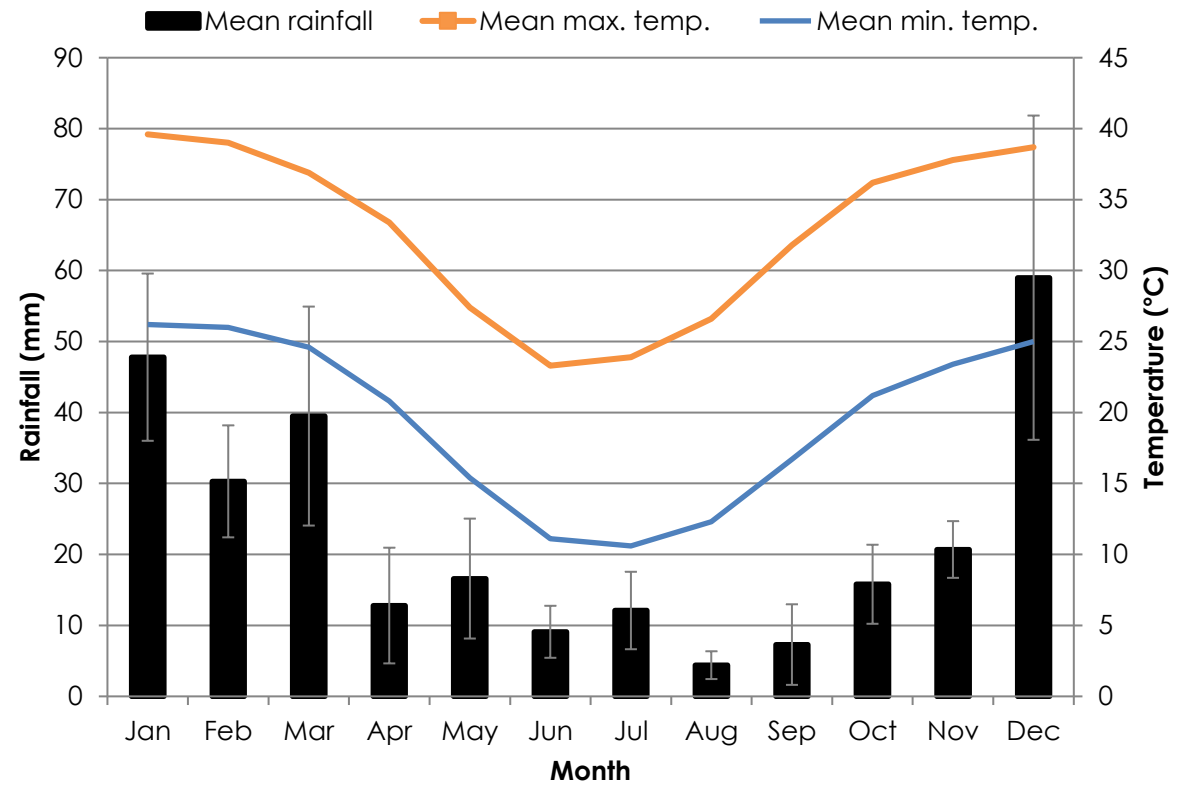

Figure 4-3: Long-term mean annual rainfall (1998-2020) and mean annual temperatures (2001-2020) recorded at Walungurru Airport weather station (No. 015664) (BoM 2020).

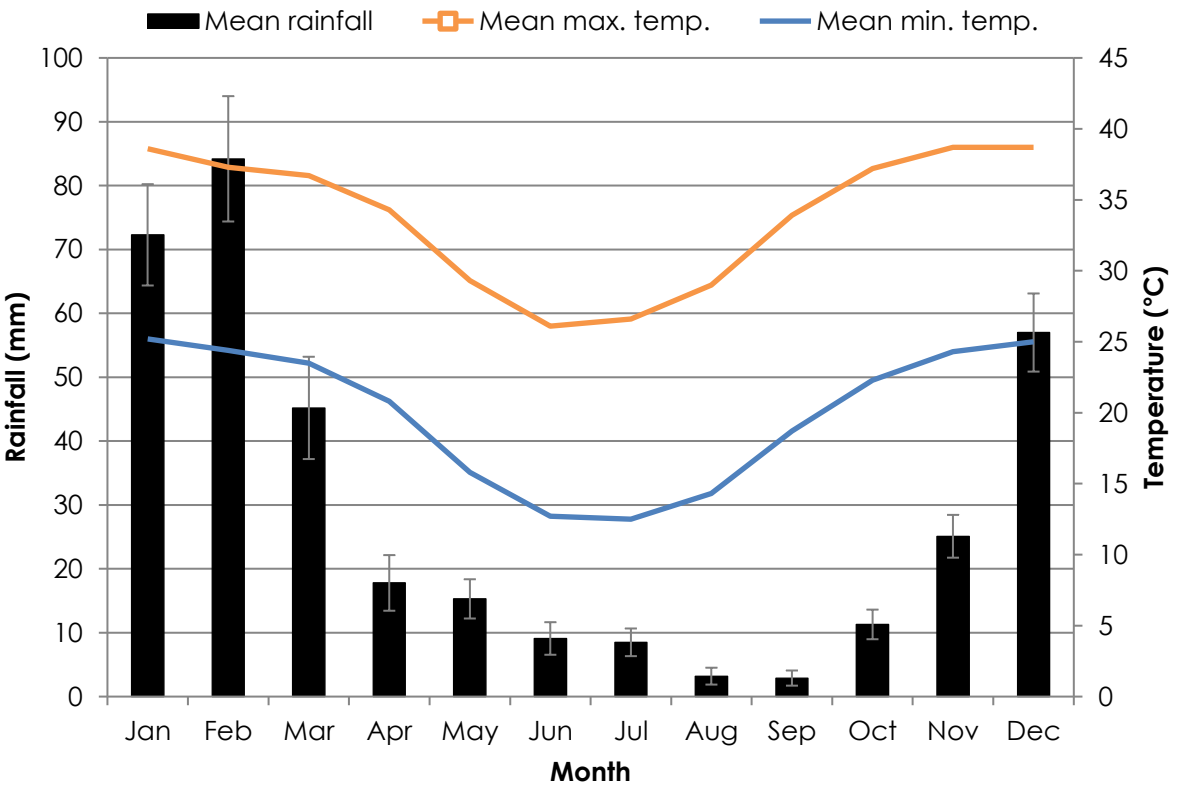

Figure 4-4: Long-term mean annual rainfall (1940-2016) and mean annual temperature (1950-2016) recorded at Balgo Hills weather station (No. 013007) (BoM 2020).

4.1.4.1 Rainfall

Rainfall depths for events up to 1% Annual Exceedance Probability (AEP) were taken from the 2016 Bureau of Meteorology Intensity-Frequency-Duration (IFD) data. These are the most up to date IFD curves (published in 2016). Rainfall Depth-Frequency-Duration data for a location close to the proposed processing facilities are summarised in Table 4-2 and Figure 4-5 compares depth-duration-frequency curves for two locations at the northwest and southwest of Lake Mackay. Design rainfall depths for short durations are reasonably similar, with long duration storm depths to the north almost 10% higher than at the south.

Table 4-2: Lake Mackay IFD Data [22.5375 (S) 128.3125 (E)]

Duration	Design Rainfall Depth (mm) per Annual Exceedance Probability (AEP)							
	50%	20%	10%	5%	2%	1%	0.5%	0.2%
5 min	6.89	10.1	12.3	14.5	17.4	19.7	22.5	26.5
10 min	10.9	15.9	19.4	22.8	27.4	31.0	35.3	41.5
15 min	13.7	20.0	24.3	28.6	34.4	38.9	44.2	52.0
30 min	18.8	27.5	33.5	39.4	47.4	53.7	61.1	72.0
1 hour	24.0	35.1	42.9	50.6	61.1	69.3	79.0	93.1
2 hours	29.0	42.7	52.3	62.0	75.2	85.6	97.5	115
3 hours	32.1	47.3	58.2	69.1	84.0	95.9	109	129
6 hours	37.8	56.3	69.5	83.0	102	116	132	155
12 hours	45.0	67.8	84.2	101	124	143	163	191
24 hours	54.2	82.9	104	125	156	180	205	241
48 hours	65.4	102	129	157	195	227	261	309
72 hours	72.2	114	145	177	221	257	296	351

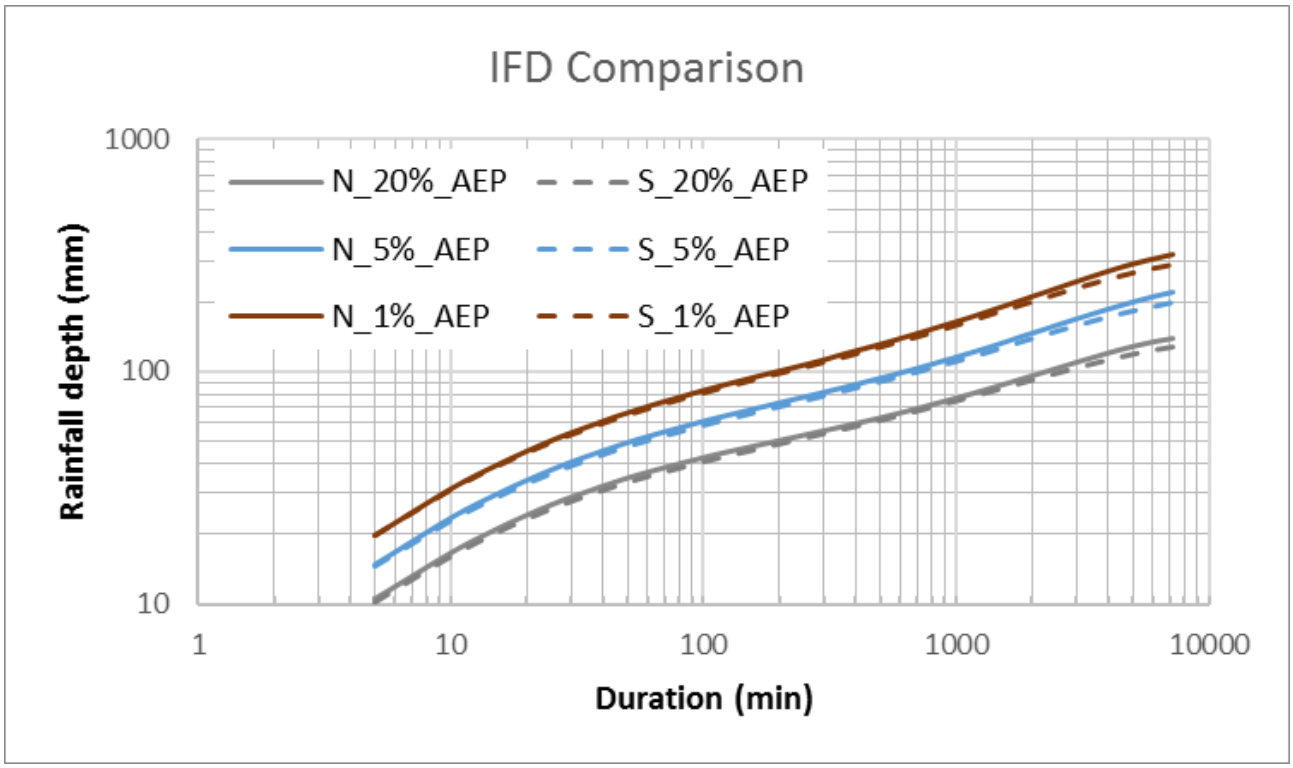

Figure 4-5: Comparison of depth-duration frequency across Lake Mackay

4.1.4.2 Climate Change

Climate change is expected to have an impact on existing regional vegetation, floodplain connectivity, erosion and sediment transport, revegetation of facilities (including species, density, survival and take up rates etc.) and surface water management systems, which have previously been based on historic rainfall and streamflow assessments. The expected changes have the potential to influence future operational and closure risks and will be taken into consideration when planning long-term closure strategies.

4.1.5 Physical Characteristics

4.1.5.1 Geomorphology

The primary drivers behind the geomorphological evolution of Australia's arid zone in which Lake Mackay is situated are long term geological processes and climate change. Much of the Australian continent has experienced limited tectonic activity in recent geologic history allowing for slow geomorphological process to fully develop (Wakelin-King 2011). Weathering, erosion, and deposition of sediment are the primary geomorphological processes active in the arid zone of Australian and have resulted in the relatively low topographic relief landscape that is present today. Lake Mackay and the surrounding area contain a diverse range of different landform types.

Climatic setting and hydrologic processes are important factors that contribute to the geomorphology and evaporite mineralogy of Salt Lake systems. Geomorphological features identified in the on-lake Project area include strandlines from former high-lake stands, islands of gypsiferous aeolian landforms, playa-fringing dunes and encroaching linear sand dunes. Arid climatic conditions and high evaporation rates have resulted in the concentration mineral salts in the sediment of Lake Mackay.

The topography around Lake Mackay is mostly subdued and the lake itself and the area immediate surrounding is predominantly flat. However, the lake is characterised by more than 270 islands with highly variable areas and elevations, ranging from less than 100 ha to over 2,000 ha and from 1 m high to more than 13.5 m (Stantec 2020c).

The northern extent of the Project is characterised by extensive sand plains, salt lakes, clay pans and ridges and hills of the Stansmore Highlands. The dominant feature of the Stansmore Highlands are the residual sandstone ridges of the Stansmore Range, which rise up to 80 m above the surrounding sandplains (Yeates 1976). The western edge of the Stansmore highland reaches an elevation of 510 m above sea level at its highest peak. The main hill features of the highlands are mesas, buttes and cuestas which are less than 30 m high and rise to the west (Yeates 1976).

4.1.5.2 Soil Landscape Unit

The Project encompasses two soil-landscape region (Tille 2006a). The Off-LDE, On-LDE and SIDE are in the southern extent of the Lander-Barkley Region and intersect the Wiso Sandplain and Redvers Dunefield Zones. The Northern Infrastructure development envelope passes through the Lander-Barkley and Sandy Desert Regions, intersecting the Wiso Sandplain, Stansmore and Tanami soil-landscape zones of the Stuart Plateau Province and the Stansmore Dunefield and Ranges Zone of the Canning Province.

Descriptions of the various zones intersected by the project development envelopes are as follows:

- Lander-Barkley Region, Sturt Plateau Province
    - **Tanami Sandplain Zone** is described as "Sandplains and dunes with (hills, ranges, lowlands and some alluvial plains) on sedimentary rocks of the Birrindudu Basin and Redcliff Pound Group. Red deep sands with Stony soils and some Red sandy earths and Loamy earths. Spinifex grasslands with acacia-corkwood shrublands and some eucalypt woodlands. Located in the north-eastern Arid Interior between Duncan Road, Balgo and the Lewis Range" (Tille 2006a)
    - **Wiso Sandplain Zone** is described as "Sandplains and salt lakes with undulating uplands and some hills on sedimentary rocks and granite of the Granites-Tanami Complex and Arunta Orogen. Red sandy earths with some Red deep sands, Salt lake soils and Red loamy earths. Spinifex grasslands with acacia shrublands, salt lakes and ti-tree salt flats. Located in the north-eastern Arid Interior to the east of Balgo (between the Gardner and Phillipson Ranges) and around Lake Mackay" (Tille 2006a)
    - **Stansmore Zone** is described as "Sandplains and dunes (with some hills, ranges, calcrete plains and salt lakes) on sedimentary rocks of the Redcliff Pound Group and Lucas Outlier. Red sandy earths and Red deep sands with some Red loamy earths and Calcareous loamy earths. Spinifex grasslands with eucalypts and shrubs and some salt lakes. Located in the north-eastern Arid Interior around Lake Willis (between Lake Mackay and the Stansmore and Phillipson Ranges)" (Tille 2006a)

- **Redvers Dunefield Zone** is described as "Sandplains and dunes (with some hills and ranges) on sedimentary rocks of the Arunta Orogen and Amadeus Basin. Red sandy earths with Red deep sands and some Red loamy earths and Shallow gravels. Spinifex grasslands with eucalypts and shrubs and some salt lakes and ti-tree salt flats. Located in the north-eastern Arid Interior between the Pollock Hills, Buck Hills and Lake Mackay" (Tille 2006a)

- Sandy Desert Region, Canning Province
  - **Great Sandy Desert Zone** is described as "Sandplains and dunes on sedimentary rocks of the Canning Basin. Red deep sands and Red sandy earths with some Red loamy earths and shallow gravels. Spinifex grasslands with eucalypts and some acacia shrublands. Located in the northern Arid Interior between Dampier Downs Station, Lake Gregory, Giles and De Grey River" (Tille 2006a)
  - **Stansmore Dunefield and Ranges Zone** is described as "Sandplains and dunes (with some hills and ranges) on sedimentary rocks of the Canning Basin. Red sandy earths and Red deep sands with Red loamy earths and some Calcareous loamy earths. Spinifex grasslands with desert bloodwood and shrubs (including acacias). Located in the north-eastern Arid Interior between Wolfe Creek, Lake Gregory and the Stansmore Range" (Tille 2006a)

4.1.5.3 Topography

The topography at the lake and immediate surrounds is generally subdued and flat. Lake Mackay generally slopes towards the south east, with the eastern portion of the lake characterised by small islands. Spatial analysis undertaken of the islands on Lake Mackay identified a total of more than 270 islands, ranging in size from less than 100 ha to greater than 2,000 ha. Elevation is highly variable ranging from approximately 1 m in height to more than 13.5 m, with the larger islands providing the greatest topographical relief (Stantec 2020a).

More broadly, the inland landforms of the Great Sandy Desert are characterised by east to west trending linear dunes with swales opening locally onto sandplains. Some undulating plains and upland areas occur in places. Among the dunes are small claypans and isolated residual sandstone hills, as well as areas of ironstone gravels and some breakways capped by laterite duricrust (Tille 2006a). Further to the east, there are more elevated areas associated with the McDonnell Range that extend through to Alice Springs (Agrimin 2018).

4.1.5.4 Local Physical Conditions

The GSD2 is an area of longitudinal sand dune fields, primarily running east to west, with swales opening into sandplains as well as isolated residual breakaway sandstone hills (Tille 2006a). The red Quaternary sand dunes sit atop Jurassic and Cretaceous sandstones of the Canning and Armadeus Basins, with gently undulating laterised uplands and hills present (Kendrick 2001; Tille 2006a). In addition to Lake Mackay, small claypans and depressions are present in the GSD (Tille 2006a).

The TAN1 consists of red Quaternary sandplains atop Permian and Proterozoic strata that can be exposed as hills and range (Tille 2006a). Aspects of the TAN1 contain ironstone gravels and some breakaways that are capped by laterite duricrust (Graham 2001). The 'Cenozoic regolith 76542' unit is the most widespread of the geological units (approximately 83% of the Study Area). This unit broadly represents surficial or regolith units; poorly consolidated alluvial, colluvial, aeolian, lacustrine and coastal deposits; and residual deposits. Surface geological mapping for the Project is provided in **Figure 4-6**.

Lake Mackay is a hypersaline lake, which may produce acid sulphate soils (ASS). As such, the materials of the lake were tested for their potential to form ASS (Tille 2006a). The results of testing showed that no soil samples were currently actual ASS. Minimal black ooze samples from the fringe of the lake have presented potential for ASS (360 Environmental 2018a).

The Study Area traverses two drainage basins, the Victoria River-Wiso basin and the Sandy Desert basin (BoM 2012). There are no permanent rivers that cross the Study Area; surface water utilises paleaovalleys and palaeochannels to drain into nearby ephemeral lakes (BoM 2012). After heavy rainfall events, surface water in the north of the Study Area drains to Lake Gregory, and in the south, drains to Lake Mackay.

The saline playa of Lake Mackay represents a large portion of the Project Area. Most recharge into Lake Mackay is from direct rainfall and surface runoff from the lake and its direct vicinity (Agrimin 2018). Groundwater levels below the lake are typically close to the surface and have a shallow gradient. There is however the suggestion of upward hydraulic heads and discharge towards the lake surface. The palaeochannels that flow towards Lake Mackay and thin out? near the lake are suggested to contain groundwater flows that contribute to Lake Mackay (Woodgate *et al.* 2012).

The gypsiferous islands within the lake potentially contain lower salinity water from direct rainfall (Agrimin 2018).

The target mineralisation for the Mackay Potash Project is naturally concentrated potassium sulphate salts, dissolved within the sediment hosted brine (hypersaline groundwater) of Lake Mackay. The target minerals, predominantly potassium, have been leached from local source rock within the catchment: source rocks within the catchment include granitoids, acidic-intermediate volcanic rocks, pre-dated saline rocks and continental sedimentary rocks (Woodgate *et al.* 2012).

The potassium sources in these rocks are generally weathered minerals such as biotite, microcline, and orthoclase, or evaporite minerals. The leached or dissolved minerals are naturally concentrated through precipitation runoff, infiltration, and migration of groundwater towards the regional depocentre of Lake Mackay. The dissolved target minerals are further concentrated by evaporation to produce brine grades considered economic to produce sulphate of potash (SOP or K_2SO_4).

The deposit type considered is brine-hosted potassium and sulphate salts, capable of producing SOP through beneficiation and processing. The brine deposit is sedimentary in origin and is formed by the natural concentration of mineral salts within the groundwater of the closed basin, terminal lakebed setting of Lake Mackay. The brine is entrained within the pore space of unconsolidated lakebed sediment, composed primarily of clays and sands.

4.1.5.5 Geology

The region surrounding the Proposal area is characterised by longitudinal sand dune fields, primarily running east to west, with swales opening into sandplains, as well as isolated residual breakaway sandstone hills (Tille 2006a). Nine geological units have been mapped within the Proposal area (Figure 4-6). The 'Cenozoic regolith 76542' unit is the most widespread of the geological units. This unit broadly represents surficial or regolith units; poorly consolidated alluvial, colluvial, aeolian, lacustrine; and residual deposits. The red Quaternary sand dunes sit atop Jurassic and Cretaceous sandstones of the Canning and Armadeus Basins, with gently undulating laterised uplands and hills present (Kendrick 2001; Tille 2006a). In addition to Lake Mackay, small claypans and depressions are present in the GSD2 (Tille 2006a). The TAN1 consists of red Quaternary sandplains atop Permian and Proterozoic strata that can be exposed as hills and ranges (Graham 2001). Aspects of the TAN1 contain ironstone gravels and some breakaways that are capped by laterite duricrust (Tille 2006a). The 'Cenozoic regolith 76542' unit is the most widespread of the geological units within the Proposal area. This unit broadly represents surficial or regolith units; poorly consolidated alluvial, colluvial, aeolian, lacustrine and coastal deposits; and residual deposits.

The northern portion of the Proposal area traverses Palaeozoic and Mesozoic rocks of the Canning Basin in the west and Precambrian rocks of the Granites-Tanami and Arunta regions in the east and southeast respectively (Yeates 1976). Permian sedimentary rocks of the Grant Formation, Poole Sandstone, Noonkanbah Formation and Lightjack formation outcrop extensively in the west of the area and are well exposed along the Stansmore Range. Much of the remainder of the area is covered by Cainozoic deposits which largely conceal the per-Tertiary lithologies (Yeates 1976).

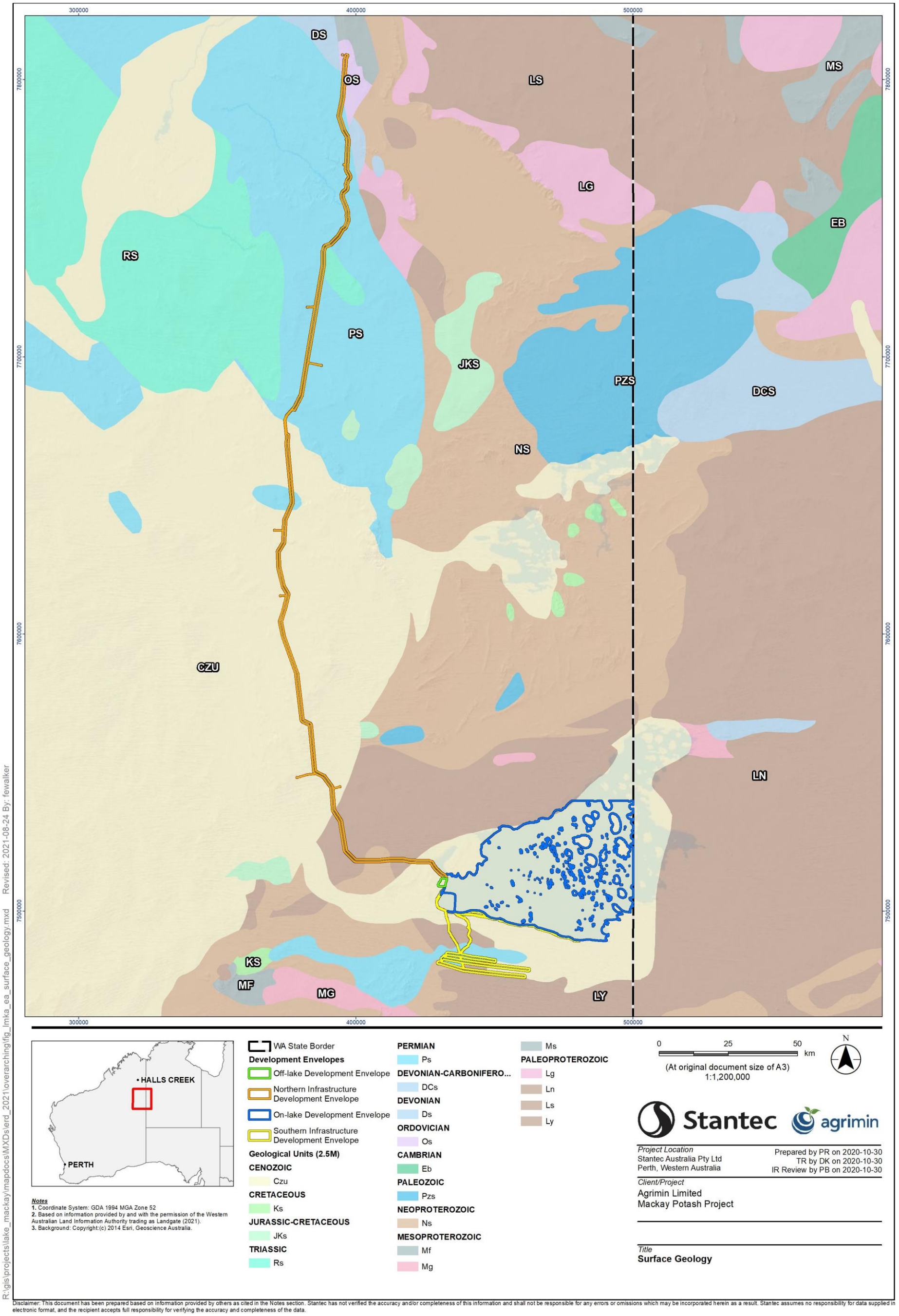

Figure 4-6: Surface Geology of the Project

4.1.5.6 Seismicity Data

The Project is located in an area of relatively low seismic activity, as per the Geoscience Australia Earthquake Hazard Map (Woinarski et al. 2014). A brief seismic assessment was undertaken for the Project Pre-Feasibility Study. The Geoscience Australia (GA) Published maps indicate a Peak Ground Acceleration (PGA) of 0.06 g for an earthquake with a return period of 500 years and approximately 0.18 g – 0.20 g for earthquakes with a return period of 2,500 years (Agrimin 2020).

4.1.5.7 Soils and Waste Materials

4.1.5.7.1 Regional Soil Characteristics

The Project area occurs within the Great Sandy Desert, Wiso Sandplain and Stansmore soil-landscape zones of Western Australia (Tille 2006a). The soils of these zones are described as deep red sands, salt lake soils, red sandy and loamy earths with some calcareous loamy earth (Tille 2006a). Soil types of the Project are depicted in Figure 4-7.

The Project area comprises areas of longitudinal sand dune fields, primarily running east to west, with swales opening into sandplains as well as isolated residual breakaway sandstone hills (Tille 2006a). The red Quaternary sand dunes sit atop Jurassic and Cretaceous sandstones of the Canning and Amadeus Basins, with gently undulating laterised uplands and hills present (Kendrick 2001; Tille 2006a). In addition to Lake Mackay, small claypans and depressions are present throughout the area (Tille 2006a). To the north of the Project area red Quaternary sandplains atop Permian and Proterozoic strata that can be exposed as hills and ranges (Graham 2001), whilst other areas contain ironstone gravels and some breakaways that are capped by laterite duricrust (Tille 2006a).

Sandplains and dunefields are typical of the dominant regional landforms of the Great Sandy Desert, with longitudinal dunes typically trending east-west. Dunes can be continuous up to a 100 km long, reaching up to 30 m in height and have average spacing of between 200 m and 500 m, with local variations. The sand dune features are understood to have been created by climatic conditions that prevailed some tens of thousands of years ago and have remained almost unchanged.

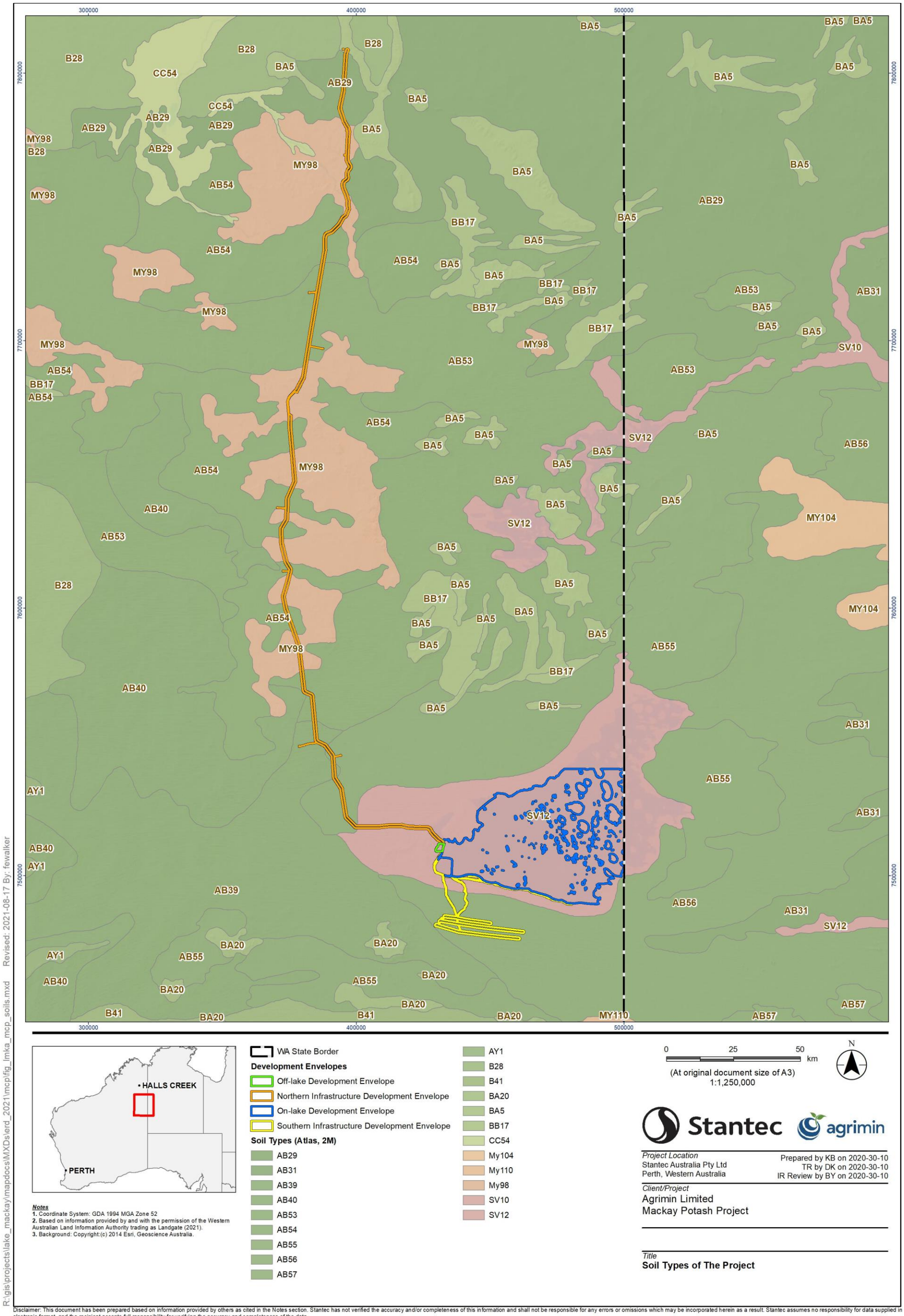

Figure 4-7: Soil types of the Project

4.1.5.7.2 Lake Sediment

Salt lake deposits have been evaluated from drilling and installation of trenches (Agrimin Ltd 2018), and similar lithologies (shallow) were encountered during the 2017 acid sulphate soil investigation (360 Environmental 2018b). The key lithological units as described by Agrimin Ltd (2018) that are likely to be encountered during trenching and construction of the ponds include:

- **Surficial halite: Single** salt crystal layer generally only 5 mm thick. In the west of the lake, this crust takes on a different, less porous form than in the east of the lake, where it is intermixed with gypsum in small mounts with internal vugs and void spaces. The halite is interpreted to dissolve each wet season and reprecipitate when water evaporates.
- **Organic silt horizons:** An upper organic layer, up to several cm thick, occurs at surface or within 5 cm of surface and is commonly exposed as patches within the Lake Mackay where surficial halite is not present. Typically, a centimetre or several centimetres thick in the west of the lake, this horizon appears to thicken to the east and may be correlated with a silt unit ten of centimetres thick in the upper metre of sediment.
- **Friable gypsum sand:** Friable gypsum sand has been encountered from surface, where it is interbedded with the silt and clay. It varies from a fine to coarse gypsum sand and grit, which has a maximum thickness of approximately 1.5 m to 2 m in the east. The grit-like gypsum changes below approximately 0.5 m to finer grained gypsum with interbedded layers of clay. The exact thickness of this unit appears to be variable.
- **Red brown to brown clay:** Below the clayey sands, a red-brown clay with intermittent bands of crystalline gypsum and sand across the lake is present. This is the dominant salt lake lithology, beginning within 1 m of surface in the west of the lake to as deep as 2.5 m in the east.

  The clay shows some variation in colour from medium brown to red brown but is overall homogeneous, completely lacking in internal structure or bedding, with minor gypsum sand grain content. In places the clay unit is paler and can be described more as olive green to grey rather than red, reflecting a distinct period in the clay deposition; however, this change cannot be correlated across the lake. The green intervals commonly occur between 5 and 24 m below surface.

  There is a distinct difference in lithology of the lake sediment between the western and eastern sides of Lake Mackay. The western side of the lake appears to host a lower energy zone, with predominantly higher clay content. In contrast, the eastern side of the lake contains a higher sand and silt content. This is possibly the effect of different depositional environments.

  The sediment within Lake Mackay thickens from the shallowest point of 21 m in the south-west corner to beyond 200 m (the maximum investigated depth) in the east. The lake bed sediment are unconformably underlain by highly weathered sandstone, siltstone, and metasediment.
- **Consolidated gypsum sand layers**

  Within the red brown clay unit, there are horizons of gypsum sand with grains typically up to 1 mm or smaller, which form consolidated layers. They are texturally distinct from the friable gypsum sand but may represent similar surfaces where the gypsum has recrystallized. It is unclear as to the lateral continuity of these layers; however, it is assumed that continuity is poor. The consolidated layers are more common below 9 m depth in central and eastern parts of the lake, but there are some layers present close to the surface at about 3 m depth. These layers often encountered significant flows of brine.

4.1.5.7.3 Waste Salt

Waste salts will be produced as part of the operation, including halite, thenardite and hexahydrate which will accumulate on the pond floors throughout the life of the operation. Further information on waste salts is provided in **Section 8.4.3.2**.

4.1.6 Hydrology

The Project traverses two drainage basins, the Victoria River-Wiso basin and the Sandy Desert basin and there are no permanent rivers that cross this area. Surface water utilises palaeovalleys and paleochannels to drain into nearby ephemeral lakes (BoM 2012). After heavy rainfall events, surface water in the north of the Project drains to Lake Gregory, and in the south, drains to Lake Mackay. The regional hydrology of the Project is depicted in **Figure 4-8** and surface water drainage is depicted in **Figure 4-9.**

Lake Mackay is a closed system with no outflow location or known historic evidence of spilling into adjacent basins. The lake lies within the internally draining Mackay Basin with a catchment area of approximately 87,000 km^2 which extends more than 550 km east of the lake to the MacDonnell Ranges. There are small ephemeral streams and watercourses at the margins of the lake that drain from the surrounding landscape and potentially contribute surface water runoff onto the lake during periods of extreme rainfall. These features are localised and tend to be more common in the southeast portion of the lake. There are no major stream channels that appear to reach the lake (Agrimin 2018).

Limited information is available on the quantitative catchment runoff contribution to the lake, and there are no published records of water levels in Lake Mackay or inflows to the lake. It is thought that most recharge is derived from direct rainfall on the lake and surface runoff from its immediate surrounds (Advisian 2018), potentially with some surface water runoff contribution from the surrounding landscape (Lycopodium 2016).

Observations from satellite imagery sourced from Geosciences Australia indicate that Lake Mackay is regularly inundated during the wet season (Advisian 2018), with a high degree of variability in the frequency, extent, and distribution of inundation (Lycopodium 2016). The inundation appears to be less common in the northern and western portion of the lake, likely as a result of slightly higher surface elevations. This is supported by lake elevations, with higher lake elevations to the north and west, with low gradients (reducing by approximately 3 m) towards the southeast of the lake, which coincides with the deeper sections of the lake (Stantec 2020a).

The occurrence of surface water in off lake parts of the Project area is confined to short time periods following significant rainfall events. Surface water is typically present on the surface for less than 24 hours due to high terrestrial infiltration rates. Surface water that has pooled in shallow claypans adjacent to the lake following a significant rainfall event can persist for several days before evaporating.

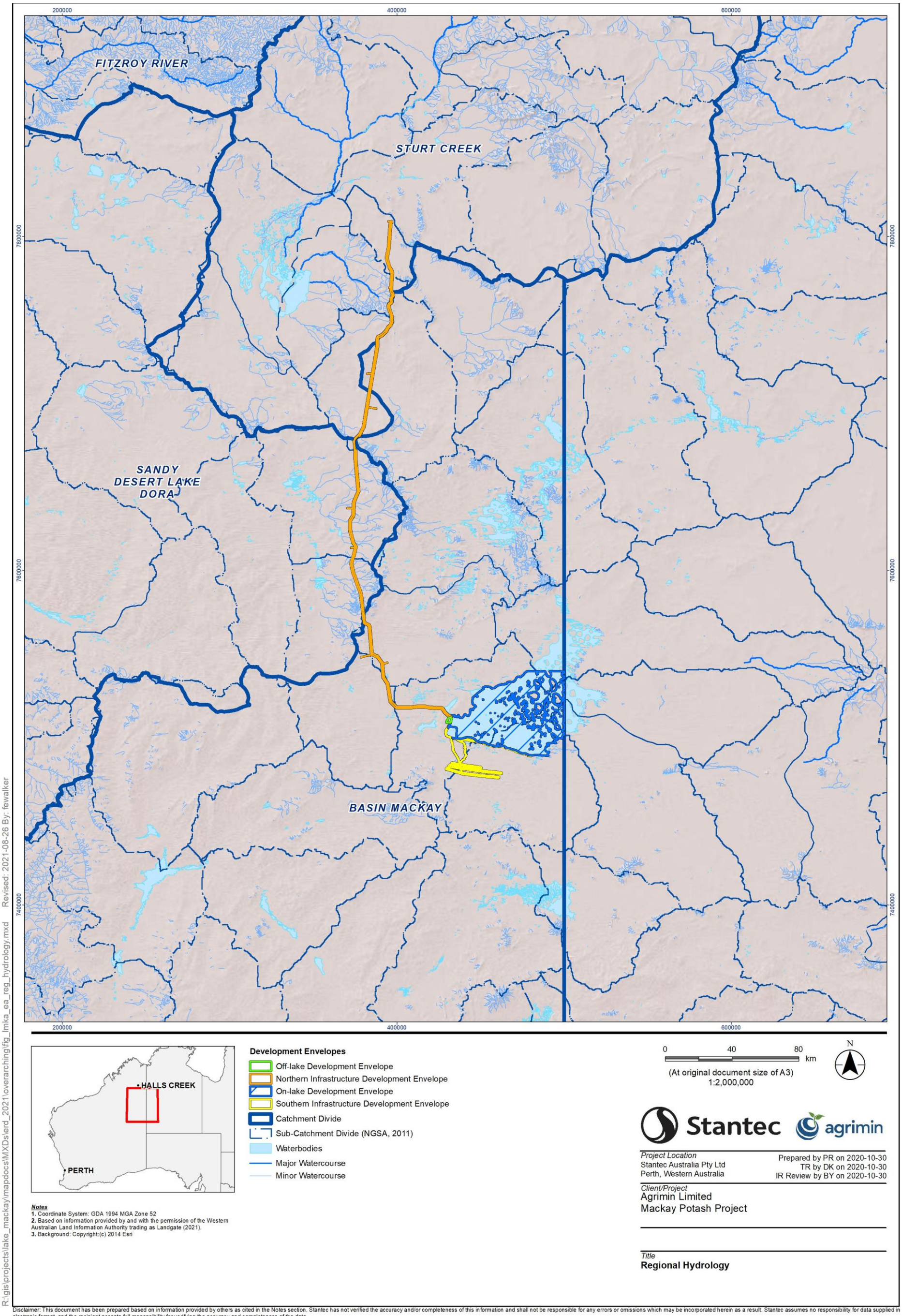

Figure 4-8: Regional Hydrology of the Project

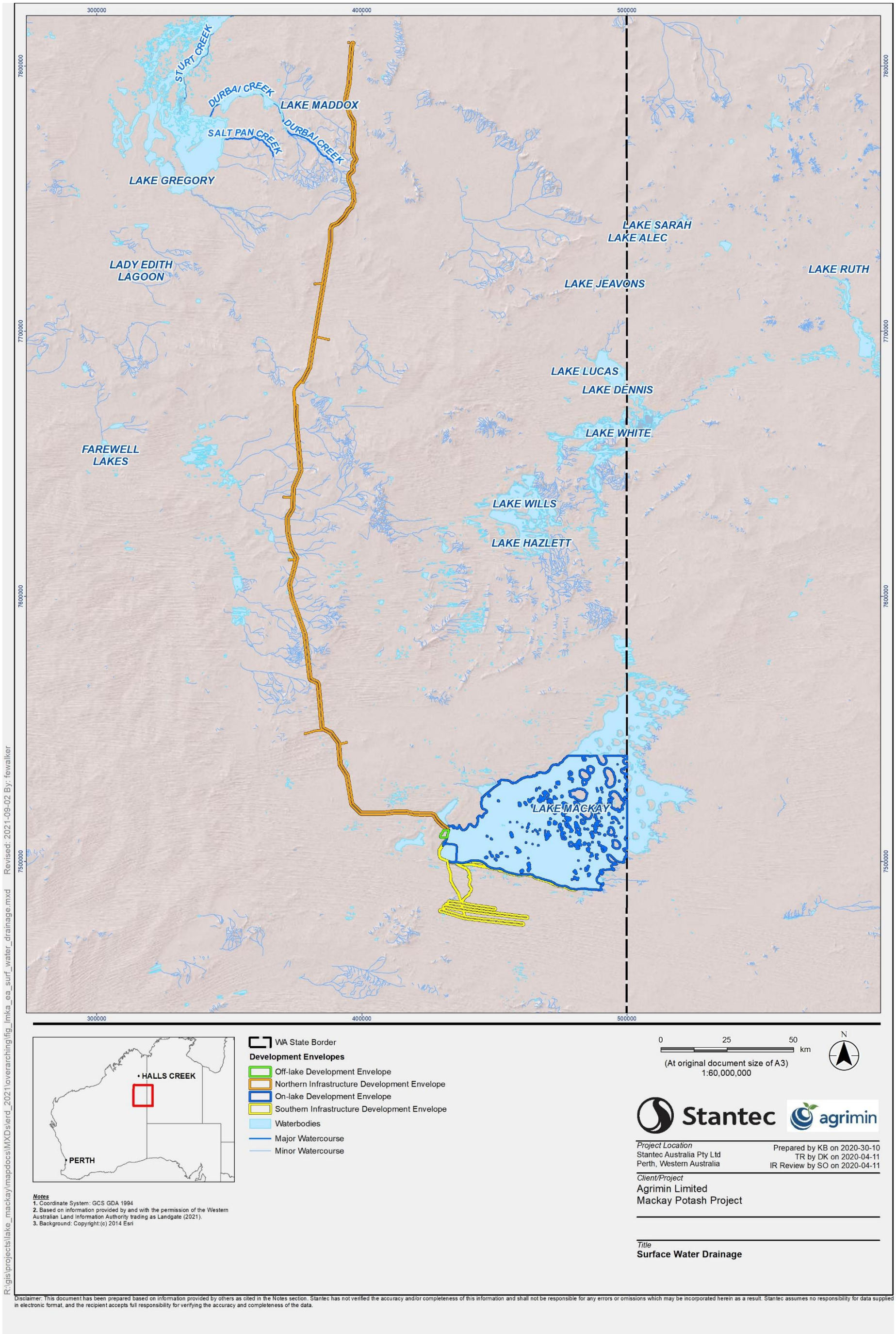

Figure 4-9: Project surface water drainage

4.1.7 Hydrogeology

Lake Mackay is an ephemerally flooded lacustrine system which hosts hypersaline groundwater in a shallow surficial aquifer. The lakebed sediment sequence is made up of silt, gypsiferous sand and silty clay with interspersed gypsum crystals. The lake water table occurs at 0.5 m below ground level on average and experiences some fluctuations during the wet and dry seasons.

Groundwater recharge to the lake is predominately from direct rainfall onto the lake surface. Surface water contributions from the immediate catchment areas surrounding the lake are infrequent and only occur as a result of significant rainfall events. As the lake is a terminal drainage point for surrounding watershed, discharge is solely from evaporation and evapotranspiration.

Lake Mackay experiences periodic inundation following rainfall events however due to the high infiltration and evapotranspiration rates, water dissipates from the surface rapidly. The water table occurs at 0.5 m below ground level and experiences some fluctuations during the wet and dry seasons. Groundwater salinity of the surficial lake aquifer is hypersaline with TDS concentrations ranging from between 250,000 mg/L to 300,000 mg/L.

The off lake regional water table sits at a depth of between 4 m and 11 m depending on the immediate topography. Groundwater is hosted in unconfined calcrete and weathered sandstone aquifers of the Amadeus Basin. Groundwater salinity adjacent to the lake ranges between 6,200 mg/L and 47,000 mg/L, increasing with depth. Further away from the lake the salinity drops to between 1,200 mg/L and 6,300 mg/L.

Groundwater in the northern portion of the Project area occurs in fractured basement rocks, secondary porosity in weathered and chemically altered units and alluvial and eolian deposits (Johnson 2006). Groundwater is recharged by rainfall and is likely enhanced by localised runoff and flooding due to heavy rainfall events during the wet season. Groundwater discharge is primarily due to evaporation. Groundwater recharge to aquifers of the Canning basin that occur in the northern portion is by major, one in ten to one in one-hundred-year flood events (Johnson 2006).

The conceptual hydrogeological model shown in **Figure 4-10** assumes that as the current groundwater storage in the lake is extracted, future rainfall and runoff will infiltrate the lake surface and recharge the system. This recharge water will infiltrate from the surface, dissolving crystallised salts in the unsaturated zone and proceeding to mix with groundwater storage.

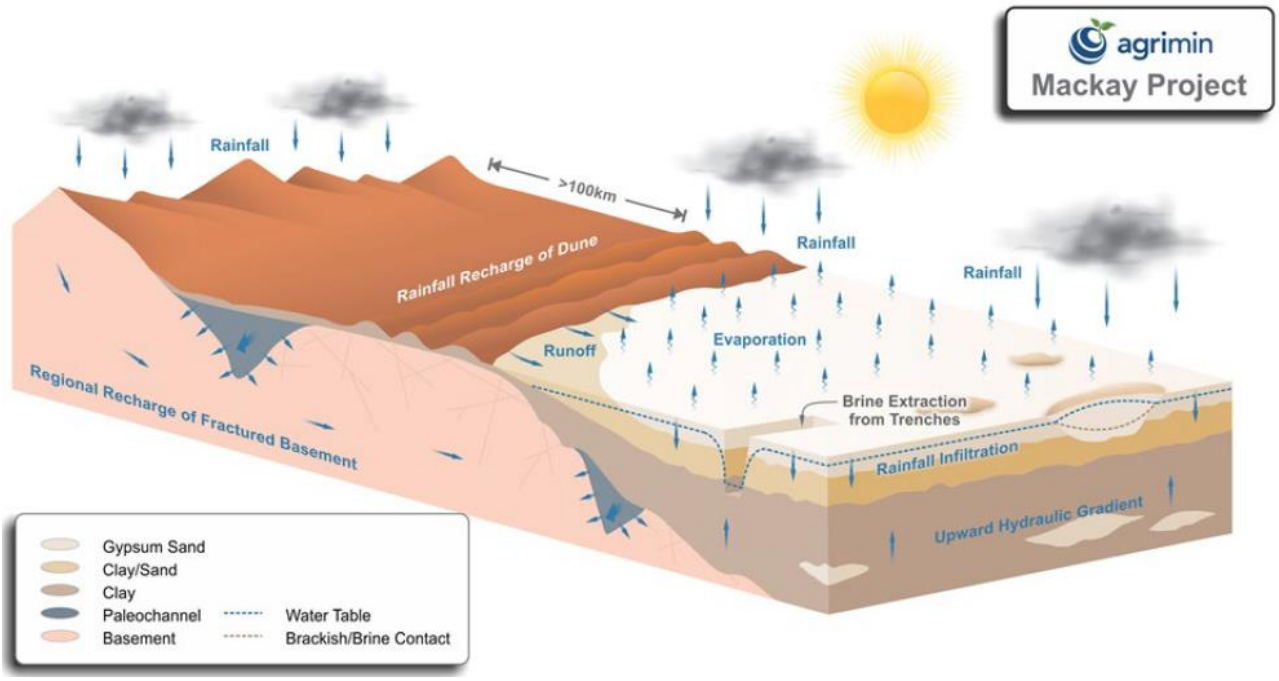

Figure 4-10: Conceptual Hydrogeological Model

4.1.8 Local and Regional Ecological Information

4.1.8.1 Significant Flora

Georeferenced searches of DBCA databases and literature reviews conducted prior to the Stantec 2020 flora and vegetation indicate 48 significant flora species have previously been recorded within 150 km of the Proposal Area. This includes: 11 Priority 1, six Priority 2, and 23 Priority 3 flora species. One database record of an EPBC Act-listed species, *Eleocharis papillosa* (Vulnerable), which is also listed as a Priority 3 species under the BC Act, is located approximately 36 km east of the boundary of the Project, within the NT.

4.1.8.2 Vegetation

4.1.8.2.1 Botanical Regions

The Proposal area occurs in the Canning Botanical District of the Eremaean Botanical Province (Beard 1990)(**Figure 4-11**). The Canning Botanical Province is described as tree-steppe grading to shrub-steppe communities, comprising open hummock grasslands of *Triodia pungens* and *Plectrachne schinzii* (now *Triodia schinzii*) with scattered trees of *Owenia reticulata, Eucalyptus* spp. and *Acacia* and *Grevillea* shrubs.

4.1.8.2.2 Pre-European Vegetation Associations

Eight pre-European vegetation association systems have been mapped across the Project, based on (Shepherd *et al.* 2002). Pre-European vegetation community mapping is depicted in **Figure 4-12**. Within each of these associations, minimal land clearing has occurred across the four scales of assessment (State, bioregion, subregion, and Local Government Area (LGA)). The majority (approximately 82%) of the Proposal Area comprises vegetation association 125 which is described as salt lake, lagoon and clay pan association. This represents approximately 85% of the vegetation associations' extent within the Study Area. The associations systems are:

- GSD2
  - 125: Salt lake, lagoon, clay pan
  - 134.1: Sparse low tree-steppe / Sparse shrub-steppe
  - 174.1: Shrub-steppe; Hummock grassland with scattered shrubs or mallee *Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp.
  - 2041.1: Samphire with thicket/scrub; *Tecticornia* spp. with *Melaleuca* spp. and *Acacia* spp.
  - 117: Grass-steppe; Hummock grassland *Triodia* spp.
- Tanami
  - 101.2, 218.1 and 895.1: Shrub-steppe; Hummock grassland with scattered shrubs or mallee *Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp.

4.1.8.2.3 Flora and Vegetation Studies

Four detailed flora and vegetation surveys have been commissioned for the Project in order to undertake an impact assessment that considered the environmental values of both the local and regional context of the wider Project area. Additionally, two surveys were conducted either intersecting or entirely within the Project. Information from these six surveys were then consolidated into a single report (Stantec 2020b) to describe the flora and vegetation in the Project, which is an Appendix of the ERD. These studies are summarised below in Table 4-3.

Table 4-3: Flora and Vegetation studies for the Project

Project and Reference	Study details	Scope	Survey / study effort	Flora and Vegetation recorded	Key findings within the Stantec 2020 Study Area
Lake Mackay Potash Project: Detailed Flora and Vegetation Survey and Consolidation (Stantec 2021)	Survey Area (ha): 34,622 Study Area (ha): 443,628 Survey dates: 5-21 October 2019 and 7-25 March 2020 Seasonal Conditions: Average (Phase 1) Excellent to below average (Phase 2)	Dual phase detailed flora and vegetation survey, and consolidation of previous surveys	• 138 quadrats (50 m by 50 m) • 16 relevés • Mapping notes • Targeted searches • Opportunistic collections. One quadrat and one relevé were re-surveyed Strategen sample sites from 2018. Consolidation of data from a total of: • 216 quadrats • 42 relevés • 11 transects • Mapping notes • Targeted searches • Opportunistic collections.	The consolidated data from all survey results conducted with the Study Area included: • 498 taxa from: • 58 families • 188 genera. • 14 Broad Floristic Formations • 50 Vegetation Types Vegetation Condition: Excellent (<99% of vegetated component of the Study Area).	Three Priority flora species recorded during the Stantec 2020 Survey: • *Comesperma sabulosum* (P3) • *Eragrostis lanicaulis* (P3) • *Indigofera ammobia* (P3) And a review and consolidation of all Priority flora recorded in previous surveys: • *Goodenia anfracta* P1 • *Stackhousia* sp. Lake Mackay (P.K. Latz 12870) P1 • *Tecticornia globulifera* P1 • *Goodenia virgata* P2 • *Thysanotus* sp. Desert East of Newman (R.P. Hart 964) P2 • *Bergia occidentalis* P3 • *Goodenia halophila* P3 • *Goodenia modesta* P3 • *Rothia indica* subsp. *australis* P3 • *Senna artemisioides* subsp. *alicia* P3 • *Stackhousia clementii* P3
Detailed Flora and Vegetation Assessment at Lake Mackay (Strategen 2018)	Area (ha): 1,403 Survey date: 10-15 November 2017 Seasonal Conditions: Above average	Single phase detailed flora survey	• Ten quadrats (50 m by 50 m) • Two transects consisting of six 3 m by 3 m quadrats established in transitional vegetation.	60 taxa including; • 26 families • 42 genera	• *Stackhousia* sp. Lake Mackay (P.K. Latz 12870) (P1) • Unknown and potentially new *Tecticornia* spp.
Detailed Flora and Vegetation Assessment at Lake Mackay (360 Environmental 2017a)	Area (ha): 297,195 Survey date: 14-23 April 2017 Seasonal conditions: Below average	Single phase detailed flora and vegetation survey	• 34 quadrats (50 m by 50 m) six quadrats were re-surveyed ecologia quadrats from 2016. • Four transects comprising of 3 m by 3 m quadrats	253 taxa including; • 42 families • 117 genera	• *Tecticornia globulifera* (P1) • *Goodenia virgata* (P2) • *Goodenia modesta* (P3)

Project and Reference	Study details	Scope	Survey / study effort	Flora and Vegetation recorded	Key findings within the Stantec 2020 Study Area
			(one transects was a re-surveyed ecologia transect from 2016) • 24 transect quadrats 3 m by 3 m (six quadrats were re-surveyed ecologia quadrats) • 11 relevés • Mapping notes • Targeted searches • Opportunistic collections.	Ten Vegetation Sub-Formations Vegetation Condition: Excellent	
Level 2 Flora Assessment (ecologia Environment 2017)	Area (ha): 400,138 Survey date: 6-13 September 2016 Seasonal conditions: Above average	Single phase level 2 flora assessment	• 31 quadrats (50 m by 50 m) • Six transects consisting of six 3 m by 3 m quadrats (36 quadrats) established in transitional vegetation.	214 taxa including; • 44 families • 115 genera 12 Vegetation Sub-Formations	• *Tecticornia globulifera* (P1) • *Goodenia virgata* (P2) • *Thysanotus* sp. Desert East of Newman (R.P. Hart 964) (P2) • *Stackhousia clementii* (P3)

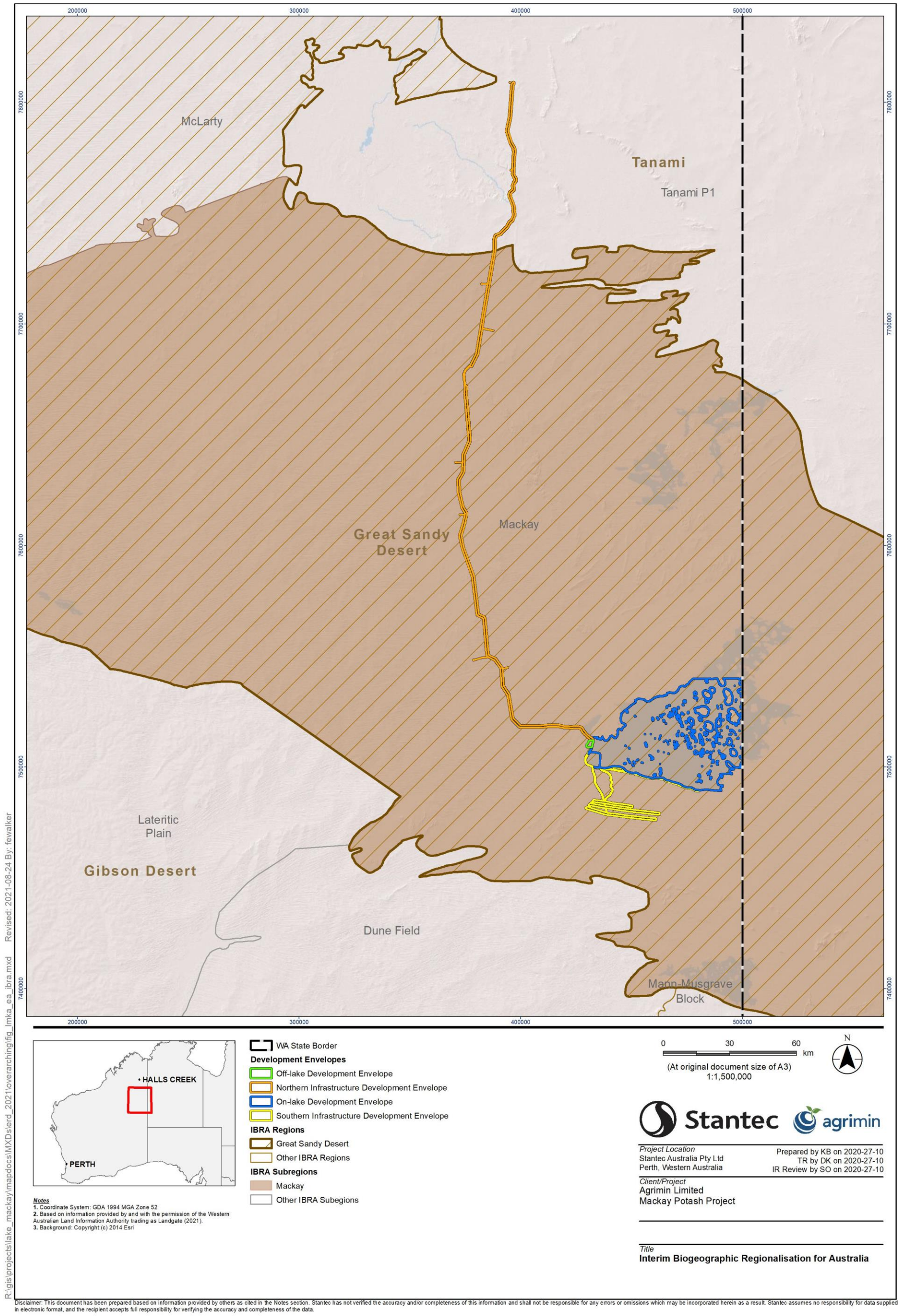

Figure 4-11: Interim Biogeographic Regionalisation for Australia for the Mackay Potash Project

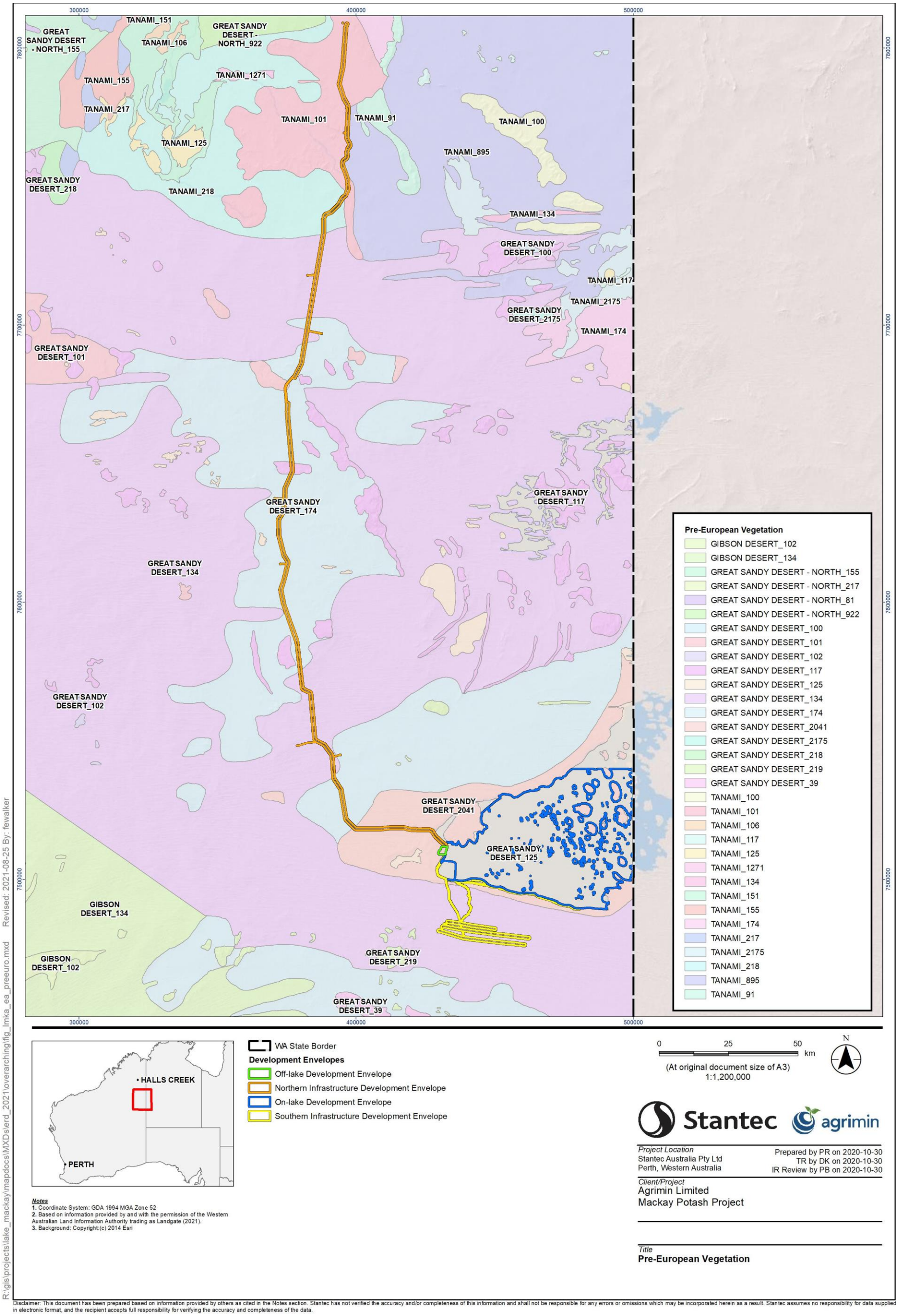

Figure 4-12: Pre-European Vegetation Communities of the Project

4.1.8.3 Threatened Ecological Communities and Priority Ecological Communities

No Threatened Ecological Communities or Priority Ecological Communities are known to occur within the Project Area. The nearest significant community is the Wolfe Land System (P3) PEC, located 55.5 km from the NIDE.

4.1.8.4 Groundwater Dependant Ecosystems and Riparian Vegetation

There was an absence of groundwater dependant key indicator species, and permanent or semi-permanent surface water features such as rivers or major creeks occur within the Project. Claypans that temporarily hold freshwater following significant rainfall events are distributed within the southern and central portions of the Project.

Of the several locations within the Project which are periodically inundated with water, the samphire shrublands adjacent to the saline playa of Lake Mackay can be temporarily submerged. *Tecticornia* species are known to dominate vegetation in semi-saline habitats, including salt lake margins, however they require freshwater to germinate, and have varying requirements in regards to salinity (Datson 2005). Therefore, the following habitats have been identified as being within the riparian zone:

- The hypersaline lake margins and smaller islands of Lake Mackay; dominated by halophytic species such as *Tecticornia*, *Frankenia* and *Eragrostis*;
- Saline flats and small depressions consisting of similar species to the lake margins; and
- Localised clay pans supporting *Melaleuca glomerata*, or *Eucalyptus victrix*, and/or Mulga, generally with an absence of *Triodia*.

4.1.8.5 Introduced Flora

Six introduced flora species have been recorded within the Project area, all of which occur within the NIDE. One of these weed species, **Tribulus terrestris,* also has been recorded within the On-Lake development envelope at one location. None of the introduced flora species represent Weeds of National Significance (WoNS) or are listed under the *Biosecurity and Agriculture Management Act 2007* as declared pests for either the Tanami or Great Sandy Desert bioregions. However, **Cenchrus* spp. and **Aerva javanica* are generally considered to be serious environmental weeds with the potential to proliferate and become dominant in their preferred habitats. The ecological impact and invasiveness classifications [(DPaW 2013;2015)] for these weed species are provided in **Table 4-4**.

Table 4-4: Introduced flora recorded within the Project area and the DPaW Weed Prioirtisation Process

Weed species (common name)	Development Envelope	DPaW Classification^	
		Ecological impact	Invasiveness
**Aerva javanica* (Kapok Bush)	NIDE	High	Rapid
**Cenchrus ciliaris* (Buffel Grass)	NIDE	High	Rapid
**Cenchrus setiger* (Birdwood Grass)	NIDE	High	Rapid
**Malvastrum Americanum* (Spiked Malvastrum)	NIDE	High	Rapid
**Flaveria trinervia* (Speedy Weed)	NIDE	n/a	n/a
**Tribulus terrestris* (Caltrop)	NIDE / On-LDE	Unknown	Moderate

*Note: ^In the absence of DPaW classifications for the Tanami and Great Sandy Desert bioregions, the Pilbara classifications are presented. No classification information is available for *Flaveria trinervia.*

4.1.8.6 Environmentally Sensitive Areas and Conservation Reserves

Environmentally Sensitive Areas (ESA) are areas that have been declared by the Minister under Section 51B of the EP Act. The Project does not intersect any ESA, the closest ESA is the Lake Gregory system. The Lake Gregory system (WA096) is described as a nationally important wetland, and plays an important role in supporting waterbird populations as a major drought and non-breeding refuge (Environment Australia 2001). Lake Gregory is a major stopover for migratory shorebirds (Daniel *et al.* 2009), and is located 51 km west of the northern end of the NIDE.

No Conservation Reserves (including National Parks, Conservation Parks and Nature Reserves) occur within or in close proximity to the Project Area. The Wolfe Creek Meteorite Crater National Park (also an ESA) is the nearest conservation reserve to the Project Area, situated approximately 72 km north of the northern-most extent of the NIDE, and within the Ord Victoria Plain bioregion.

4.1.8.7 Fauna Habitats

Several fauna habitats have been identified in the region. These habitats were delineated on the basis of location, landform, substrate, vegetation type and their importance to different faunal groups, in particular their importance to fauna of significance. The habitats described and delineated across the Project include:

- Salt lake playa;
- Lake margin;
- Claypans and claypan mosaic;
- Saline flats and depressions;
- Dune-field;
- Dune;
- Spinifex sandplain;
- Gravel spinifex plain;
- Rocky ridge and gorge;
- Outcropping and stony rise;
- Ridge slope; and
- Drainage line.

There were three unique landscape features identified within the Project, Lake Mackay, island outcropping and water sources, which provide important sources of shelter, food, and water for fauna, including significant fauna.

4.1.8.8 Terrestrial Fauna

A total of 245 terrestrial vertebrate fauna species have been identified with the potential to occur within the Proposal Area. These comprising:

- 22 native mammals;
- 9 introduced mammals;
- 129 native birds;
- 1 introduced bird;
- 6 amphibians; and
- 80 reptiles.

Of these, 21 species are classified as significant fauna under the EPBC Act or BC Act, comprising;

- 4 mammals;
- 3 reptiles; and
- 14 birds.

Fauna surveys have been undertaken at the Project area. The following threatened species under the EPBC Act have either been confirmed or are likely to occur within the Project area including:

- Night Parrot (*Pezoporus occidentalis*) (En);

- Greater Bilby (*Macrotis lagotis*) (Vu);
- Great Desert Skink (*Liopholis kintorei*) (Vu);
- Australian Painted Snipe (*Rostratula benghalensis)* (En);
- Princess Parrot (*Polytelis alexandrae*) (Vu); and
- Grey Falcon (*Falcon hypoleucos*) (Vu).

4.1.8.9 Short Range Endemics

Terrestrial Short-range endemic (SRE) invertebrate fauna are species are typically associated with sheltered and mesic microhabitats, such as the southeast aspect of slopes, trees, boulders and rock piles, outcrops, mesas, drainage systems, deep gorges, natural springs and fire refuges (EPA 2016). 12 broad habitats were identified and delineated throughout the Proposal area. Seven of the 12 habitats are classified as having potential to support terrestrial Short-range endemic (SRE) taxa within the Proposal area include salt lake playa, lake margin, saline flats, and depressions, claypan and claypan mosaic, rocky ridge and gorge, outcropping and stony rise, and drainage line. The remaining five habitats were classified as being of low potential for SRE taxa due to their widespread continuous occurrence and lack of significant microhabitat features that are conducive for short range endemism.

4.1.8.10 Subterranean Fauna

Lake Mackay's surface consists of lacustrine sediment of mud, clay and gypsiferous evaporates geologies. Lake Mackay hosts hypersaline groundwater at approximately 0.5 m below the lake's surface, that is hypersaline (≥250,000 mg/L TDS). Geology in the unsaturated zone above groundwater and elevated salinity are non-conducive habitat for subterranean fauna. However, prospective subterranean habitat likely exists in lower salinity groundwater associated with some of the larger islands on Lake Mackay, where calcrete deposits occur.

There are two aquifers south of Lake Mackay in the proposed SIDE area; the surficial calcrete aquifer, and an underlying deep alluvial aquifer. While the SIDE borefield occurs in saturated Neogene alluvials which host fresh to low salinity groundwater, the relatively fine textured lithology is likely to restrict subterranean fauna.

The western portion of the SIDE is dominated by the Angas Hills Formation comprising interbedded pebble and cobble conglomerate, sandstone, pebbly sandstone, and siltstone with a matrix of clayey sandstone and minor mudstone. The eastern portion comprises a sequence of sandstone, siltstone, and shale, and is consistent with the older Carnegie/Pertatataka Formation. These are overlain by tertiary paleochannel deposits of silty clay and clay over sand in some areas, and broad alluvial cover of Neogene age predominantly comprising a clayey sandstone, fine textured sand, quartz, and silt/clay matrix. Groundwater salinity is relatively fresh (1,200 mg/L to 6,300 mg/L TDS). Potential prospective subterranean fauna habitat exists within the aquifer hosted by the broad Neogene alluvial.

4.1.8.11 Aquatic Biota

Few studies of aquatic biota from salt lakes and claypans in central arid Australia exist, with a paucity of records from this region. Much of the data on central Australian salt lakes is from Lake Eyre, the largest salt lake in Australia (Williams *et al.* 1990). Salt lake biota are extremely resilient and well adapted to their temporary environments, employing specialised life history stages to cope with conditions (Williams *et al.* 1990). To date, there is no published literature available on Lake Mackay and its peripheral wetlands.

Typically, salt lakes will initially support an abundance of algae, macrophytes and aquatic invertebrates (mostly crustaceans) with the onset of the hydroperiod, during major flood events, when salinities are lowest. This high productivity (boom phase), provides a food source for higher order consumers such as waterbirds (including migratory species) and in some instances fish. However, as salinity increases over the course of the hydroperiod, becoming hypersaline, these lakes enter the drying phase, and diversity decreases. As water levels recede, aquatic biota complete their lifecycles (bust phase), depositing resting stages (dormant propagules and eggs) in the sediment that are resistant to extended dry periods. The cycle is repeated when the lake is flooded, triggering emergence of aquatic biota and recovery. These boom and bust phases are highly dependent on the amount of rainfall received and lake inundation levels, which regulate biological productivity.

4.1.8.12 Islands

Where ground-truthed, the islands present on the playa were found to support outcropping and crevices which is a microhabitat relatively limited in the region, particularly in the vicinity of Lake Mackay. The outcropping and crevices have potential to support unique fauna assemblages (e.g. rock dwelling

specialists) relative to the surrounds. Recent site reconnaissance has also identified bats belonging to the *Scotorepens* genus inhabiting outcropping on one of the smaller gypsiferous islands in the central part of the lake (Stantec 2020c).

4.1.8.13 Waterbirds

Ornithological surveys of Lake Mackay immediately following major rainfall and flooding events suggest Lake Mackay and surrounding smaller freshwater claypans may provide important breeding habitat for waterbird populations. A total of at least 34 confirmed waterbird species were recorded at Lake Mackay including 12 threatened and priority waterbird species (360 Environmental 2017c; Duguid *et al.* 2015).

There were no direct observations of waterbirds on waterbodies of the islands. the Stantec 2021 targeted waterbird survey recorded 4,200 Banded Stilts (*Cladorhynchus lecocephalus*) displaying breeding behaviour on a lake island (Stantec 2020d). Furthermore, Banded Stilts with juveniles were observed on the lake from three other surveys including in internationally important numbers in 2001 (due to islands providing protection from predators) (360 Environmental 2017c; Duguid *et al.* 2015; Pedler 2017) . In addition, several significant species were recorded from the lake and its peripheral wetlands, including internationally important numbers of Sharp-tailed Sandpipers (*Calidris acuminate*) (Mi: Migratory shorebird), nationally important numbers of Red-necked Stints (*Calidris ruficollis*) (Mi: migratory shorebird) and the Australian Painted Snipe (*Rostratula australis*) (En) (360 Environmental 2017b; Stantec 2020d). Therefore, it is possible that these species may also utilise the islands and their waterbodies when foraging and/or breeding during major flood events.

4.1.9 Aboriginal Heritage

The Project's area of extraction of potash minerals (On-LDE) is contained solely within the Kiwirrkurra native title determination area. The processing plant, associated site infrastructure, process water borefield and a section of the haul road are also located within the Kiwirrkurra native title determination area. The Kiwirrkurra native title holders are a significant stakeholder in the Project.

A number of Aboriginal ethnographic and archaeological site surveys have been completed for the area covered by the On-LDE and Off-LDE in the Kiwirrkurra native title determination area since 2016. No Registered Aboriginal Sites or other places of heritage significance are located within close proximity to these envelopes. The nearest Aboriginal Heritage site is Pakuranga (ID: 2049) located approximately 5.1 km west of the southern end of the Project's area.

The SIDE intersects seven Aboriginal heritage places of which four are lodged, while the NIDE intersects 25 Aboriginal heritage places of which five are lodged and 21 are registered. Agrimin has completed extensive native title consultations and heritage surveys in order to clear necessary corridors for the Project's infrastructure components within the SIDE and NIDE.

In November 2017, Agrimin signed a Native Title Agreement with Tjamu Tjamu (Aboriginal Corporation) RNTBC, the registered native title body corporate for the Kiwirrkurra native title holders. The Native Title Agreement provides Agrimin with the necessary consents for Agrimin to be granted a Mining Lease and to develop the project. The Native Title Agreement provides a series of financial and non-financial benefits for the Kiwirrkurra native title holders as well as providing a formal framework for the protection of cultural heritage sites and areas of cultural significance.

The proposed haul road alignment (NIDE) will pass through two other native title determination areas, which includes Parna Ngururrpa (Aboriginal Corporation) RNTBC and Tjurabalan Native Title Land Aboriginal Corporation RNTBC.

Agrimin has signed a Memorandum of Understanding with Parna Ngururrpa (Aboriginal Corporation) RNTBC, the registered native title body corporate representing the Ngururrpa native title holders. The Memorandum of Understanding addresses the construction of the haul road on the Ngururrpa native title determination area for the purposes of transporting the Company's SOP production along the haul road.

Agrimin has signed a Consultation and Monitoring Agreement with Tjurabalan Native Title Lands (Aboriginal Corporation), the appointed prescribed body corporate to hold native title rights on behalf of the Tjurabalan native title holders. The Consultation and Monitoring Agreement provides for the protection of cultural heritage sites and areas of cultural significance during Agrimin's haul road investigations on the Tjurabalan native title determination area.

Agrimin anticipates signing Negotiation Protocols with the Ngururrpa and Tjurabalan native title holders. The protocol will govern the final negotiations for reaching a Native Title Agreement for the haul road with the respective parties. These Native Title Agreements will be required to provide consent for Agrimin to be granted future Miscellaneous Licences covering the haul road alignment.

Agrimin has a Cultural Heritage Management Plan in place developed with the Tjamu Tjamu and the Kiwirrkurra People. It provides Agrimin with:

- an outline of the process undertaken by Tjamu Tjamu prior to the commencement date to identify exclusion areas, sensitive areas and cleared areas within the CHMP area of interest;
- a management strategy in relation to these areas mentioned above;
- processes for the use of monitoring for project operations and annual inspections to ensure that the exclusion areas are being properly managed;
- mechanisms for culturally appropriate, ongoing consultation between Tjamu Tjamu, the Kiwirrkurra people and Agrimin in relation to the areas of cultural concern within the Project; and
- processes for undertaking further anthropological fieldwork as required and additional management strategies that may be required once such fieldwork has been completed.

4.1.10 Non-Indigenous Heritage

The region of the Project has been subjected to exploration activities since the 1930s, particularly in the northern areas. There are no known non-indigenous heritage places listed on the State Registered Places or Heritage Places register within the Project.

4.1.11 Contaminated Sites

Agrimin's tenements are not currently listed in the DWER's Contaminated Sites Database. The identification and management of all contaminated sites will be conducted in accordance with the requirements of the *Contaminated Sites Act 2003*. Activities likely to lead to contamination may include:

- residual hydrocarbons;
- activities in the processing plant and workshop areas; and
- leakage, spillage or inappropriate disposal of reagents, hazardous goods, and wastes.

4.1.12 Data Analysis and Implications for Mine Closure

The previous sections have summarised the baseline data from technical studies and monitoring done to date for the Project. This section summarises key aspects that may impact closure outcomes and their implications (**Table 4-5**).

Table 4-5: Data analysis summary and implications for closure

Aspect	Implication
Climate	
The Project experiences an arid tropical climate with cool mild winters and very hot summers. Rainfall typically occurs within the summer months. Annual average evaporation rate for the region is between 2800-3200 mm/year.	Climate conditions will be taken into account in any closure modelling developed for the Project and factored into revegetation strategies where relevant.
Soils and Material Characterisation	
Topsoil will be harvested from off-lake disturbance areas where available and relevant	Only selected areas of the Project will incorporate topsoil application as part of the revegetation strategy and will not include on-lake areas. Management of any topsoil and subsoil material where relevant from off-lake footprints should be undertaken according to an approved management plan to ensure that areas designated for revegetation and capable of supporting a self-sustaining vegetation community suitable for the proposed post-mining land use.
No values indicative of actual acid sulphate soils (ASS) or potential acid sulphate soils (PASS) from a field assessment of soil samples, however two black ooze samples from the southern edge of the lake are PASS.	Further investigations may be required in order to manage ASS and PASS materials on the southern and western fringes of the lake, to determine what management measures are required during closure works and post-closure implications.
Hydrology	
A surficial halite crust in general about 5 mm thick is present, intermixed with gypsum in the east, becoming less permeable in the west.	The nature and extent of salt crust on Lake Mackay to be monitored post-closure.
Lake Mackay is an ephemeral salt lake in a poorly defined catchment.	Closure and rehabilitation activities will be undertaken in line with requirements of a site-specific surface water management plan in order to maintain environmental values. Any data obtained from surface water and ecological monitoring programs for the lake and peripheral habitat will be used to inform completion criteria.
The lake is a closed system subject to irregular flooding during the wet season which can result in surface inundation. When inundated the lake is shallow and hypersaline.	
Evaporation and transpiration are the only recognised forms of discharge and loss from the water balance.	
Hydrogeology	
Regional groundwater flow is predominantly in a westerly direction towards the lake which acts as a sink. Groundwater levels are close to the surface (0.5 m) and experiences some fluctuations during wet and dry seasons.	Impacts from groundwater drawdown and changes in groundwater salinity on riparian vegetation, other peripheral habitat and fauna will continue to be monitored throughout and post-closure and where relevant data will inform completion criteria.
Hydrostratigraphic units comprise lake sediment, island sediment and paleovalley fill sediment.	
Brine groundwater exists beneath the lake with low metal concentrations.	
Lower salinity groundwater occurs within island sediment.	
Fresh to low salinity groundwater occurs within the calcrete on the lake periphery.	
Rainfall and possibly upward leakage are the primary recharge mechanisms.	
Local and Regional Ecological Information	
Four broad fauna habitats have been identified including Dune, Swale, Claypan Swale and Lake Margin which were common and widespread and in close to pristine condition. The lake is not a wetland of international importance and is not listed in the directory of Important Wetlands in Australia.	The majority of actual and potential direct and indirect impacts to habitat are through disturbance and clearing for on lake and off-lake development and access corridors. Off-lake infrastructure has been configured to avoid riparian vegetation and favourable habitat for conservation significant fauna species where possible. Trenches and evaporation ponds will be located on the open playa of the lake, avoiding islands and peripheral habitat. Where required, monitoring of fauna populations will continue and data will inform completion criteria for the Project. Where required, rehabilitation and revegetation practices will consider vegetation species/communities suitable for fauna habitat and closure strategies will minimise or avoid disturbance of on-lake habitat.
Up to seven conservation significant vertebrate fauna species have been recorded including two mammals, one reptile and four migratory waterbird species.	
Areas will be rehabilitated across the Project, progressively where possible and at cessation of operations.	A component of the Project's ground disturbance is on the lake surface (the On-LDE). These areas are not intended to be revegetated as part of the Project's closure and rehabilitation strategy.
Five of the 271 islands on the Lake Mackay playa are made up of gypsiferous sediment and support outcropping and crevices which are a limited microhabitat in the region, they have the potential to support unique fauna assemblages. Bats (*Scotorepens* sp.) were identified on one of the smaller islands.	The Project's on-lake operations will avoid impacts to the Lake Mackay islands, therefore no impacts are expected from closure activities. Completion criteria will be further refined as operations progress to include specific requirements for protection and retention of important habitats.
(*On-LDE and Off-LDE*) Flora and vegetation surveys have been undertaken for the Project. Up to five Priority species have been recorded and five potentially new species of *Tecticornia* spp. which may be of conservation significance. No groundwater dependent flora or vegetation have been recorded. No rare or threatened flora species listed under the EPBC Act or BC Act. No TEC or PECs recorded.	The majority of actual and potential direct and indirect impacts to flora and vegetation are through disturbance and clearing for infrastructure and access corridors and on-lake disturbance for trenching, bunding and evaporation ponds during operations. Disturbed areas will be rehabilitated progressively where possible or at closure and where relevant will consider the use of native, local provenance vegetation suitable for the post-closure land use for areas designated for active revegetation. Data from any further surveys conducted and monitoring of future analogue sites will be used to inform completion criteria.
(*NIDE and SIDE*) Several vegetation associations are present. Desktop searches identified up to 10 Priority flora species in the NIDE and seven in the SIDE. No rare or threatened flora species, and unlikely that any TECs or PECs would occur.	

Aspect	Implication
Six introduced flora species have been recorded within the Project area. Two of these (*Cenchrus* spp. and *Aerva javanica*) are generally considered to be serious environmental weeds with the potential to proliferate and become dominant in their preferred habitats.	Planning for closure and undertaking of closure and rehabilitation activities will be conducted in line with a weed management plan or similar to avoid the introduction or spread of weeds and potential impacts on flora, fauna and habitats.
Indigenous and European Heritage	
The NIDE intersects 25 Aboriginal heritage places and the Southern Infrastructure development envelope intersects seven Aboriginal heritage places. No Registered Aboriginal Sites or other places of heritage significance are located within close proximity to the Project area. The Kiwirrkurra Community and Balgo Community are located near the Project.	Aboriginal heritage places to be managed in closure in accordance with the Cultural Heritage Management Plan. Aboriginal stakeholder groups to be engaged in closure planning as per the Stakeholder Engagement Strategy
	Sites of heritage interest to be protected in closure in consultation with relevant stakeholders.
Contaminated Sites	
There are currently no contaminated sites identified.	Should any contaminated or potential contaminated sites be identified in future these will be managed at closure and post closure as per the requirements of the *Contaminated Sites Act 2003*

4.1.13 Knowledge Gaps, Associated Risk and Closure Implementation Tasks

A summary of the key knowledge gaps, associated risk and closure implementation tasks (e.g. controls, investigative tasks, etc.) for the baseline data is presented in Table 4-6. Identified knowledge gaps have been captured within the Schedule of Works presented in Appendix D. Knowledge gaps for the Project have been developed by reviewing available technical studies developed for the Project and throughout the Project Environmental Risk Assessment (ERA) process.

Table 4-6: Baseline knowledge gaps, associated risk, and closure implementation tasks

Knowledge Gap	Associated Risk	Closure Implementation task/research/investigation/trials	Timeframe	Responsibility
Soils and Material Characterisation				
The location, total volumes, and characteristics of the future topsoil stockpiles for the Project are unknown.	Rehabilitation failure and impacts to financial provisioning.	• confirm locations of future topsoil stockpiles and create an inventory; • conduct characterisation of topsoil; and • incorporate inventory with volumes and location of stockpiles once available into the MCP and continuously update.	From 2022	Agrimin General Manager
Further soil survey work is required to better understand the capabilities and constraints for successful rehabilitation	Rehabilitation failure and impacts to financial provisioning.	• Further undertake in situ soil survey investigations to understand physical and chemical characteristics and specific impacts on future rehabilitation performance.	From 2022	Agrimin General Manager
There may be further areas of the lake with PASS black ooze material.	PASS and ASS materials may not be managed adequately during closure works and post-closure if exposed.	• undertake further investigations on the southern and western fringes of the lake to determine need to manage ASS and PASS materials; and • develop a management plan if required.	2022-2024	Agrimin General Manager
Hydrology				
Post closure surface water impacts.	Altered / increased / decreased surface water quantity and changes to flow direction and flooding duration and extent and water quality – subsequent impacts to ecosystems, flora, fauna, breeding and feeding cycles, heritage areas, peripheral areas and sensitive receptors.	• continue collecting water quality data during the life of the Project; • complete and incorporate findings from surface hydrology modelling and flood mitigation assessment into site design and site water balance and management plans; • include closure scenario in modelling; • complete Aquatic Ecology Investigation and incorporate into site design and management plans; and • documented closure strategy for waste salt stockpiles to be included in future iterations of the MCP, including assessment of alternative closure strategy options.	2022	Agrimin General Manager
Hydrogeology				
Post-closure groundwater quality.	Potential risk to ecological receptors including riparian vegetation and aquatic biota.	Update groundwater model progressively and undertake impact assessment to take into consideration future closure scenarios and conditions.	2022 - ongoing	Agrimin General Manager
Rate of groundwater recharge post-closure and extent of groundwater drawdown impacts of groundwater drawdown.	Change in groundwater levels and hydraulic connectivity – impacts to surface water, changes to salt crust and potential dust generation, altered ecosystems, potential impacts to sensitive receptors / exclusions zones, potential off-site impacts, peripheral ecosystems, heritage areas.	• complete and review groundwater modelling / assessments; • ongoing collection of water level data to inform modelling and completion criteria; • include closure scenario and recovery in modelling; and • develop a site water balance and management plan.	2022 - ongoing	Agrimin General Manager

Knowledge Gap	Associated Risk	Closure Implementation task/research/investigation/trials	Timeframe	Responsibility
Local and Regional Ecology				
The waste salt stockpile post-closure dissolution rate and nature of salt re-distribution.	Potential risk to ecological receptors including riparian vegetation and aquatic biota.	• undertake salt generation / assimilation modelling and include closure scenario in site modelling and salt balance; • conduct salt assessment (ecological impacts and thresholds) and incorporate findings into site designs and management plans; and • incorporation of findings from modelling and assessment into MCP.	2022 – ongoing	Agrimin General Manager
Fauna (terrestrial, SRE, subterranean, waterbirds, aquatic biota) and habitat abundance and diversity data for further development of completion criteria	Potential impacts to fauna and habitats from rehabilitation and closure works.	• continue monitoring and collection of abundance and diversity data progressively throughout the life of the Project; and • update completion criteria in the MCP where relevant.	2022 – ongoing	Agrimin General Manager
Data from future planned flora and vegetation surveys where relevant and from monitoring of future analogue sites for further development of completion criteria.	Inability to implement successful rehabilitation and closure of the site in line with stakeholder requirements.	• continue monitoring and collection of data from future surveys and monitoring of analogue sites progressively throughout the life of the Project; and • update completion criteria in the MCP where relevant.	2022 – ongoing	Agrimin General Manager
Impacts of removal of potassium from the salt lake system on aquatic biota and ecology and nutrient cycling processes.	Potential impacts to aquatic biota, impacting in turn on waterbird populations.	• Investigate impacts of long-term removal of potassium on aquatic biota and nutrient cycling processes	2022 - ongoing	Agrimin General Manager
Indigenous and European Heritage				
Negotiation Agreements with Traditional Owners	Inability to successfully close the site in line with stakeholder requirements.	• identify all required future discussions and negotiations with Traditional Owners and outline in future stakeholder engagement strategy; and • incorporate in the detailed MCP	2022 - ongoing	Agrimin General Manager
Rehabilitation				
A progressive rehabilitation strategy for the Project has not been determined. Rehabilitation outcomes not determined.	• inability to implement successful rehabilitation; and • rehabilitation failure; and • inadequate closure provisioning	• develop a rehabilitation management plan with clearly defined outcomes and incorporate into the MCP; • identify potential areas for progressive rehabilitation throughout the project	2022 - ongoing	Agrimin General Manager
Contaminated Sites				
Potential future sources of surface and groundwater contamination.	Chemical reagents used in the extraction process may result in contamination of surface and ground water post-closure	• identify all reagents to be used in the extraction process and update risk assessment in the MCP with required controls; and • update all relevant environmental management plans	2022 - ongoing	Agrimin General Manager
Land Use				
Further definition is required on current and post-mining land use in line with Traditional Owner discussions and requirements.	Inability to successfully close the site in line with Traditional Owner expectations.	• identify all required future discussions and negotiations with Traditional Owners and outline in future stakeholder engagement strategy; and • incorporate in the updated MCP	2021- ongoing	Agrimin General Manager

4.2 Operational Data

4.2.1 Current monitoring

Several monitoring programs are currently taking place at Lake Mackay, including:

- groundwater levels;
- climate monitoring;
- short-range endemics monitoring;
- troglofauna trapping (SIDE);
- solar and wind monitoring (in the processing plant); and
- night parrot monitoring (NIDE).

4.3 Benchmarking/Learnings

Key closure risks were identified as part of a preliminary project benchmarking exercise for the Project, focusing on on-playa (lake) closure impacts, summarised in **Table 4-7**. Benchmarking sites which were used for the review, and for the purpose of developing this MCP included:

- Beyondie (Kalium Lakes) WA (Pilbara);
- Lake Wells (Salt Lake Potash) WA (Goldfields);
- Lake Way Project Demonstration Plant (Salt Lake Potash) WA (Midwest);
- Mardie Salt/Potash Project (BCI Minerals), WA (Pilbara);
- Lake Disappointment (Reward Minerals) WA (Pilbara); and
- Sevier Playa Potash Project, Salt Lake City, US.

Table 4-7: Key closure risks associated with salt lake mining identified during benchmarking

Aspect	Closure Risk
Site wide	• Unplanned closure requirements • Removal and fragmentation of habitat / ecological process / fauna • Changes to surface water quality • Long-term contamination • Disturbance to known or unknown heritage sites
Trenches and on-playa bores	• Drawdown of groundwater (impacts include dust, changes to surface water expression and ecological impacts) • Changes to surface water salinity – ecological impacts • Changes to surface water regime flow rate, direction, flooding duration and extent – impacts to flora and fauna and ecological processes • Potential acid sulphate soils at the trenches in the lake surface and metals in shallow sediment forming bunds of the trenches • Erosion and sedimentation impacting surface water
Diversion Berm / Canal	• Diversion Berm/Canal unstable and prone to erosion • Surface water changes in flow and sedimentation
Concentrator Ponds / Crystalliser Ponds	• Land degradation due to salts and plastic liners not properly disposed of • Changing local drainage patterns (e.g. flow rate, direction etc.)
Excess Salt Stockpile	• Impacts to water quality – changes in salinity – impacting ecological processes – flora and fauna- aquatic invertebrate lifecycles) • Impacts to groundwater quality – from dissolution of the salt stack with run-off spread over the surface of the playa where it is expected to infiltrate and recharge groundwater.

In addition, a series of key aspects regarding salt lake mining experience and learnings from other projects and regulator expectations for mine closure planning of salt lake mining projects were discussed in a workshop as part of the benchmarking exercise. These are summarised in Table 4-8.

Table 4-8: Salt lake mining experience and key issues from other projects

Aspect	Information
Closure strategy – HDPE pond liners	• The closure strategy for HDPE pond liners was identified as a key risk for Kalium Lakes. The closure approach utilised was that HDPE liners would be buried in situ with trenches excavated in each pond.
Closure strategy – ponds	• Identified closure strategies for ponds have included cutting and folding of HDPE liners, pushing in with existing material into trenches and covering with trench material and embankments.
Contamination	• Contamination has been identified as a potential risk from pond sediment. • The potential for groundwater contamination from processing reagents in the salt processing facility and reagent storage areas (e.g. flocculant/xanthate) at a Goldfields site has been detected in groundwater beneath the infrastructure footprint.
Approvals and Traditional Owners	• It is important to have approvals in place for specific agreements with Traditional Owners (e.g. for post-mining land use, transfer of infrastructure, proposed closure approach).
Closure strategy – other sites	• Beyondie Lakes will leave all salt stockpiles in situ at closure (partially on/off lake). • Kalium Lakes' strategy is to spread materials back into trenches at closure.
Wind erosion	• Wind erosion can be a potential concern during the development of site access and crossing of sand dunes and can be instigated or exacerbated by the dewatering and lowering of the water table and changes to the salt lake crust (example, Lake Mungo, NSW).
Impacts to brine shrimp ecology	• The removal of potassium may affect the ability of phytoplankton to grow and provide the food source to the brine shrimp that are part of the boom-bust cycle that are natural drivers for these kinds of systems.
Excess / waste salt stockpiles	• Lake Disappointment excess salt stockpiles of left on-playa are estimated to take 500-1200 years to dissolve. • Deformation of lakebed over time as the weight pushes on soft sediment and bow wave potentially forms (anticipated limited impact) potentially resulting in surface water pathway changes. • Amenity/ visual impact of salt stockpiles - Useless Loop salt stockpiles seen from Denham and Port Hedland. Lake Disappointment salt stockpiles are visible from Canning Stock Route.
Pests and predators	• Extra resources to remote areas may increase predator numbers (cats, foxes, dingoes, silver gulls) - staff safety and fauna predation issues.
Climate change	• Long term climate change patterns and potential impacts on closure scenarios (and long-term feasibility of the operation).

5. Post-Mining Land Use

The underlying land use for the Project and surrounding area is Native Title. Following cessation of operations, the land is likely to return to the underlying land use. Consultation with key stakeholders will occur throughout the life of the Project to determine the appropriate end land use.

The extraction trenches and evaporation ponds are likely to be features of the post mining landscape, that gradually degrade into the surrounding lake system over time, although closure strategies will continue to be refined and detailed over the life of the Project. At this stage of the project, strategic breaching of the southern feeder of trench bunding canal to maintain hydrology will occur, and trenches are to infill naturally, a process likely to occur within approximately 10 years (refer to Section 8.4.8).

The major haul roads and access tracks that will be developed for the operations of the Project are to be negotiated on their end land use. Whether they are to be rehabilitated or to remain in place and utilised for other land users is to be decided in consultation with stakeholders and formal agreement sought if it is decided the roads will remain. Supporting infrastructure such as the accommodation camp, air strip will also likely be retained for utilisation and will be subject to ongoing discussion with key stakeholders, however it has been assumed for closure planning purposes and closure cost estimation that this supporting infrastructure will be removed. Discussions have already commenced and are continuing with the Traditional Owners with regard to the retention and transfer of key infrastructure. At this stage of the Project, as the life of the project is estimated to be 20 years, specific opportunities are continuing to be discussed and evaluated. Potential post-mining land uses may include:

- conservation eco-tourism (for example, utilising existing airstrip and road access, with renewable power infrastructure);
- carbon sequestration opportunities on the lake and surrounding saline wetlands;
- aquaculture; and
- traditional owner business opportunities.

The post-mining land use will be further defined in future iterations of the MCP as stakeholder discussions progress.

6. Closure Risk Assessment

6.1 Identification of Closure Risks

Consistent with a risk-based approach, Agrimin has a structured risk management process in place to identify, assess and manage the potential risks associated with closure.

6.2 Risk Management Processes

Agrimin undertook an environmental risk workshop on 24 September 2020, in attendance were representatives from Agrimin and environmental specialists from Stantec. The risk assessment was undertaken to identify and quantify all potential environmental risks for the Project to complete an Environmental Risk Assessment (ERA). The objective of the risk assessment was to:

- identify and rank inherent risks. Inherent risk is described as a risk event prior to implementing risk control options;
- develop risk control options to reduce inherent risk to as low as reasonably practicable (ALARP) and to a level consistent with DMIRS environmental objectives; and
- evaluate the residual risk after risk control options have been implemented.

During the risk assessment, the activity, unwanted event (cause) and impact of each of the identified risk events were first detailed. The likelihood and consequence of risk events occurring without any control options was then assessed to determine the inherent risk using the Agrimin current likelihood and consequence categories. Controls that aligned with the DMIRS ALARP Risk Assessment Controls were then applied to each risk event. The consequence and likelihood of each risk event occurring with the control options in place was then assessed to determine the residual risk.

6.3 Residual High Risk

For the purpose of this MCP, closure-related risks have been extracted from the overarching ERA. It should be noted that the ERA also contains operational, construction and all phases' risks. The closure risk assessment is presented in **Appendix C**. Thirteen low and ten medium risks remain after application of proposed controls. Although no residual high risks remain after application of proposed controls, several key closure risks have been identified and are summarised below:

- waste salt storage and disposal resulting in unplanned release of precipitated salts;
- alteration of water quality and groundwater drawdown;
- excess salt stockpiles altering the landscape;
- pond decommissioning and closure resulting in plastic liners not properly removed or buried and residual salts remaining;
- increase in feral animal populations from retained infrastructure; and
- unsuccessful rehabilitation of the Project area.

7. Closure Outcomes and Completion Criteria

7.1 Closure Outcomes

The EPA's Guidance for the 'Assessment of Environmental Factors – Rehabilitation of Terrestrial Ecosystems' provides the basis for rehabilitation and closure objectives for the Project. The primary EPA objective for rehabilitation, closure and decommissioning is to ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner.

Minimising environmental impacts requires the return of rehabilitated areas to self-sustaining and functional ecosystems, comprising local provenance species. The EPA Guidance requires that rehabilitation plans be based on clear objectives and targets which can be effectively monitored and audited to confirm objectives are achieved.

Specifically, rehabilitated areas should have the following attributes:

- safe, stable, and resilient landforms and soils;
- appropriate hydrology;
- suitable for agreed land uses;
- where appropriate, resilient, and self-sustaining vegetation comprised of local provenance species;
- achieves agreed numeric targets for vegetation recovery; and
- habitats capable of supporting all types of biodiversity.

Agrimin has developed a series of proposed closure outcomes (Table 7-1) for the Project in the context of the following nine aspects:

- compliance;
- stakeholders;
- safety;
- infrastructure and waste;
- aboriginal heritage;
- landforms;
- ecological function;
- hydrology; and
- closure provisioning

Closure outcomes will be further refined as the Project closure knowledge base increases and stakeholder discussion on post-mining land use continue throughout the life of the Project.

Table 7-1: Project Closure Outcomes

Aspect	Closure Outcome
Compliance	All legally binding conditions and commitments relevant to rehabilitation and closure are met.
Stakeholders	Stakeholder interests are considered during closure planning, ensuring that where reasonably practicable an optimal outcome is achieved.
	Criteria agreed with stakeholders are met.
	Agreed post-mining land use has been determined in consultation with relevant stakeholders.
Safety	The site is safe for use by humans and wildlife under the agreed post-mining land use.
Infrastructure and Waste	Infrastructure will be retained or removed in accordance with the agreed post-mining land use in consultation with relevant key stakeholders and with approvals granted where required.
	Decommissioning will take place in accordance with an approved decommissioning plan.
	The Project area is non-polluting with respect to surface water, groundwater and soils.
Aboriginal Heritage	Sites of Aboriginal Heritage and Cultural Significance are protected.
Landforms	Within the constraints imposed by the physical nature of the materials and environment, the final landforms are safe, stable and suitable for the agreed post-mining land use.
Ecological Function	Rehabilitation is sustainable and the land capability is suitable for the agreed post-mining land use.
	Where appropriate, revegetation of disturbed areas has occurred using locally occurring native vegetation appropriate for the area and post-mining land use.
	No new weed species are introduced by operational activities and surrounding native vegetation is not impeded by weed species.
	The final rehabilitated post-mining landform provides habitat opportunities for local native fauna where relevant.
	No new weed species are introduced by closure and rehabilitation activities and native vegetation is not impacted by weed species.
	Native vegetation and habitats, including terrestrial and aquatic, in the Project area have not been adversely impacted by rehabilitation and closure activities.
Hydrology	Mining-related impacts on surface water and groundwater quality have been minimised.
Contamination	Any sources of contamination are to be managed to as to eliminate any ongoing contamination of the local environment. The Project is compliant with the requirements of the *Contaminated Sites Act 2003* to achieve relinquishment.
Closure Provisioning	Cost of closure is adequately provisioned in company accounts to ensure that the community is not left with a liability.

7.2 Completion Criteria

A set of conceptual completion criteria and performance indicators have been developed to match all of the proposed closure outcomes (**Table 7-2**). Agrimin is committed to ensuring that the current completion criteria become more comprehensive and detailed in future revisions of the MCP, through the inclusion of quantitative standard values as they are developed, and with consideration to the Western Australian Biodiversity Science Institute's *A Framework for developing mine-site completion criteria in Western Australia* (Young et al. 2019).

Appropriate detail on the monitoring framework to be implemented for each of the closure criteria is also presented in **Table 7-2**. Agrimin will use recognised and acceptable monitoring methodologies and standards, and reference trends against expected or predicted performance based on the agreed closure criteria. The proposed post-closure monitoring program, including the type and frequency of monitoring against relevant completion criteria is presented in **Section 9**.

Preliminary quantitative rehabilitation completion criteria will be developed after initial rehabilitation monitoring and further collection of technical data, for inclusion in the next iteration of the MCP. Justification for these values will be discussed in the Collection and Analysis of Data section. In addition, completion criteria will be further modified and refined following the outcomes of post-mining land use negotiations to ensure they are fit for purpose.

Table 7-2: 2020 Mackay Potash Project Closure Outcomes and Completion Criteria

Aspect	Closure Outcomes	Domain	Completion Criteria	Monitoring Methodology	Performance Indicators
Compliance	All legally binding conditions and commitments relevant to rehabilitation and closure are met.	All domains	All legally binding conditions and commitments relevant to rehabilitation and closure are met.	Auditing by Agrimin responsible person or suitably qualified specialist.	• All legally binding conditions and commitments relevant to rehabilitation and closure as listed in the Legal Obligations Register are achieved. • An audit report for compliance against the Legal Obligations Register is available for review.
Stakeholders	Active stakeholder engagement takes place during closure planning, ensuring that where reasonably practicable an optimal outcome is achieved.	All domains	Stakeholders have been consulted with as per the agreed Stakeholder Engagement Strategy.	• Confirmation by Agrimin responsible person of compliance with stakeholder agreements. • Biannual review of the stakeholder consultation register and strategy to ensure appropriate stakeholder engagement has occurred, agreements are being maintained and concerns addressed.	• Confirmation of compliance with stakeholder agreements. • Evidence is available for review that demonstrates that key stakeholders have been informed on the Project status, development and any proposed changes to the Project and future iterations of the MCP. • Future iterations of the MCP demonstrate that priority outcomes of stakeholder rand community consultation in relation to closure have been taken into consideration in the development and reviews of the MCP.
	Criteria agreed with stakeholders are met.		The Project meets the agreed post-mining land use that was agreed by key stakeholders.	Auditing by Agrimin responsible person or suitably qualified specialist against completion criteria.	Confirmation of compliance with completion criteria.
	Agreed post-mining land use has been determined in consultation with relevant stakeholders.		Post-mining land use will be determined and agreed upon in consultation with relevant and key stakeholders, with agreement reached prior to closure.	• The post-mining land use is documented in the Agrimin MCP and is reviewed. • Review of the stakeholder consultation register to ensure discussions on post-mining land use and outcomes are captured.	Evidence is available for review that stakeholders have been engaged with and actively consulted regarding the post-mining land use.
Safety	The site is safe for use by humans and wildlife under the agreed post-mining land use.	All domains	All hazards that could endanger the safety of any person or animal have been identified and eliminated where practical.	Review of risk assessment.	• A risk assessment is available for review. • Confirmation of compliance with relevant regulatory guidelines and MCP.
			All residual safety and health hazards have been identified and controlled in accordance with regulatory requirements and consideration on industry guidance.	Review of risk assessment and final site assessment conducted.	
Infrastructure and Waste	Infrastructure will be retained or removed in accordance with the agreed post-mining land use in consultation with relevant key stakeholders and with approvals granted where required.	All domains	Infrastructure and access tracks will either be fully decommissioned and rehabilitated or transferred to another party according to the agreed post-mining land use.	• Site inspection and review of documentation of infrastructure removal and rehabilitation undertaken. • Review of transfer agreements or equivalent for retained infrastructure.	• Confirmation of compliance with the MCP and decommissioning plan or equivalent. • Transfer agreements are in place for retained infrastructure.
	Decommissioning will take place in accordance with an approved decommissioning plan.		A decommissioning plan is developed and established prior to commencing closure works.	Review of the decommissioning plan.	Compliance with the requirements of the decommissioning plan.
	The Project area is non-polluting with respect to surface water, groundwater, and soils.		Any materials wastes or hazards with potential for adverse environmental impact have been identified and managed.	Site inspection/monitoring (e.g. visual assessment, soil testing), materials characterisation where and if required, and review of risk assessment by a suitably qualified specialist or internal Agrimin responsible person.	Confirmation of compliance with the MCP, and controls identified in risk assessment are in place.
Aboriginal Heritage	Sites of Aboriginal Heritage and Cultural Significance are protected.	All domains	All sites of Aboriginal Heritage and Cultural Significance are identified and protected in compliance with the *Aboriginal Heritage Act 1972*.	Inspection by Agrimin responsible person or suitably qualified specialist against register of identified and protected sites.	All identified sites are protected as per agreed outcomes.

Landforms	Within the constraints imposed by the physical nature of the materials and environment, the final landform is safe, stable, and suitable for the agreed post-mining land use.	Landforms	The final closure strategy selected for the landforms' domain ensures that the Project area will be safe, stable and suitable for the agreed post-mining land use.	• Monitoring of surface stability of the lake and surrounding environment using:
				  ○ Visual assessment
				  ○ Remote sensing
				  ○ Other equivalent methods where appropriate to ensure that the post-closure lake environment is safe, stable and suitable for the agreed post-mining land use.
					• Confirmation against specifications and the mine closure plan that the landform is stable.
					• Data and observations from the visual assessment, remote sensing and other methods where appropriate indicate that there will be no unacceptable post-closure impacts.

Aspect	Closure Outcomes	Domain	Completion Criteria	Monitoring Methodology	Performance Indicators
				• Audit by Agrimin responsible person or suitably qualified specialist that the final landform has been rehabilitated according to agreed specifications.	
Ecological Function	Rehabilitation is sustainable and the land capability is suitable for the agreed post-mining land use.	Landforms Industrial Infrastructure (rehabilitated)	• A rehabilitation seed mix of native local provenance species appropriate for the post-mining land use will be used in selected areas for revegetation in conjunction with topsoil where available and appropriate. • Vegetation cover, density and species richness are within the range of target analogue values. • Revegetation demonstrated persistence through propagule development and seedling recruitment.	• Rehabilitation seed mix and use and topsoil use in revegetated areas is documented and reviewed. • Vegetation cover (%), species composition, richness and density are assessed using an appropriate rehabilitation monitoring procedure. • Rehabilitation monitoring program conducted according to an agreed monitoring schedule.	• Evidence of monitoring is available as per agreed timeframe in the closure monitoring schedule. • Rehabilitation monitoring reports are produced with data summarised and learnings implemented where appropriate in each iteration of the mine closure plan.
	Where appropriate, revegetation of disturbed areas has occurred using locally occurring native vegetation appropriate for the area and post-mining land use.				
	The final rehabilitated post-mining landform provides habitat opportunities for local native fauna where relevant.				
	No new weed species are introduced by closure and rehabilitation activities and surrounding native vegetation is not impacted by weed species.		• Weeds (introduced species) do not dominate the rehabilitated areas. • No new weed species are introduced by closure and rehabilitation activities. • Native vegetation surrounding the Project is not impacted by weeds.	• Weed surveys to measure percentage cover, density, distribution and species composition as part of the rehabilitation monitoring program and agreed monitoring schedule. • Visual assessments conducted on an ad-hoc basis where appropriate.	Evidence of monitoring being undertaken (rehabilitation monitoring reports and/or weed assessment reports) as per agreed monitoring schedule.
	Native vegetation and habitats, including terrestrial and aquatic, in the Project area have not been adversely impacted by rehabilitation and closure activities.	All domains	Surrounding native vegetation and habitats in the Project area, both terrestrial and aquatic, have not been adversely impacted by rehabilitation and closure activities.	• Visual assessment, vegetation health and condition monitoring and monitoring of fauna where relevant will be undertaken of designated areas of existing native vegetation to determine whether there are any risks post-closure from salinity, weeds, changes in water level, water quality or other impacts. • Monitoring of aquatic biota and fauna dependent on aquatic ecosystems.	Evidence of monitoring being undertaken as per agreed monitoring schedule.
Hydrology	Mining-related impacts on surface water and groundwater quality have been minimised.	All domains	Where required, surface water diversion structures are in place at closure and constructed in accordance with approved engineered designs.	• Visual assessment of surface drainage and impacts to downstream environments. • Audit by Agrimin responsible person or suitable qualified specialist.	Evidence of visual assessment and audit being undertaken as per agreed monitoring schedule.
			Surface water chemistry does not exceed agreed levels.	Monitoring of surface groundwater chemistry in accordance with an approved environmental management plan or equivalent.	Confirmation of compliance with agreed surface water chemistry values after closure. Evidence of monitoring being undertaken as per agreed monitoring schedule.
		All domains	Groundwater levels and chemistry does not exceed agreed levels and is capable of supporting aquatic fauna and riparian vegetation where appropriate.	• Monitoring of groundwater levels and sampling of groundwater for water quality via bores. • Review against the mine closure plan and/or relevant environmental management plan (EMP) • Continued development of a Project-wide groundwater model.	• Confirmation of compliance with agreed groundwater levels post-closure. • Evidence of monitoring undertaken as per an agreed monitoring schedule until completion criteria are achieved.
Contamination	Any sources of contamination are to be managed to as to eliminate any ongoing contamination of the local environment. The Project is compliant with the requirements of the *Contaminated Sites Act 2003* to achieve relinquishment.	All domains	Contaminated sites are identified and managed as per the *Contaminated Sites Act 2003*.	Final contaminated site verification audit by a suitable certified, independent Contaminated Sites professional.	• Final contaminated site verification audit report available at relinquishment. • Evidence of a completed PSI and DSI at the time of closure.
Closure Provisioning	Cost of closure is adequately provisioned in company accounts to ensure that the community is not left with a liability.	All domains	Closure provisioning for the Project is periodically reviewed and updated in the Mine Closure Plan.	Annual review of closure cost provision.	Closure cost provision takes into account all updates to the Project's rehabilitation and closure strategy.

8. Closure Implementation

8.1 Project Domains and Features

To facilitate effective mine closure planning, the Project has been divided into a number of physically distinct domains and features with similar closure, rehabilitation and decommissioning requirements (refer to Section 1.4.1), as outlined in Table 8-1. This structure has enabled Agrimin to develop broad closure strategies for each domain and specific strategies for each feature, in addition to identifying knowledge gaps for features. The location of the domains in relation to development envelopes are shown in Figure 8-1, Figure 8-2, Figure 8-3 and Figure 8-4.

Table 8-1: Project domains, features, and development envelope

Domain	Feature	Development Envelope
Landforms	Waste Salt Stockpiles	On-LDE
	Topsoil Stockpiles	Off-LDE, SIDE and NIDE
	Borrow Pits	NIDE
Industrial Infrastructure	Processing Plant	Off-LDE and SIDE
	Accommodation Village	
	Diesel Fuel Storage Areas	
	Power Supply (Power Station, Wind Turbines and Solar Farm)	
	Communications Infrastructure	
	Airstrip	
	Landfill	
	Waste Water Treatment Plant	
	Plant Area Facilities	
	General Administration Facilities	
Mining Infrastructure	Brine Extraction Trenches and Canals	On-LDE
	Solar Evaporation Ponds	
	Brine Pumping Stations	
Water Containment Infrastructure	Water Storage Pond	Off-LDE
	Reverse Osmosis Plant	
	Bore Water Delivery Pipelines	SIDE
Groundwater Infrastructure	Borefields	SIDE
Roads	Haul Roads	NIDE
	Access Roads and Tracks	Off-LDE and SIDE
Exploration Disturbance	Exploration Disturbance	On-LDE, Off-LDE and SIDE

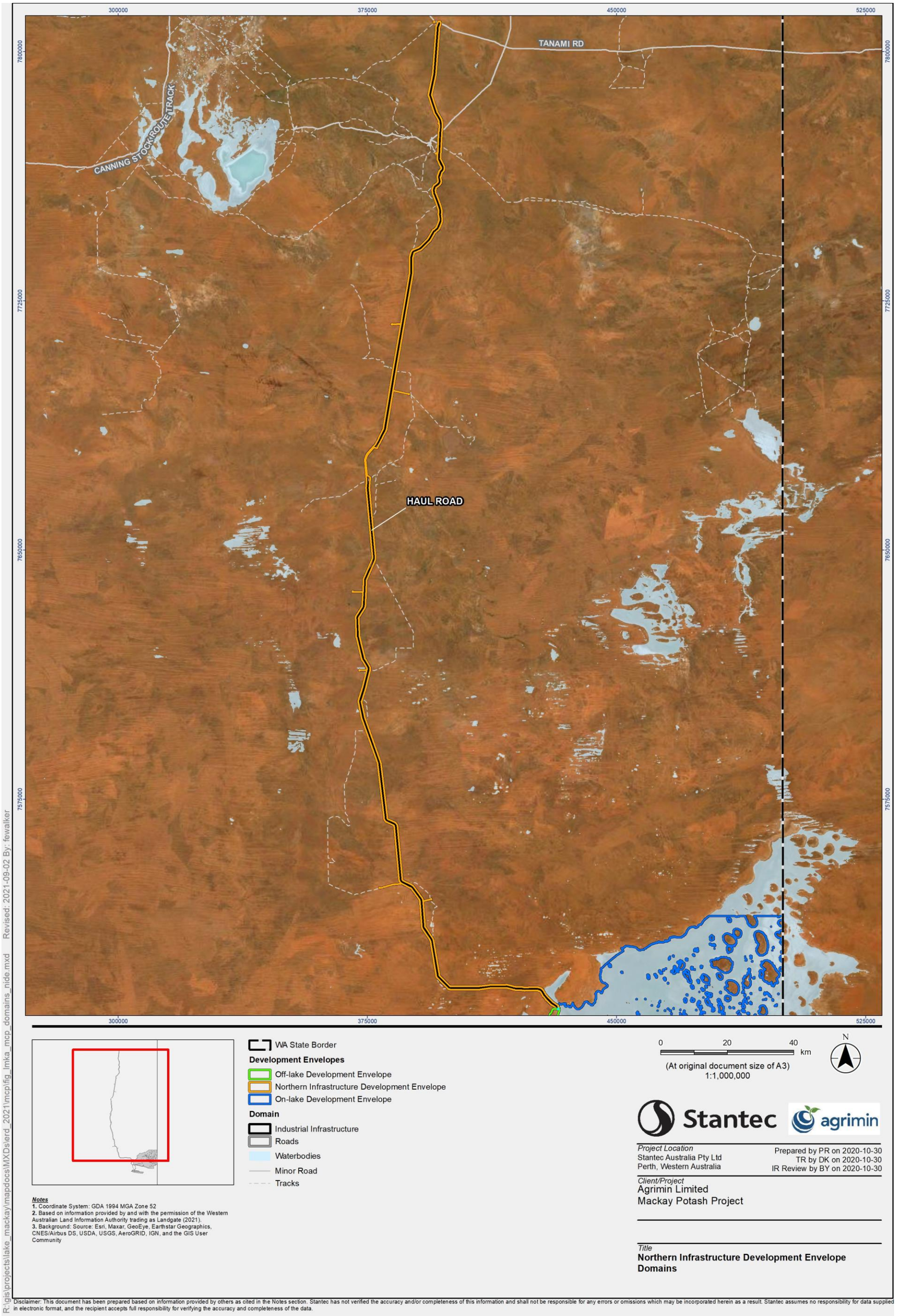

Figure 8-1: Northern Infrastructure Development Envelope Domains

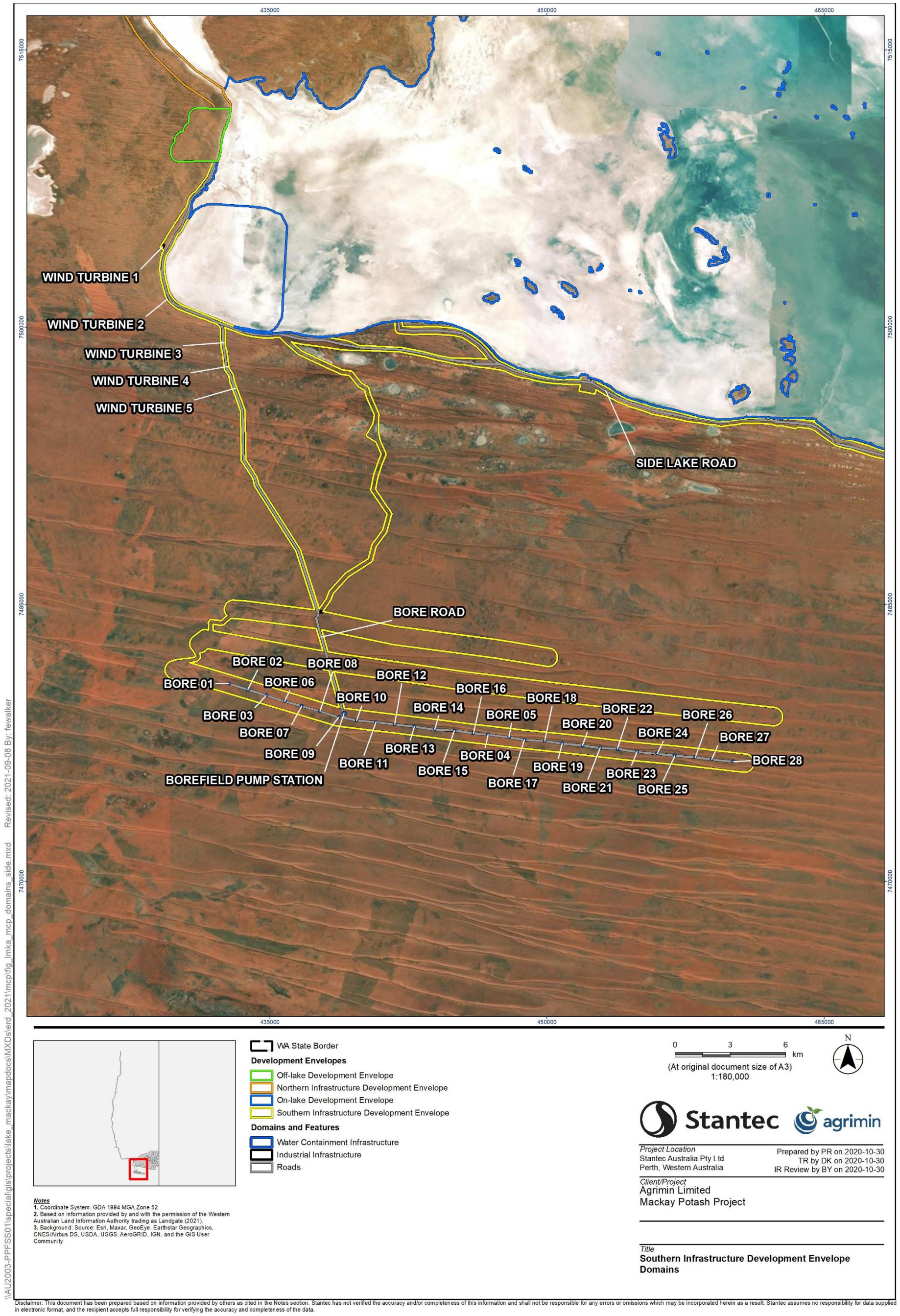

Figure 8-2: Southern Infrastructure Development Envelope Domains

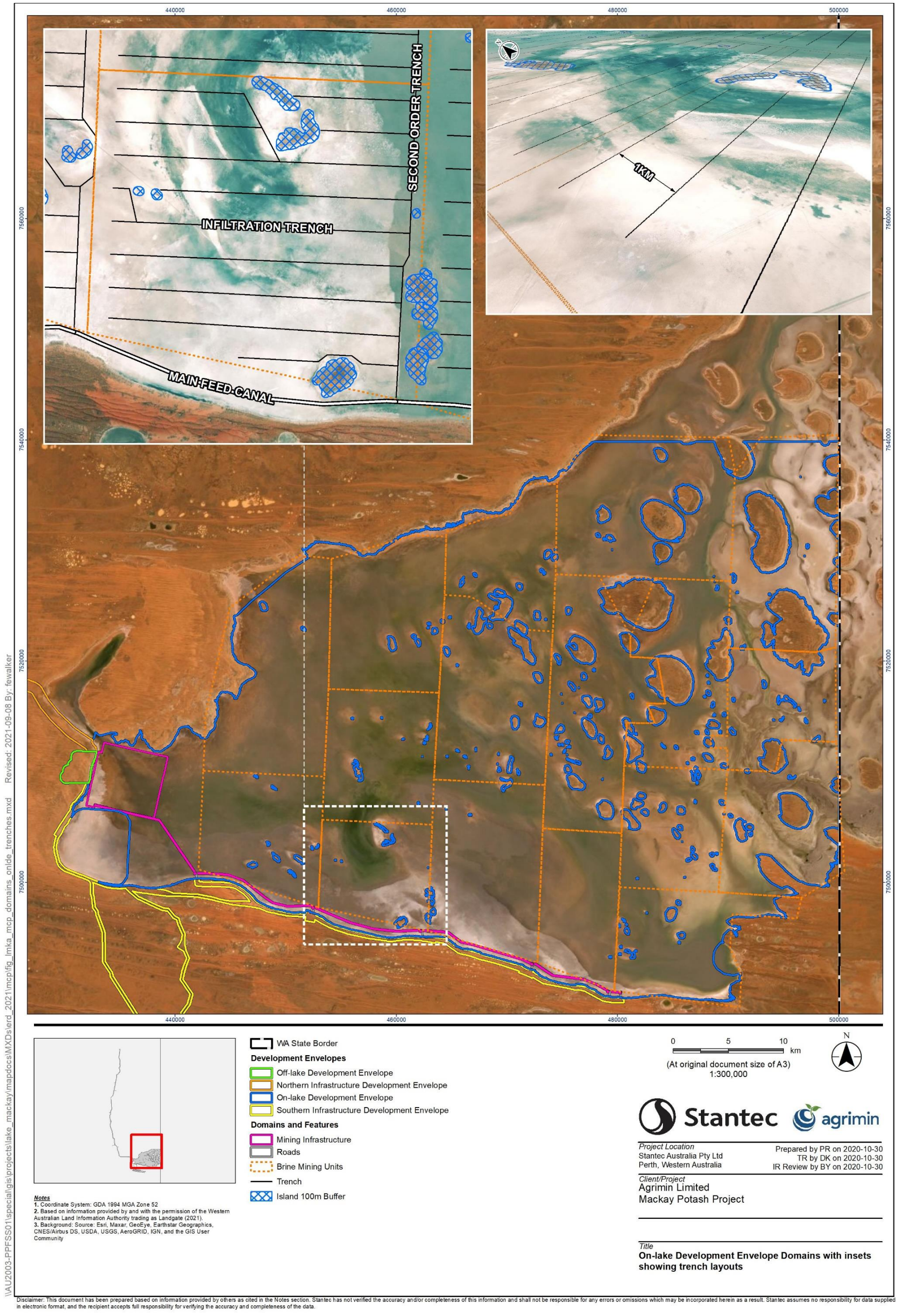

Figure 8-3: On-Lake Development Envelope Domains

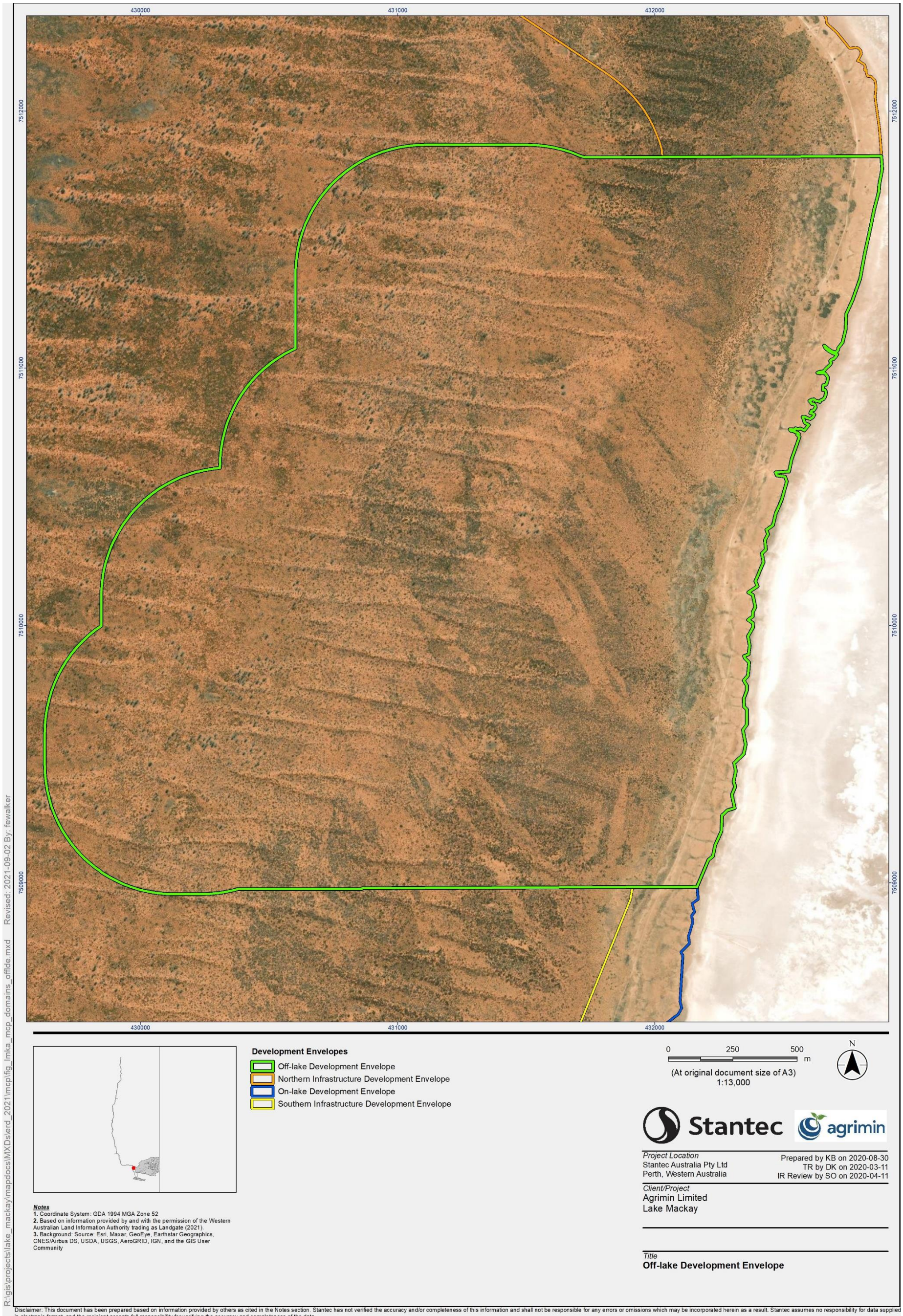

Figure 8-4: Off-Lake Development Envelope Domains

8.2 Domain Closure Outcomes and Completion Criteria

Closure outcomes and completion criteria are presented in Section 7. Table 7-2 outlines the relevance of the closure outcomes and completion criteria to each specific Project domain.

8.3 Knowledge Gaps and Actions

A review of the knowledge base for each domain and feature was undertaken to identify any potential knowledge gaps which may limit the development of the final rehabilitation and closure strategies. This has led to the development of site-wide domain gaps which are presented in Section 8.4. Agrimin has developed a collated register of the identified knowledge gaps and associated closure implementation tasks, presented as Appendix D. This register is intended to be a live workbook which will be updated progressively once the Project is operational and new information becomes available, and as tasks are closed out.

8.4 Closure Approach and Implementation

A set of overarching and feature specific closure implementation tasks have been developed relating to:

- research, investigation, and trials required to address knowledge gaps;
- progressive rehabilitation;
- premature closure; and
- decommissioning.

Not all of the above closure implementation tasks are applicable to all features, for example, the Project provides limited opportunity for progressive rehabilitation as areas required for the operation of the Project are likely to be used simultaneously until closure.

Closure/decommissioning tasks include, but are not limited to the following key activities:

- demolition and removal of infrastructure;
- contaminated sites investigation and reporting where relevant;
- re-shaping of remaining landforms (where and if required);
- completing rehabilitation and remediation tasks;
- monitoring and measuring the performance of closure activities against the agreed standards and criteria;
- inspections, consultation, and reporting to stakeholders on progress; and
- progressive community and government sign-off on rehabilitated areas.

Knowledge gaps and proposed actions are outlined in Table 8-2 and a brief description of each feature is detailed in the following sections, with the broad closure approach detailed in Section 8.4.8. The closure knowledge base has been summarised from Agrimin's Definitive Feasibility Study (DFS) (Agrimin 2020) prepared for the Project and will be further refined in future iterations of the MCP. For ease of classification, the broad terms 'Plant Area Facilities' and 'General and Administration Facilities' have been used as a feature name, it should be noted that each one is comprised of various individual features.

Table 8-2: Project Closure Knowledge Gaps and Proposed Action Register

Domain	Aspect	Gap/Risk	Proposed Action	Timeframe	Responsibility
Site Wide	Closure and rehabilitation strategy for the Project	• rehabilitation failure; • potential increase in financial liability; • potential impact to surrounding ecological receptors; and • inability to meet completion criteria and achieve relinquishment.	• undertake closure options analysis; • identify areas for progressive rehabilitation in the Project and undertake rehabilitation trials where possible; • update future MCP with closure options analysis and areas for progressive rehabilitation; • refine closure options analysis progressively with results from technical studies and modelling; and; • update closure strategy in MCP.	2021 - ongoing	Agrimin General Manager
	Closure conceptual model	There is currently no conceptual closure model for the Project	• continue development of conceptual closure model and include in future iteration of the MCP.	2021-2022	Agrimin General Manager
Landforms	Limited information on the long term and post-closure effects of salt stockpiles left in situ at closure	• potential impacts to ecological receptors including riparian vegetation and aquatic biota; • rehabilitation failure; • potential increase in financial liability; • potential impact to visual amenity; and • inability to meet completion criteria and achieve relinquishment.	• monitoring of consolidation, dissolution rates and erosion at waste salt stockpiles; • monitoring of surface water salinity after rainfall events; • assessment of salt crust development using aerial imagery; and • monitoring of riparian vegetation and lake biota to determine potential impacts of salt stockpile.	At commencement of operations and ongoing	Agrimin General Manager
	Limited information on proposed or potential locations of topsoil stockpiles and borrow pits	• rehabilitation failure; and • inadequate closure provisioning.	• confirm final location of borrow pits once haul road design is confirmed, if different to current proposed locations; • update MCP with proposed locations of topsoil stockpiles and borrow pits; • calculate potential volume of topsoil available for future progressive rehabilitation; and	2021 and ongoing	Agrimin General Manager

Domain	Aspect	Gap/Risk	Proposed Action	Timeframe	Responsibility
			• develop a topsoil inventory which will be developed progressively during construction and operations.		
	Closure strategy for landforms	*Refer to Site Wide*			
Industrial Infrastructure	A final list of all infrastructure across the Project.	• Potential increase in financial liability	• progressively update an inventory of all infrastructure across Project; and • update list of industrial infrastructure and closure tasks in the MCP.	2022 onwards	Agrimin General Manager
	Lack of clarity on retention and use of infrastructure by a third-party post-closure.	• Increase in financial liability due to removal of infrastructure and closure of features.	• update list of industrial infrastructure and closure tasks in the MCP; and • continue to engage stakeholders in discussions on ownership and responsibility for infrastructure across the Project.	2021 onwards	
Mining Infrastructure	Closure strategy for all mining infrastructure.	• Potential impacts to surrounding ecological receptors from lack of final closure strategy for trenches, canals and ponds	• undertake closure options analysis; and • update closure options analysis progressively with relevant information from updated modelling and monitoring e.g. climate, groundwater; and • finalise closure strategy prior to closure and communicate with key stakeholders.	2021 onwards	Agrimin General Manager
Water Containment Infrastructure	Lack of detail on design and construction specifications of the features.	• Inadequate closure provisioning	• update knowledge base progressively in the MCP once designs are further developed and finalised; and • update relevant closure tasks/closure approach.	2021-2025	Agrimin General Manager
	Lack of clarity regarding post-closure responsibility or requirement for use.	• Inadequate closure provisioning	• conduct a final inventory of all water containment infrastructure; • determine which will require decommissioning and which will be transferred to a third party; and • develop a decommissioning plan for all features requiring decommissioning.		
Groundwater Infrastructure	Requirements for the retention of any bores post-closure for ongoing monitoring or other groundwater infrastructure	• Inadequate closure provisioning •	• conduct a final inventory of all groundwater infrastructure; • determine which will require decommissioning and which will be transferred to a third party; and	2021-2025	Agrimin General Manager

Domain	Aspect	Gap/Risk	Proposed Action	Timeframe	Responsibility
	for other uses as determined by key stakeholders in line with the post-closure land use		• develop a decommissioning plan for all features requiring decommissioning.		
Roads	The final length, area and construction dimensions of haul roads, access roads and tracks and of upgrades to existing tracks and roads.	• Inadequate closure provisioning	• update knowledge base progressively in the MCP once designs are further developed and finalised; • update closure strategy for the roads; and • update closure provisioning.	2021 onwards	Agrimin General Manager
	Lack of finalised agreements with other stakeholders for access and responsibility post closure.	• undetermined post mining-land use; and • inadequate closure provisioning	• continue stakeholder engagement to determine use of and responsibility for access roads, tracks, and haul road post-closure; and • establish agreements prior to closure for transfer of any roads or access tracks.		
Exploration Infrastructure	The extent of any leftover exploration infrastructure that will require rehabilitation at closure.	• Risk of unrehabilitated exploration infrastructure areas and uncertainty around cost and extent of rehabilitation and closure effort required.	• update the inventory of exploration infrastructure features across the Project; • identify which features are no longer required and can be rehabilitated; • identify whether any features may still be required and undertake stakeholder consultation to determine appropriate responsibility and agreements; and • rehabilitate remaining features as per approved MCP.	2021 onwards	Agrimin General Manager

8.4.1 Landforms

8.4.1.1 Waste Salt Stockpiles

The preconcentration ponds P6 & P7 (refer to Section 8.4.3.2) are expected to produce approximately six million tonnes of waste salt per year of operation. These waste salts will be removed from the ponds as a slurry in the pond brine with floating dredge style salt harvesters.

The use of booster pumps to reach the waste salt stockpiles adjacent to their respective ponds is proposed particularly as the salt piles expand within their nominated area over the life of the Project. This will be further developed during the detailed design phase and will be updated in future iterations of the MCP. The brine contained in the slurry will be recovered and returned to the respective ponds to minimise potassium losses.

The salt piles will comprise a series of deposition cells, each approximately 25 ha in area, that will be constructed adjacent and to the north of P6 and P7. Each deposition cell will consist of a perimeter cut-off trench, nominally 2 m deep, with the trench spoil deposited to form a berm on the outside of the cell. The salt will be open pipe discharged in the cell, with the brine draining into the cut-off trench and then flowing back to a sump pump to be pumped into the pond. As each cell is filled with salt the open pipe discharge point will be moved to another cell so that the salt can completely drain of brine. The salt slurry pipe discharge point will be managed to prevent salt discharging beyond the cut-off trench bund area, in order to recover the brine and prevent brine spilling out onto the lake. The brine recovery infrastructure will be relocated as the salt pile footprint increases as part of the pile management strategy. Dozers may be used to heap and profile the waste salt piles. Once a particular cell reaches its capacity, the slurry will be directed to an adjacent cell in the waste area, where the dozers will continue to manage the pile. The salt piles for P6 and P7 will accumulate over the 20-year life of the operation and are anticipated to reach nominally 20 m height and to occupy an area of approximately 500 ha after 20 years of operation.

8.4.1.2 Topsoil Stockpiles

A designated area or several areas for topsoil stockpiles will be selected, in close proximity to the processing plant. The area will avoid drainage lines and low-lying areas and will be located where they will not be disturbed by future placement or construction of any infrastructure, as excessive handling will impact the quality of the topsoil. Where possible, stockpiles will be as low as possible (<2 m) and used where required on selected rehabilitation areas progressively. For the purpose of this MCP, a conceptual location only has been depicted on the domains map.

8.4.1.3 Borrow Pits

Proposed borrow pit locations are currently part of a haul road design and will be finalised prior to confirmation of the final haul road design and construction. Geotechnical sampling and geological programs will continue where required to identify suitable locations and sources. The current assumption for the conceptual haul road design is that borrow sources are available at 2.5 km intervals and that 140 ha of clearing will be undertaken for borrow pit development. Current proposed placement of borrow pits is depicted on the domains map.

8.4.2 Industrial Infrastructure

8.4.2.1 Processing Plant

The proposed processing plant is planned to be located to the west of the evaporation ponds and as close as possible to the western shore of the lake. The engineering design and construction approach have been developed with consideration of the Project's remote location and desert conditions. A conceptual model of the plant is shown in Figure 8-5, with a process flow description and diagram included in Section 1.1.2

Figure 8-5: Conceptual model of the processing plant

8.4.2.2 Accommodation Village

The proposed site for the camp facilities is at the southwest end of the lake. This relatively flat lying area has also been selected as the site for the processing plant, waste and product storage and airstrip. The accommodation village is expected to accommodate 100 workers. It will include the accommodation units which will be arranged in blocks of modules, and supporting services including recreation room, stores, laundries, potable water storage, gymnasium and equipment, outdoor court, pool, toilets, ice room, administration, retail, and mess facilities.

8.4.2.3 Diesel Fuel Storage Areas

Diesel will be used for mobile equipment and as fuel for remote diesel-fired generators to power the process water borefield and to power the process water borefield and remote pumping stations along the brine feed canal. It will also be used as fuel for road trains transporting product to port. The diesel fuel storage areas will be located along with other site infrastructure areas on the western edge of Lake Mackay. A total storage of 330 kL is proposed to be provided at the processing plant via three 110 kL diesel tanks with receival, storage and dispensing facilities. The fuel unloading and loading stations will have concrete pads with containment curves, wing walls, bunds and sumps to capture spilt fuel.

8.4.2.4 Power Supply

The Project will have an installed power supply of 22 megawatts and an average load of 16 MW utilising a hybrid gas, solar (solar farm), wind (wind turbines) and battery solution for a modelled renewables penetration of 58%. This power load will supply the processing plant, non-process infrastructure, offices, and accommodation camp, as well as harvesting and pumping operations within the evaporation ponds.

8.4.2.5 Communications Infrastructure

The Project will have a series of communications infrastructure in place to enable microwave communication access; lake and borefield telemetry; overall wide area network, internet and security; administration local area network routers and switches; IP telephone and unified communications system; village entertainment system; Wi-Fi network and two-way radio (VHF/DMR). A series of six towers will require installation, three of which will be located within Agrimin tenements (a site tower near the administration village, and two midpoint towers near the borefield) and three more towers that are not on Agrimin tenements. Negotiations with the Traditional Owners will be required and relevant access agreements in place in order to be able to install communications infrastructure connecting to the National Broadband Network.

8.4.2.6 Airstrip

The airstrip location is proposed to the south of the accommodation village (camp), which is located on the western edge of Lake Mackay. The construction of the sealed airstrip has been planned to allow a fly-in, fly-out air service operating from Perth. The airstrip will run parallel to the main dune system that will provide some protection from noise on landing and take-off. Proposed dimensions are 1650 m in length and 30 m width. In addition, a designated helipad will be constructed at the airstrip refuelling area. It is currently assumed that the aviation refuelling area includes fuel farm allowance for a 55,000 L tank for aeroplane refuelling and helicopter fuel requirements. The aircraft parking apron and refuelling areas will also be bitumen sealed.

8.4.2.7 Landfill

Solid wastes are likely to be disposed of into a locally established landfill operated under relevant approvals and licences. Solid wastes not suitable for general landfill will be reused and recycled if appropriate or removed to a separate offsite waste management facility.

8.4.2.8 Waste Water Treatment Plant

All effluent generated will be treated in a waste water treatment plant (WWTP) located alongside the potable water storage at the accommodation village. The WWTP will dispose of the treated effluent via a sprinkler system discharging to a designated area some distance from the camp.

8.4.2.9 Plant Area Facilities

Several general operational facilities and buildings are required for the operation and will be situated on the western edge of Lake Mackay. All facilities will be designed and built to Australian Standards with adequate fire protection/separation, access/agree and parking. The plant area facilities include:

- control building within the processing plant area;
- heavy and light vehicle workshop;
- warehouse;
- general yard;
- vehicle washdown bay and oil/water separator and the mobile plant workshop;
- fuel storage and refuelling facilities;
- reagents storage shed;
- first aid facility;
- product storage shed;
- chiller building/shed;
- boiler shed; and
- compressor shed

8.4.2.10 General and Administration Facilities

Several general and administration buildings are required for the operation and will be situated on the western edge of Lake Mackay. All facilities will be designed and built to Australian Standards with adequate fire protection/separation, access/egress and parking. The general and administration facilities will include:

- central administration building (induction and training room, conference facilities, operations, offices, crib rooms, change facilities and toilet);
- driver crib room;
- testing laboratory; and
- warehouse/workshop office

8.4.3 Mining Infrastructure

8.4.3.1 Brine Extraction Trenches and Canals

The brine extraction trenches have been designed in order to deliver the annual brine flows required to achieve a feed rate of 540 ktpa of contained SOP into the solar evaporation ponds. Stantec completed the initial civil engineering designs for the trench network and Agrimin undertook excavation of 22 pilot trenches

between 2017 and 2019 in order to provide geotechnical information in relation to the long-term stability and operation of the trenches. The trench network has been designed so as to minimise the volume of material excavated. It has been split into a series of 17 brine mining units (BMU) (**Figure 8-6**), which are defined as areas of lakebed sediment that have similar physical and characteristics.

The average depth is 4.5 m below ground surface to allow sufficient volume and gradient for the brine to naturally flow via gravity along the trenches. Brine extraction will consist of gravity drainage into east-west infiltration trenches, which will then flow into larger north-south oriented trenches that will gravity feed into the main feed canal. Brine will then be transferred along the main feed canal to the solar evaporation ponds with the assistance of six pumping stations. The pumping (or gravity drainage) of individual BMU's commences at different stages after the trench network has been completed for that specific BMU.

8.4.3.2 Solar Evaporation Ponds

Brine from the lake will be passed through a solar evaporation pond system where natural evaporation will concentrate the brine and precipitate the salts into solid form on the base of the ponds. Halite and other waste salts are precipitated first, with the potassium bearing salts deposited in the final harvest ponds. The salts will then be recovered from the harvest ponds using salt harvesters which will pump the salt slurry into the processing plant. Five salt harvesters are proposed for the Project and have been designed to be autonomous and to operate using a pre-programmed sequence. The harvesters will operate year-round in the P6, P7, H1 and H2 ponds, with P6 having two harvesters due to the larger pond size. Pre-concentration ponds P6 and P7 are harvested to recover potassium rich brine and minimise entrainment losses, and production ponds H1 and H2 are harvested to collect raw potash salts for transfer to the processing plant. Slurry pipelines run the full length of the production ponds H1 and H2 which connect to the floating slurry line. The two production pond harvesters will feed to the processing plant directly. A slurry pump on board will discharge the salt slurry from the harvester to a booster pump on the shoreline which will transfer the slurry to the processing plant.

The solar evaporation ponds have been designed to produce 3.0 Mtpa of raw potash salts grading 14% K2O. The raw potash salts will then be fed into the processing plant and refined into 450 ktpa of finished SOP fertiliser grading 52% K2O. Agrimin completed an on-site evaporation pan test program which helped determine the current pond design.

The evaporation ponds will be located in the south-western area of Lake Mackay. Hydrology and geotechnical testing have been undertaken to determine that the natural lakebed surface is suitable for un-lined pond floors. The internal and external pond embankments will be constructed as cut-to-fill structures using in-situ materials (lake bed materials). Embankments will vary in height between 1.7 m and 3.1 m with a 5 m crest. The geotechnical assessment undertaken has determined that the pond floors will have a low permeability resulting in low seepage losses back into the lakebed. Horizontal permeability will be addressed by HDPE lining the inside of the embankments. Alternative options instead of using an HDPE liner are being investigated.

The proposed pond design comprises nine evaporation ponds covering an area of 29.4 km^2 (Figure 8-7). Brine will be transferred progressively through the ponds to selectively crystallise specific salt minerals. The first stage is to evaporate salts in seven pre-concentration ponds (P1 to P7), followed by two production ponds (H1 and H2). Raw potash salts that crystallise in the production ponds will be pumped as a slurry to the processing plant.

The P1 to P5 pre-concentration ponds will produce waste salts, mainly halite, thenardite, and hexahydrate, which will accumulate on the pond floors throughout the life of the operation. Pond embankments will be raised when required to accommodate the rising pond floor. The P6 and P7 pre-concentration ponds will also produce waste salts and will be continuously wet harvested to recover some of the high potassium entrained brine from the waste salt. The waste salts harvested in P6 and P7 will be stacked on dedicated drainage pads to recover most of the entrained brine, with the bring recovered from the stacks to be pumped back to P6 and P7.

The H1 production pond will produce raw potash salts in the form of kainite along with some waste salts mostly in the form of halite. The exiting H1 brine will be transferred to the H2 production pond which will produce raw potash salts in the form of carnallite along with some halite and hexahydrate waste salts. The raw potash salts that crystallise in these two production ponds will be continuously wet harvested and pumped directly to the processing plant via two independent slurry pipelines. The slurry pipelines are included as part of this feature.

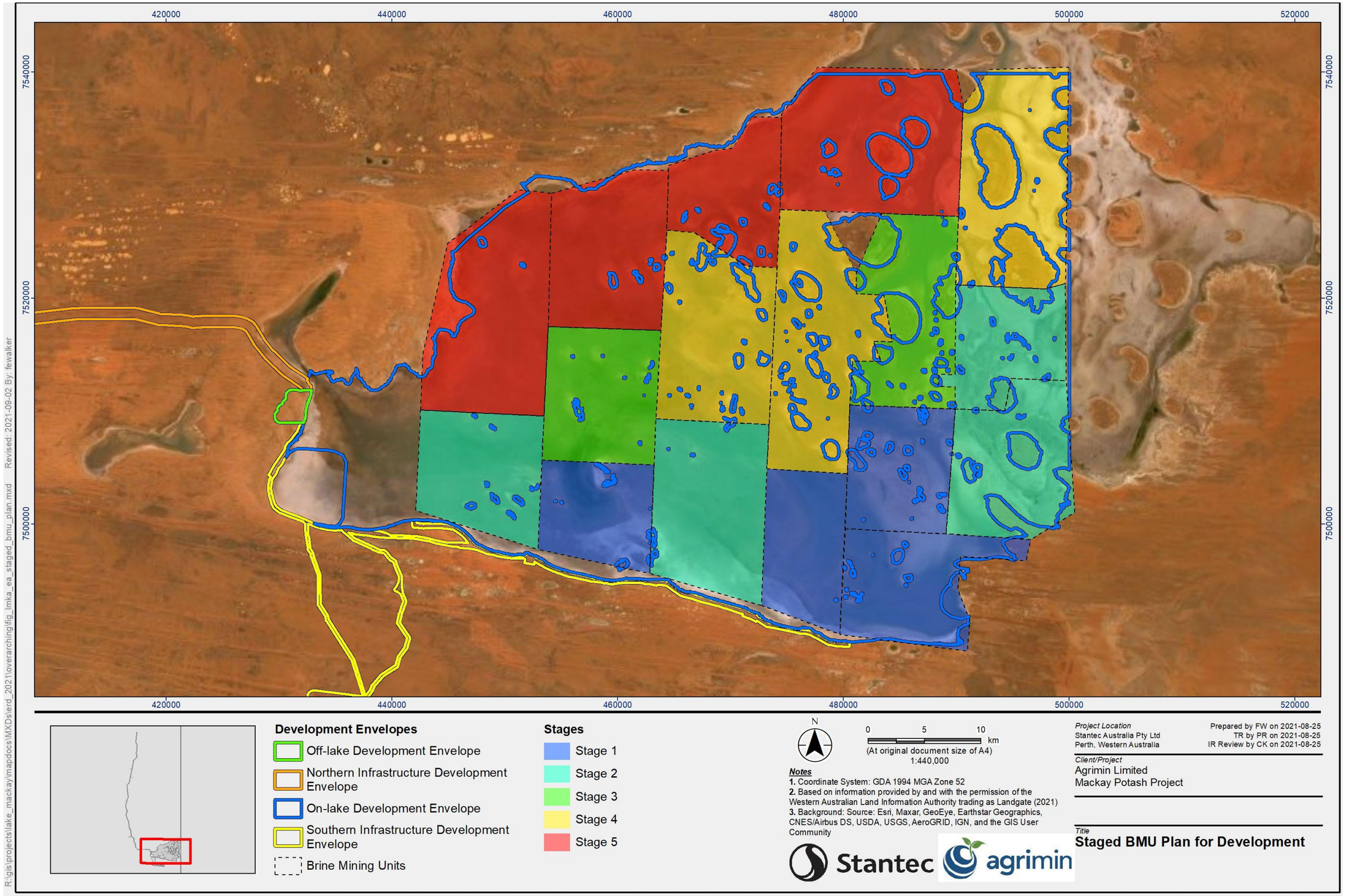

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Figure 8-6: Brine Extraction Trench network layout with individual brine mining units

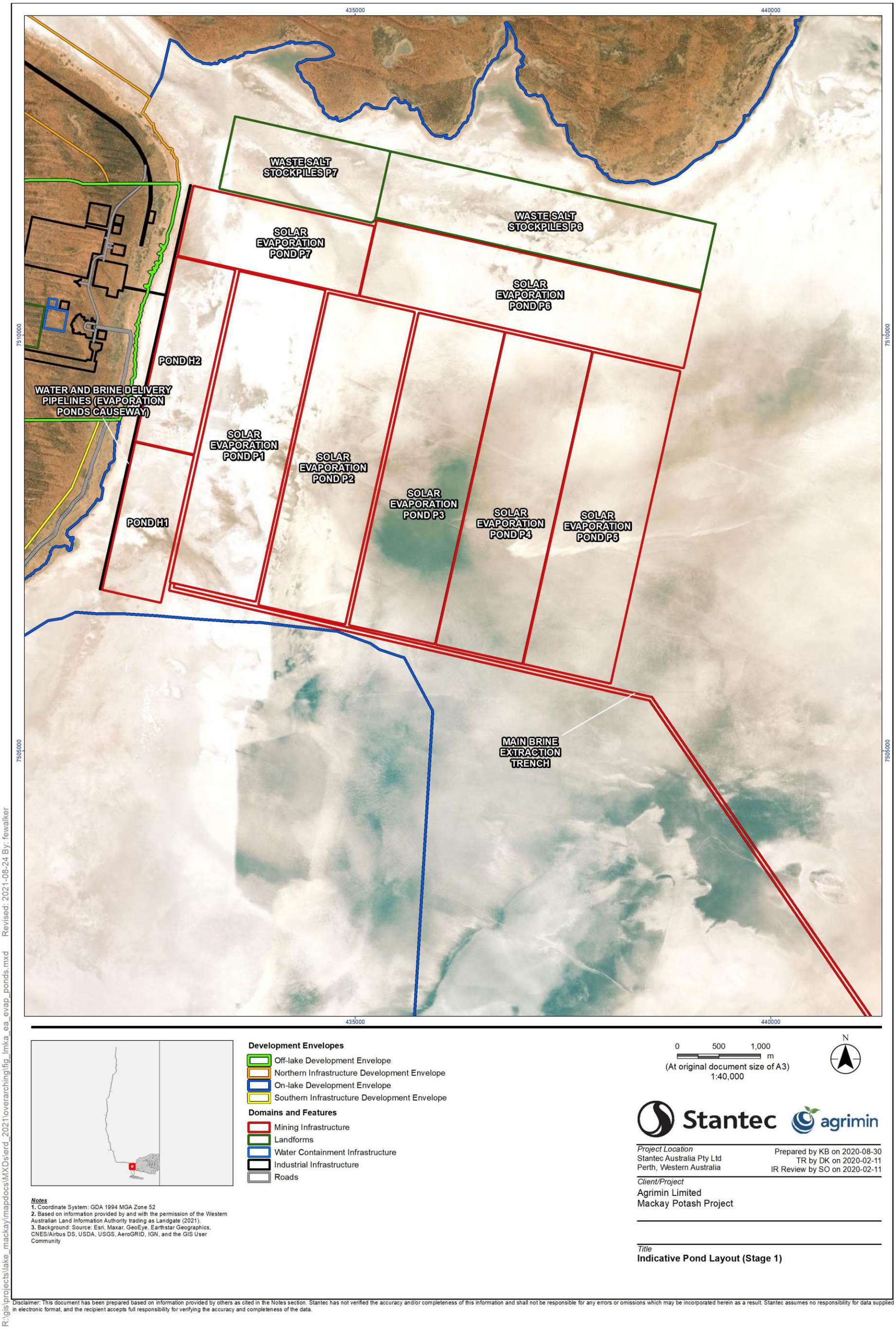

Figure 8-7: Solar Evaporation Pond layout

8.4.3.3 Brine Pumping Stations

It is proposed to have six pumping stations for the Project. These will be powered by diesel and will be located along the main brine feed canal (refer to **Section 8.4.3.1**). The pumping stations will assist in directing the brine extracted from the brine extraction trenches towards a series of solar evaporation ponds.

8.4.4 Water Containment Infrastructure

8.4.4.1 Water Storage Pond

The raw/process water demand with water quality at below 5,000 mg/L TDS is calculated at 3.17 GL/year. The lined water storage pond is proposed to be sized for 2-day storage capacity (50 m x 50 m x 5 m depth). The pond level is monitored to control raw water transfer flowrate from the borefield.

8.4.4.2 Reverse Osmosis Plant

The Reverse Osmosis Plant will produce potable water based on requirements for site personnel in the operations area, for use by the boiler system within the process plant and for personnel in the village.

8.4.4.3 Water and Brine Delivery Pipelines

There are a series of pipelines associated with the Project including water pipelines, brine delivery pipelines and sewage pipelines.

8.4.5 Groundwater Infrastructure

8.4.5.1 Borefields

The Project is estimated to require 3.2 GL/a of raw water for the SOP processing plant based on the steady-state production rate. In addition, an estimated 0.1 GL/a of potable water will be required for the site. Agrimin undertook a series of bore water drilling programs to the south of Lake Mackay in 2017 and 2019 and defined a groundwater source with sufficient volumes and raw water quality for direct use in the processing plant. Groundwater will be abstracted from a borefield comprising 28 operating bores, including two standby bores with an installed capacity of 3.5 GL/a. The borefield will be located 45 km southeast of the processing plant as shown in **Figure 8-2**.

The bore pumps will pump to a collector tank located in the borefield via a common collection header pipeline and then pump overland to the Project site where it will be treated to ensure it is suitable for use. The borefield development is planned to be staged over a two-year period and will be completed in time for commissioning of the process plant.

8.4.6 Roads

8.4.6.1 Haul Roads

Agrimin propose the construction of a new 346 km haul road between Lake Mackay and the Tanami Road, which joins the Great Northern Highway and ultimately Wyndham Port for product export (**Figure 8-8**). In December 2019 Agrimin signed a Haulage Joint Venture Agreement with Newhaul Pty Ltd. to form Newhaul Bulk Pty Ltd. which will provide road haulage and road maintenance services for the Project. A program of work has been undertaken to support the haul road construction including a geotechnical sampling program, LiDAR topographical surveys, environmental surveys, heritage surveys, native title meetings and negotiations and haul road design.

The haul road will commence from the track at the Project area to a sealed road that will be capable of supporting triple and quad road trains hauling SOP product from Lake Mackay to Wyndham. The haul road route roughly follows the existing track, although there are selected sections where the new haul road will deviate in order to shorten the total distance and avoid low lying and drainage areas that are subject to flooding. The haul road is private with no access to users other than Agrimin and Traditional Owners, or as otherwise agreed.

It is proposed that the haul road will have a 6 m wide seal and 6.5 m wide pavement, using local materials for the road base and imported aggregate material for the two-coat spray seal. Each borrow source will provide enough material for between 2.5 km and 10 km of road construction and will be progressively developed as the construction work front moves north. Borrow pits behind the work front will be progressively made safe and rehabilitated.

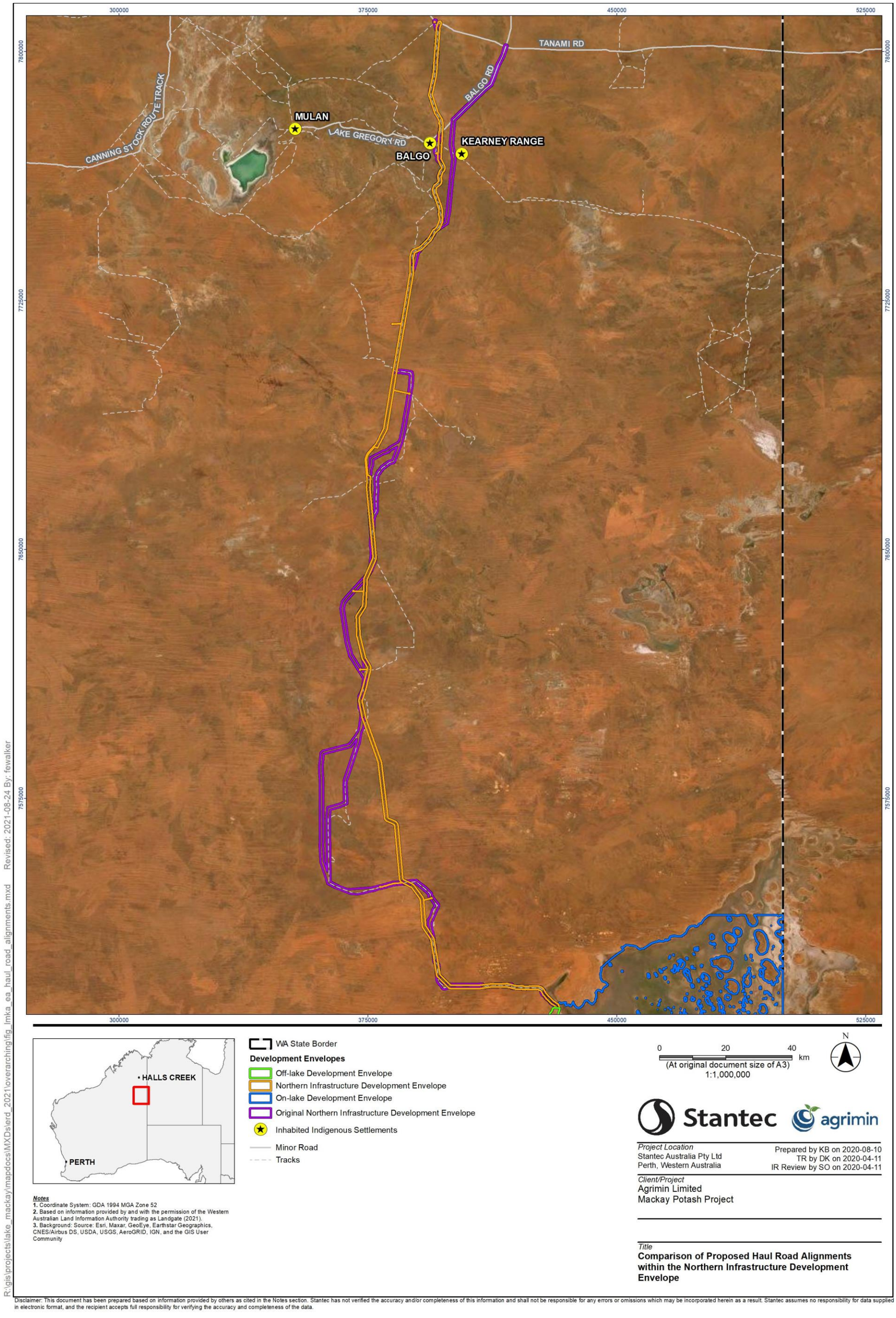

Figure 8-8: Proposed Agrimin haul road

8.4.6.2 Access Roads and Tracks

There are several existing access roads and tracks in the Project area and some that will be further upgraded depending on future plans for the Project. Any updates to the development and upgrading of roads and tracks will be outlined in the future iteration of the MCP. Current road access to the Project involves approximately 776 km of sealed and unsealed roads. Kiwirrkurra Road is an unsealed existing track from the Kiwirrkurra Community and will be used as an access road during construction, drive in/drive out operational personnel and as a permanent supply road. Some upgrading will be required in order to accommodate heavier transport and machinery. Claypan Bypass Road is a possible alternative route as it avoids sensitive heritage areas and some small freshwater lakes which may impede access during high rainfall events. This road may be subject to future upgrades. The section on-lake will be constructed as a raised causeway using material from the main feed canal excavations, with a borrow pit sourced base capping. The Link Track will link South Shore Road with Kiwirrkurra Road to facilitate equipment deliveries and will be a single lane track with local widenings. The Pond Perimeter Road and Causeway will be heavy vehicle access roads constructed as part of the pond development to access the pond pumps and harvesters.

A series of internal access tracks and roads are also proposed, including a camp road to connect the Haul Road with the camp and airstrip and as an installation and access corridor for sewerage treatment and water pipelines. The borefield access road will be a single lane and will connect to the Kiwirrkurra Road to allow access to the bores and water collection tanks, and as a pipeline access track. Four short access tracks are proposed, spurring off the Camp Road and the Haul Road. They will be single lane unsealed tracks for maintenance purposes for the planned solar farm, power station, communications towers and WWTP.

8.4.7 Exploration Disturbance

8.4.7.1 Exploration Disturbance

Agrimin has conducted exploration and feasibility works at the Project between 2015 to the current date. These have included multiple programs of drilling, bore installation, trenching, aquifer testing, evaporation trials, process studies and geotechnical assessments.

All off lake exploration drill pads in the SIDE have been rehabilitated except for the actual bores and associated casing. On-lake trenches have been left in place for continued monitoring and possible future pumping.

8.4.8 Closure Approach

Proposed closure measures for each closure domain are included in Table 8-3. Once the Project is constructed and commences operation and the operation progresses, the closure approach will be further refined, and this information will be included in future iterations of the MCP.

Table 8-3: Closure approach for the Project

Domain	Feature	Closure approach
Landforms	• Waste Salt Stockpiles	• The current closure strategy for the waste salt stockpiles is to leave in-situ, unrehabilitated in order for passive assimilation to occur into the surrounding lake and landscape over the long term. • Spreading out of excess salt stockpile material was not considered as a viable option at this stage due to causing significant ground disturbance. However, various closure strategies will be considered, and the closure strategy will continue to be refined and discussed with DMIRS and Traditional Owners.
	• Borrow Pits	• re-contour land to match surrounding ground levels and to manage surface water flow where appropriate; • rehabilitate final surfaces where appropriate with topsoil where available and appropriate to a maximum 200 mm depth; • deep rip the surface where required to address compaction; and • revegetate where appropriate and if required with a suitable mix of native species of local provenance compatible with the proposed post-mining land use/leave to revegetate naturally from surrounding undisturbed areas.
	• Topsoil Stockpiles	• Where possible, topsoil stockpiles will be used on any progressive rehabilitation areas during the life of the Project, to ensure optimum results for the rehabilitation, specifically for areas requiring active revegetation.
Industrial Infrastructure	• Processing Plant • Accommodation Village • Diesel Fuel Storage Areas • Power Supply • Communications Tower • Airstrip • Landfill • Waste Water Treatment Plant • Plant Area Facilities • General Administration Facilities •	• Industrial infrastructure will either be removed or retained in accordance with Agrimin's future closure and decommissioning strategy, stakeholder requirements and approvals. • Negotiations have already commenced with Traditional Owners with regard to transfer of infrastructure at closure. Where infrastructure is to be retained, the appropriate approvals and legal agreements/transfer agreements will be sought prior to closure. • Where any infrastructure requires removal, the following approach will take place: • Undertake a contaminated sites assessment and remediation measures if required; • removal of all structure and footings; • remove hydrocarbons and hazardous materials if present and dispose; • actively seek reuse and recycling opportunities for decommissioned infrastructure; • back-fill landfill with appropriate cover and topsoil material and rip and seed surface; • if relevant and where present, drain pipelines and remove hazardous materials; • dispose of inert materials that are not reinstated, reused or recycled in an inert landfill area; • where linear infrastructure is removed, reinstate drainage lines where appropriate;

Domain	Feature	Closure approach
		• re-contour land to match surrounding ground levels and to manage surface water flow where appropriate; • rehabilitate final surfaces where appropriate with topsoil where available to a maximum 200 mm depth; • deep rip the surface where required to address compaction; and • revegetate where appropriate with a suitable mix of native species of local provenance compatible with the proposed post-mining land use.
Mining Infrastructure	• Brine Extraction Trenches and Canals • Solar Evaporation Ponds • Brine Pumping Stations • Salt Harvesters	• At this stage of the project, strategic breaching of the southern feeder of trench bunding canal to maintain hydrology, as based on hydrological modelling results will occur, and trenches are to infill naturally, a process likely to occur within approximately 10 years (based on field observations of test trenches), aided by flooding, which will increase sedimentation into trenches. Further closure options for trenches, canals and ponds will be investigated through a closure options analysis which will be detailed in the following iteration of the MCP and may include leaving in situ or backfilling with bund material after a period of passive accumulation of salt. HDPE liners may be removed off-lake. • Infrastructure such as pumping stations and salt harvesters will be decommissioned as per the approved final mine closure plan.
Water Containment Infrastructure	• Water Storage Dams • Reverse Osmosis Plant • Bore Water Delivery Pipelines	• pipelines and RO plant to be removed for re-use, salvage or disposal at appropriate facilities; • disturbed areas will be rehabilitated as appropriate for the specific area; • any land-based disturbances remaining after removal of infrastructure will be backfilled to the natural surface level and re-countered, covered with topsoil if and where available and ripped and seeded with local provenance species.
Groundwater Infrastructure	• Borefields	• undertake an inventory of boreholes and identify bores for retention and establish agreement with new owner (Traditional Owners or landholder); • bore holes that are not being retained are to be filled and capped or otherwise rehabilitated (including cutting beneath ground level, removing collars and any concrete for appropriate disposal). • supporting infrastructure including pumps and pipelines to be dismantled and removed and either disposed of at a licensed landfill or reused/recycled.
Roads	• Haul Roads • Access Roads and Tracks	• A written agreement with Traditional Owners will be finalised for transfer of liability of all relevant roads and tracks (to include Haul Road and designated access roads and tracks). Should any access roads and tracks not be required for use by the Traditional Owners, these will be rehabilitated by undertaken the following steps: • removal of culverts and other road furnishing that are not required; • dozing and decompaction of road surfaces to re-establish natural drainage; • re-shaping of all above natural surface sections of the road; • if and where required, rock armour the sloped road edges; and • if required, ripping and selected topsoil and seeding the road surfaces.

Domain	Feature	Closure approach
Exploration Disturbance	• Exploration Disturbance	• Prior to closure and progressively where appropriate, Agrimin will undertake an inventory of any remaining exploration disturbance that has occurred across the Project and undertake the following closure approach: • where appropriate and required, any surface holes and disturbances to the land surface are to be capped, filled or otherwise made safe; • any waste materials, rubbish and equipment are to be removed from the Project area and disposed of or recycled appropriately; • an audit will be undertaken to ensure all clean-up works have been undertaken.

8.5 Progressive Rehabilitation

Opportunities for progressive rehabilitation are limited. The most significant disturbance in terms of land clearance is a combined total of 1,500 ha for the Off-LDE, the haul road in the NIDE and the borefield, water pipelines and access tracks in the SIDE. Areas proposed for the Project and development of the operations are likely to all be used until closure.

As the operations progress, opportunities for progressive rehabilitation (e.g. exploration, bores, other cleared areas such as borrow pits) will be identified and added to the Schedule of Works in the revised iteration of the MCP. Where available, topsoil will be used on the surface after recontouring earthworks have been undertaken, the surface will be ripped, and designated areas will be seeded with a local provenance native seed mix suitable for the desired post-mining land use.

8.6 Early Closure – Permanent Closure or Suspended Operations Under Care and maintenance

Agrimin understands that economic, environmental, safety or other external pressures may result in the unexpected closure or suspension of operations for a period of care and maintenance. In the event of unexpected closure or suspension of operations, the relevant Environmental Officer from DMIRS will be notified in accordance with the Mining Act. In addition, under the Mines Safety and Inspection Act 1994, the District Inspector of Mines will be notified in case of suspension of the operation.

If suspension of the operations is required, a Care and Maintenance Plan will be submitted to DMIRS within 3 months of notification. If unexpected closure of the Project is required, the following works will be conducted:

- the site will be secured and signposted;
- the MCP will be revised to address the state of the operations at the point of unexpected closure;
- the risk assessment will be updated where relevant; and
- closure of the project will be conducted as per the requirements of the revised MCP.

All of the closure requirements listed in the MCP are expected to remain applicable in the event of unexpected closure. In general, these requirements may include:

- disturbed surfaces not required for any other purpose will be rehabilitated and made stable in line with the desired post-mining land use;
- infrastructure not required to be transferred to a third party and not required for further use will be decommissioned and removed;
- monitoring, auditing, and reporting will take place to ensure completion criteria is achieved; and
- the Project will be returned to the post-mining land use.

8.7 Decommissioning

Decommissioning of the Project infrastructure will be undertaken at the end of the Project life. Initially, an inventory will need to be undertaken to identify which infrastructure will be retained and transferred to a third party (e.g. Traditional Owners, landholders) and what will be decommissioned. A risk assessment will be undertaken prior to Project closure in order to address further risks associated with the decommissioning process including safety and contamination. As the Project and implementation of closure works progresses, the MCP will be further updated with more detailed decommissioning strategies. Specific decommissioning activities are outlined in Section 8.

9. Closure Monitoring and Maintenance

Monitoring is essential to track the progress of rehabilitation and closure, to inform when contingencies and corrective actions are needed, and to ensure that the rehabilitation fulfils completion criteria, which defines the success of rehabilitation strategies for closure.

Information from monitoring should also feed back into management strategies and improve rehabilitation and environmental management. If particular strategies are not progressing rehabilitation towards the completion criteria, then new strategies can be developed to help achieve desired outcomes. For example, species that have not grown successfully may be substituted with other appropriate local provenance species or establishment techniques revised.

Monitoring results, remedial actions and maintenance activities for the Project will be reported to the DMIRS and relevant regulatory agencies as part of reporting requirements.

Table 9-1 indicates the closure monitoring program planned to be undertaken at the Project. The monitoring program will be further revised in future iterations of the MCP and once Project approvals are in place, as this will determine further monitoring requirements.

9.1 Monitoring Program

The proposed closure monitoring program for the Project is outlined in Table 9-1.

Table 9-1: Closure monitoring program for the Project

Aspect	Monitoring methodology	Description	Frequency and Timing
Landform stability	Visual inspection Geotechnical assessment	Visual assessment and geotechnical assessment undertaken by a qualified specialist to determine the stability of the Project area including the lake and off-lake areas.	At completion of closure and rehabilitation works at 5 years post closure and prior to site relinquishment.
Rehabilitation Areas	Rehabilitation monitoring of rehabilitated areas	Quantitative quadrat or transect based assessment of: • Species richness and composition • Cover • Density • Visual amenity • Erosion • Weed cover, density, and distribution This will be supplemented with photo monitoring and remote sensing where appropriate.	At completion of closure and rehabilitation works and every two years until completion criteria are achieved.
Existing Native Vegetation	Vegetation health and condition	Visual assessment and vegetation health and condition monitoring will be undertaken of lake-fringe, riparian and other designated areas of existing native vegetation to determine whether there are any risks post-closure from salinity, weeds, changes in water level or other impacts.	At completion of closure and rehabilitation works at 5 years and prior to relinquishment to assess that completion criteria have been achieved.
Fauna	Fauna habitat availability	Visual assessment and quantitative monitoring of vegetation as part of monitoring of rehabilitated areas to determine habitat availability for terrestrial fauna.	At completion of closure and rehabilitation works and every two years until completion

Aspect	Monitoring methodology	Description	Frequency and Timing
			criteria are achieved.
	Fauna abundance and diversity	Where required, monitoring will assess fauna abundance and diversity of aquatic, terrestrial vertebrate and invertebrate fauna and short-range endemics in accordance with an established Environmental Management Plan or similar to determine whether there are any risks post-closure.	At completion of closure and rehabilitation works at 5 years and prior to relinquishment to assess that completion criteria have been achieved.
Soils	Soil assessment	Visual assessment and quantitative assessment of soil quality at determined locations identified by risk assessment. Visual assessment to assess soil loss, erosion, waterlogging, potential contamination, presence/development of salt crust. Aerial imagery/remote sensing may be used to track development of salt crust on the lake.	At completion of closure works and prior to relinquishment. Visual assessment can take place along with monitoring of rehabilitated areas.
Water	Water quality monitoring	Surface water quality and groundwater quality monitoring of PH, EC and TSS at determined locations in accordance with an established Groundwater Monitoring Plan.	Until completion criteria are achieved.
	Water levels	Groundwater levels at bores in line with existing licences.	Until completion criteria are achieved.
	Surface water management	Visual assessment of surface water management and site drainage.	Once during closure works after a significant rainfall event and once more after closure works have been finalised.
Contaminated Sites	Contaminated Sites monitoring	Monitoring and management of any contaminated sites to be undertaken as per the requirements of the CS Act.	Until completion criteria are achieved.
Auditing against completion criteria	Completion Criteria audit.	A periodical review of the completion criteria will be undertaken to review the trajectory and performance of the Project against each individual criterion.	Until completion criteria are achieved.

9.2 Maintenance

In addition to monitoring, the Project will require a series of maintenance tasks to ensure that the site satisfies completion criteria and is able to be relinquished. Maintenance works are likely to include:

- monitoring and maintaining any existing signage and fencing that is required post-closure;
- maintaining access to areas required for rehabilitation monitoring until relinquishment is achieved;
- undertaking any remedial earthworks to control erosion;
- monitoring and maintaining any required water diversions;
- maintaining roads, tracks, power, and water supplies where able and required(until ownership transfer where applicable)
- controlling weeds in rehabilitation areas; and
- conducting remedial seeding of areas requiring revegetation.

9.3 Reporting

Performance monitoring results will be reported to the DMIRS in an Annual Environmental Report (AER) which will document progress against the agreed completion criteria. Where appropriate, any results of rehabilitation trials or similar research will also be presented in the AER along with remedial actions undertaken in response to not meeting agreed completion criteria.

10. Financial Provisioning for Closure

Agrimin has in place a closure provisioning processes in which the annual costs of rehabilitation activities, decommissioning activities and closure programmes are calculated out to final closure. A closure provision is created to address site final closure costs to ensure sufficient funds are available at the time of closure.

For the purpose of this MCP, a financial provisioning model and affiliated assumptions report have been developed. The initial model was augmented using data calculated from the domains and features list available at the time of developing the MCP. The model was built to incorporate site specific information and can be modified to test alternative closure implementation strategies.

The affiliated assumptions report contains a summary of mine closure costing methodology, assumptions and financial processes demonstrating that Agrimin has considered and fully understood the costs of meeting closure outcomes identified in the MCP and has made adequate provision in corporate accounting for these costs. The assumptions report is included in Appendix E.

Financial provisioning of the Project will take place periodically and will include, where required:

- identification of domains and features within the site that will have similar rehabilitation, closure, and decommissioning requirements;
- outcomes from discussions with site personnel to ensure accurate identification of site-specific data inputs;
- determinations of areas, depths, volumes, and quantities of materials to be moved, demolished, or established where relevant and equipment to be used; and
- a systematic estimation of rehabilitation costs based on the determined quantities and default unit costs and rates.

Agrimin utilises a schedule of rates for various required activities to estimate closure costs. The schedule of rates will be kept up to date on the basis of current undiscounted costs, legal requirements, and technology.

Closure costs are calculated to reflect, insofar as possible, the real cost of closure and include decommissioning costs (which occur at or near the end of the Project life) such as:

- demolition and removal of unwanted facilities and services on the site.
- remediation: the clean-up of contaminated areas of soil or water to an agreed quality.
- maintenance and monitoring: the management of the site through to relinquishment including closure and post-closure maintenance and monitoring.
- rehabilitation costs, which include the cost of rehabilitating disturbed areas that (for an operational or environmental reason), were not progressively rehabilitated during the life of the Project and,
- project management costs, which include the human resourcing, facilities and administration related support required to implement closure activities.

11. Management of Information and Data

This MCP is intended to be a live document that is subject to changes during operations of the Project and mine closure process. Closure planning is a complex process that commences at the initial planning stage and evolves during the life of the operation and with improved knowledge of the Project. Agrimin will implement a management strategy to review and update this MCP every three (3) years (or at such time as specified in writing by Agrimin) and submit any updated version of this MCP to the DMIRS for review.

This MCP will be reviewed periodically and updated accordingly for currency with legislation, regulations, standards, guidelines, and operational requirements.

Agrimin will maintain copies of all environmental approvals, licences and permits relevant to the Project. These records will be updated as necessary to include new operating approvals and updated licences. Agrimin maintains a Legal Obligations Register which summarises all environmental legal obligations relevant to closure (**Appendix A**). Agrimin's Environmental Management System (EMS) is based on ISO14001 and includes high quality processes for the retention of mine records and all information and data relevant to mine closure. It is anticipated that the EMS will be utilised as a framework for management of closure data, records, and information. In addition, Agrimin has a Framework Environmental Management Plan (FEMP) which has been developed to provide an environmental management framework for Agrimin to implement consistently across the full suite of factor specific Environmental Management Plans (EMPs).

Closure and rehabilitation related information that will be stored may include, but will not be limited to:

- records of stakeholder engagement;
- spatial records of disturbance and rehabilitation areas;
- aerial and ground-based photographs;
- records of any rehabilitation and decommissioning works undertaken;
- monitoring data and reports;
- technical reports and data relevant to closure and rehabilitation;
- closure cost estimates;
- environmental reviews and audits; and
- this MCP and each of its iterations (as applicable).

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Appendices

Appendix A Legal Obligations Register

Agrimin : Lake Mackay SOP Project	
Last Updated:	**Date**
29/9/2020	Document Register
	Tenement Conditions
	Company Procedures & Standards
	POWs
	Environmental Management Strategy

Look Up Tables

Commitment Type
General
Rehabilitation/Closure
Operational
Monitoring/Reporting

Documents Linked to Tenement Conditions:	Tenement/s
(PoW Reg ID 82330) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 6 September 2019 and retained on Department of Mines, Industry Regulation and Safety File No. EARS-POW-82330 as Doc ID 6826890	L80/87
(POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460	E80/4887, E80/4888, E80/4889, E80/4890, E80/4893

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DMIRS Tenement Conditions

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Tenement	Condition No	Conditions	Commitment Type	Start Date
E 80/4887	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923.	General	22/01/2015
	2	All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe immediately after completion.	Rehabilitation/Closure	25/06/2015
	3	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	25/06/2015
	4	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	25/06/2015
	5	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	25/06/2015
	6	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to:	General	25/06/2015
		Entry on Use & Benefit of Aborigines Reserve Use And Benefit Of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.		25/06/2015
	7	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled:	Operational	10/5/2017
		(POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460		
		Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.		
	8	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	9	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	10	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017
E 80/4888	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923.	General	28/04/2015
	2	All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe immediately after completion.	Rehabilitation/Closure	25/06/2015
	3	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	25/06/2015
	4	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	25/06/2015
	5	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	25/06/2015
	6	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to:	General	25/06/2015
		Entry on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.		
	7	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled:	Operational	10/5/2017
		(POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460		
		Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.		
	8	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	9	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	10	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017
E 80/4889	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923.	General	22/01/2015
	2	All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe immediately after completion.	Rehabilitation/Closure	25/06/2015
	3	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	25/06/2015
	4	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	25/06/2015
	5	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	25/06/2015
	6	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to:	General	25/06/2015
		Entry on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.		
	7	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled:	Operational	10/5/2017
		(POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460		
		Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.		
	8	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	9	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	10	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017

Key for Commitment Type
General
Rehabilitation/Closure
Operational
Monitoring/Reporting

Tenement	Condition No	Conditions	Commitment Type	Start Date
E 80/4890	2	All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe immediately after completion.	Rehabilitation/Closure	25/06/2015
	3	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	25/06/2015
	4	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	25/06/2015
	5	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	25/06/2015
	6	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to: Entry on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	25/06/2015
	7	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled: (POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460 Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.	Operational	10/5/2017
	8	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	9	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	10	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017
E 80/4893	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use And Benefit Of Aboriginal Inhabitats Reserve 24923.	General	22/01/2015
	2	All surface holes drilled for the purpose of exploration are to be capped, filled or otherwise made safe immediately after completion.	Rehabilitation/Closure	25/06/2015
	3	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	25/06/2015
	4	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	25/06/2015
	5	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	25/06/2015
	6	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to: Entry on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	25/06/2015
	7	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled: (POW Reg ID 66030) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 4 April 2017 and retained on Department of Mines and Petroleum File No. EARS-POW-66030 as Doc ID 4917460 Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.	Operational	10/5/2017
	8	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	9	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	10	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017
E 80/4995	1	The rights of ingress to and egress from Miscellaneous Licence 80/87 being at all times preserved to the licensee and no interference with the purpose or installations connected to the licence.	General	18/07/2017
	2	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	18/07/2017
	3	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	18/07/2017
	4	Unless the written approval of the Environmental Officer, DMP is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	18/07/2017
	5	Consent to conduct exploration activities on Use And Benefit Of Aboriginal Inhabitants Reserve 24923 granted subject to: Entry on Use & Benefit of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	18/07/2017
E 80/5055	2	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.	Rehabilitation/Closure	6/9/2017
	3	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	6/9/2017
	4	Unless the written approval of the Environmental Officer, DMIRS is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	6/9/2017
	5	Consent to explore on Use and Benefit of Aboriginal Inhabitants Reserve 24923 (Ngaanyatjarra Reserve) granted subject to the following condition: Entry on Use & Benefit of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	6/9/2017 6/9/2017
E 80/5124	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use and Benefit of Aboriginal Inhabitants Reserve 24923.	General	11/7/2018
E 80/5172	1	The prior written consent of the Minister responsible for the Mining Act 1978 being obtained before commencing any exploration activities on Use and Benefit of Aboriginal Inhabitants Reserve 24923.	General	11/2/2019
	2	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines, Industry Regulation and Safety. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, Department of Mines, Industry Regulation and Safety.	Rehabilitation/Closure	17/06/2019
	3	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the mining tenement prior to or at the termination of exploration program.	Rehabilitation/Closure	17/06/2019
	4	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Operational	17/06/2019
	5	Consent to explore on Use and Benefit of Aboriginal Inhabitants Reserve 24923 (Ngaanyatjarra Reserve), in respect to the area within the Kiwirrkurra People Determined Area (WCD2001/002) granted subject to the following condition: Entry on Use & Benefit of Aboriginal Inhabitants Reserve 24923 in respect to the area within the Kiwirrkurra Native Title Determination area (WCD2001/002) and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	17/06/2019

Tenement	Condition No	Conditions	Commitment Type	Start Date
L 80/87	1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Mines and Petroleum (DMP). Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMP.	Rehabilitation/Closure	10/2/2017
	2	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program	Rehabilitation/Closure	10/2/2017
	3	Consent to commence any activities in respect to the licence purposes on the Use and Benefit of Aboriginal Inhabitants Reserve 24923 is given subject to the following condition: Entry on Use & Benefit of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	10/2/2017
	4	The construction and operation of the project and measures to protect the environment to be carried out in accordance with the document titled: (PoW Reg ID 82330) "Lake Mackay Project: Environmental Management Implementation Strategies" provided 6 September 2019 and retained on Department of Mines, Industry Regulation and Safety File No. EARS-POW-82330 as Doc ID 6826890 Where a difference exists between the above document(s) and the following conditions, then the following conditions shall prevail.	Operational	23/09/2019
	5	The development and operation of the project being carried out in such a manner so as to create the minimum practicable disturbance to the existing vegetation and natural landform.	Operational	10/5/2017
	6	All topsoil and vegetation being removed ahead of all mining operations and being stockpiled appropriately for later respreading or immediately respread as rehabilitation progresses.	Rehabilitation/Closure	10/5/2017
	7	All activities being carried out in such a manner so as to not have a detrimental effect on the natural water flow through the lease and surrounding areas to the satisfaction of the Environmental Officer, DMP.	Operational	10/5/2017
	8	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.	Rehabilitation/Closure	23/09/2019
L 80/88	1	The rights of ingress to and egress from Miscellaneous Licence 80/87 being at all times preserved to the licensee and no interference with the purpose or installations connected to the licence.	General	6/9/2017
	2	Wherever any part of a road intersects an existing fence, the holder shall where necessary construct a gate or livestock grid having such dimensions and be constructed of such materials and be of such standard as agreed with the pastoralist or as determined by the Environmental Officer, DMIRS.	Rehabilitation/Closure	6/9/2017
	3	The road to be constructed using proper materials to suit the purpose for which it is being constructed, and further that it be constructed in a workman like manner and further that it be constructed to the satisfaction of the Environmental Officer, DMIRS.	Operational	6/9/2017
	4	The holder shall maintain the road from time to time as shall be required to ensure that it is safe for the purpose that it is constructed.	Operational	6/9/2017
	5	Consent to commence any activities in respect to the licence purposes on the Use and Benefit of Aboriginal Inhabitants Reserve 24923 is given subject to the following condition: Entry on Use & Benefit of Aboriginal Inhabitants Reserve 24923 and activities undertaken on the Licence by any non-Aboriginal lessee, licensee, employee, contractor or agent being authorised by an entry permit issued under the provisions of the Aboriginal Affairs Planning Authority Act 1972.	General	6/9/2017 6/9/2017
L 80/96	1	The Licensee submitting a plan of proposed operations and measures to safeguard the environment to the Executive Director, Resource and Environmental Compliance, Department of Mines, Industry Regulation and Safety for their assessment and written approval prior to commencing any developmental or productive mining or construction activity.	Operational	11/2/2019
	2	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.	Rehabilitation/Closure	11/2/2019
	3	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program.	Rehabilitation/Closure	11/2/2019

Agrimin : Lake Mackay SOP Project

Document Register

DMIRS Document Reference	DMIRS No.	Date	Document Reference	Reviewed	Contains Commitments	AER Tenement	MCP Tenement	Tenement/s	Document Source	Other Document Names	Status	Status Comment
	POW Reg ID 66030 as DOC ID 4917460	4/4/2017	Lake Mackay Project: Environmental Management Implementation Strategies	yes	yes	Not Specif	Yes	L80/87	Agrimin	N/A	Soft copy - Site server	N/A
	PoW Reg ID 82330 as Doc ID 6826890	6/9/2019	Lake Mackay Project: Environmental Management Implementation Strategies	yes	yes	Not Specif	Yes	E80/4887, E80/4888, E80/4889, E80/4890, E80/4893	Agrimin	N/A	Soft copy - Site server	N/A
		20/12/2018	Agrimin Environmental Policy	yes	Yes	No	Not Specified	All	Agrimin	N/A	Soft copy - Site server	N/A

Agrimin : Lake Mackay SOP Project

Company Procedures and Standards relevant to Closure

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Document / Version / Date	Section No.	Condition / Legally Binding Aspect	Commitment type
Agrimin Environmental Policy - 2018		Rehabilitated sites or areas disturbed as required by applicable closure requirements to a safe, stable and non-polluting, self-sustaining agreed end land-use.	**Rehabilitation/Closure**
		As a minimum, operate in compliance with all applicable legislation, regulations and Codes of Practice.	**General**
		Work with the community and stakeholders with the aim of achieving mutually acceptable outcomes from all areas of operation.	**General**

Agrimin : Lake Mackay SOP Project

Mining Act Approvals (MPs / NOIs)

Date	
Expiry:	

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Doc ID	Document / Version / Date / Expiry	Condition	Condition / Legally Binding Aspect	Commitment type	Tenement/s
REG ID 82330	Programme of Work Approval L80/87	8	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drillings rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stokpiled for replacement after backfilling and/or separately stockpiles for replacement after backfilling and/or completion of operations.	**Rehabilitation/Closure**	L80/87

Agrimin : Lake Mackay SOP Project
Environmental Management Strategy

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Document / Version / Date	Section No.	Condition / Legally Binding Aspect	Commitment type
Lake Mackay Project: Environmental Management Implementation Strategies	Excavation and soil management	Soil will be exposed in the trenches and piled up at surface near the trench, prior to backfilling and rehabilitation of the trenches at the completion of the field program.	**Rehabilitation/Closure**
		It is anticipated that trenches in the dry lake will be open for up to 12 months for pump testing, following which they will be backfilled and rehabilitated.	**Rehabilitation/Closure**
	Drill hole completion	The surface casing will be capped and left at the top of the hole at the cessation of drilling, to prevent small fauna becoming trapped in the hole until final subsurface capping (40cmbgl) is completed at the end of the project.	**Rehabilitation/Closure**
	Rehabilitation	Rehabilitation will take place immediately upon completion of the drill program unless written exemption is obtained from the DMP	**Rehabilitation/Closure**
		Hydrocarbon contaminated soil will be removed for bioremediation in a designated area or harmonized insitu with clean soil and sprayed with bioremediation solution.	**Operational**
		Drill collar materials will be collected and landscaped at the drill site (recovered as a slurry)	**Rehabilitation/Closure**
		All collar capped holes will have the collar cut 50 cm below ground level and a concrete plug installed, and soils backfilled and mounded to shed runoff. Erosion potential around hole to be assessed.	**Rehabilitation/Closure**
		All disturbed areas will be levelled with the surface left rough; Surface water flow and values should not be impeded.	**Rehabilitation/Closure**
		Windrows will be pulled back to the centreline of the track and back bladed or lightly tyned depending on compaction	**Rehabilitation/Closure**
		Any fallen vegetation will be pulled back across cleared areas.	**Rehabilitation/Closure**
		Attention will be paid to areas where surface run-off (i.e. wheel ruts after wet weather, earthen ramps onto Lake Surface, compacted areas) has the potential to result in soil erosion.	**Rehabilitation/Closure**
		Drill hole to be subsurface capped in accordance with DMP requirements and the Exploration Rehabilitation Report – plugging 400 mm below ground surface.	**Rehabilitation/Closure**
		Disturbed areas (including borrow pits) will be rehabilitated at the close of the Programme to facilitate fauna habitat rehabilitation.	**Rehabilitation/Closure**
		The trenches and production bores (which are permitted under the S26D & S5C licence with the DoW) and monitoring bores will be monitored and maintained on a regular basis to ensure they are kept in good condition. The bores will be removed at the cessation of the project/expiry of the mineral tenure.	**Rehabilitation/Closure**
		Track closure and rehabilitation will occur at the end of the drilling program unless exemptions are received.	**Rehabilitation/Closure**

Appendix B Stakeholder Consultation Register

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
23/7/14	On-Country introduction to Traditional Owners	**Kiwirrkurra People** (Matthew West)	Receptive to exploration and mining for potash minerals on Lake Mackay. The vast majority of the salt lake surface itself does not have cultural significance as people do not go out there. Agrimin needs to meet Walimpiri who is the key cultural leader and last nomad. It is likely that the community will support potash exploration, but Agrimin needs to come back for the next On-Country General Meeting in Kiwirrkurra. The Kiwirrkurra People have an entity called Aboriginal Corporation (RNTBC) ("**Tjamu Tjamu**") to manage their business. Issues encountered with the old tenement holder (Holocene Pty Ltd) did not relate the plans to explore for potash on Lake Mackay. Important for Agrimin to respect the community and keep them informed about future work.	Agrimin will plan to return to Kiwirrkurra in the near future to meet Walimpiri who is the key cultural leader and last nomad.	Arranged meeting with cultural leader.
4/9/14	On-Country introduction to cultural leader	**Kiwirrkurra People** (Matthew West & Walampiri)	Kiwirrkurra people are likely to be supportive of Agrimin exploring the potential of Lake Mackay for potash. There are fresh water lakes around the western and north-western areas on Lake Mackay that are important to the Kiwirrkurra people. There are no problems with Agrimin exploring and disturbing the salt lake surface itself. Agrimin needs to meet Cental Desert Native Title Services ("**CDNTS**") who are the advisors for Tjamu Tjamu.	Agimin will plan to meet CDNTS to discuss a formal Exploration Agreement to access Lake Mackay for potash exploration.	Advised CDNTS to discuss an Exploration Agreement with Agrimin.
9/10/14	Meeting at CDNTS office for introduction to CDNTS	**CDNTS** (Nick Brisbout & Irene Assumptor)	Agrimin should progress with an Exploration Agreement. Negotiations for a Mining Agreement can take place during feasibility work.	Agrimin will consider the Tjamu Tjamu standard heritage agreement.	Arranged follow up meeting with Agrimin.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			CDNTS will provide the Tjamu Tjamu standard heritage agreement.		
17/10/14	Meeting at CDNTS office to request to enter into an Exploration Agreement	**CDNTS** (Phil Ramsay, Mike Allbrook, Gavin Dunn & Giacomo Boranga)	Tjamu Tjamu General Meeting will deal with Agrimin's Exploration Agreement. Agrimin should aim to progress the Exploration Agreement immediately while starting the process of negotiating a Mining Agreement. A large turnout of people is expected and will be a good opportunity to introduce Agrimin to the broader community. It is important to build a relationship with the Kiwirrkurra People.	Agrimin will plan to attend the Tjamu Tjamu General Meeting. Agrimin will review and negotiate the terms of Exploration Agreement.	Progressed draft version of the Exploration Agreement.
13/11/14	Meeting at CDNTS office to discuss terms of the Exploration Agreement	**CDNTS** (Phil Ramsay, Mike Allbrook, Gavin Dunn & Giacomo Boranga)	Tjamu Tjamu and Agrimin's can work through required changes to the standard heritage agreement and reach an acceptable outcome.	Agrimin will reconsider and revert to CDNTS to reach terms that are agreeable.	Arranged for Exploration Agreement to be tabled at Tjamu Tjamu General Meeting.
26/11/14	On-Country Tjamu Tjamu General Meeting	**Kiwirrkurra People**	Agrimin is welcome to explore Lake Mackay for potash. Tjamu Tjamu agreed to sign an Exploration Agreement and grant Agrimin access to the Kiwirrkurra determination area. Kiwirrkurra people want to build a relationship with Agrimin and stay informed. Consultations between Agrimin management and Kiwirrkurra people took place over course of the meeting day.	Agrimin will return in early next year to provide the Kiwirrkurra People with an update. Signed Exploration Agreement.	Signed Exploration Agreement.
25/5/16	On-Country Tjamu Tjamu General Meeting	**Kiwirrkurra People**	Continuing support of Agrimin exploring the potential of Lake Mackay for potash.	Agrimin arranged heritage survey.	Key cultural leaders will ensure they are available for the heritage survey.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			Tjamu Tjamu representatives and cultural leaders will take part in the upcoming heritage survey. Further consultations between Agrimin management and Kiwirrkurra people took place over course of the meeting day.		
3/6/15 to 7/6/15	On-Country heritage survey to clear exploration program	**Anthropologists & Kiwirrkurra People** (parties are confidential)	Heritage survey was carried out successfully via helicopter. Clearance report to follow. Further consultations between Agrimin management and Kiwirrkurra People took place over the several days of the survey.	Agrimin will await Clearance Report.	All proposed exploration works and areas were Cleared.
14/7/15	Meeting at DMP office to provide project briefing	**DMP** (Phil Boglio & Adam Buck)	Minor points to the Environmental Management Plan ("**EMP**") were discussed with the Department of Mines and Petroleum ("**DMP**").	Agrimin addressed minor points raised in regard to the EMP and resubmitted.	DMP happy with the updated EMP. Program of Works ("**POW**") was approved
21/7/16	Meeting at CDNTS office to request to enter into a Negotiation Protocol	**CDNTS** (Phil Ramsay, Mike Allbrook & Gavin Dunn)	CDNTS will seek instructions from the directors of Tjamu Tjamu on the content of a Negotiation Protocol for the purpose of entering into a Mining Agreement for the Mackay Potash Project. The Negotiation Protocol is an important framework that guides the negotiations and ensures the process complies with all regulatory and cultural requirements.	Agrimin will await draft version of a Negotiation Protocol.	Instructions received from Tjamu Tjamu and CDNTS provided a draft Negotiation Protocol for Agrimin to consider.
20/9/16	Meeting at CDNTS office to discuss terms of the Negotiation Protocol	**CDNTS** (Phil Ramsay, Mike Allbrook & Gavin Dunn)	A number of Agrimin's suggests changes to the Negotiation Protocol will be considered. CDNTS will provide a final version to Agrimin for review.	Agrimin reviewed and agreed to amended version of the Negotiation Protocol. The parties reached in-principle agreement on the Negotiation Protocol.	CDNTS confirmed the Negotiation Protocol will be tabled at the Tjamu Tjamu General Meeting.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
28/9/16	On-Country Tjamu Tjamu General Meeting	**Kiwirrkurra People**	Continuing strong support of Agrimin exploring the potential of Lake Mackay for potash. Agreed to enter into a Negotiation Protocol for a Mining Agreement. Further consultations between Agrimin management and Kiwirrkurra people took place over course of the meeting day.	Signed Negotiation Protocol.	Signed Negotiation Protocol.
31/10/16 to 8/11/16	On-Country heritage survey for Cultural Heritage Management Plan	**Anthropologists, Kiwirrkurra People & surrounding communities** (parties are confidential)	The Negotiation Protocol involves and extensive process of heritage surveys as part of a Cultural Heritage Management Plan ("**CHMP**"). The CHMP is a key component of the Mining Agreement and is necessary to provide clearance of areas for future mining to take place. Visited communities at Kiwirrkurra, Balgo, Nyrippi and Kintore. Positive community views regarding Agrimin and a future potash mine being developed on Lake Mackay.	Agrimin will continue with further heritage survey and negotiations as outlined under the Negotiation Protocol.	Next round of negotiations can take place in 2017.
28/11/16	Meeting at DMP office to seek approvals advice	**DMP** (Phil Boglio, Don Flint, Lee Hassan, Trevor Beardsmore, Mike Freeman, Ryan Mincham, Neil Spencer & Graham Cobby)	Satisfied with approach and exploration activities undertaken to date. Stygofauna environmental assessments will be required and should be a priority given timeline issues with other projects in the State. Acknowledge the limitations associated with applying the Mining Act to brine mineral resources. The is an important project for the State and Agrimin should progress with meeting the Department of Statement Development ("**DSD**").	Agrimin will meet with DSD.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
14/12/16	On-Country Negotiation Meeting 1	**Kiwirrkurra People & CDNTS** (parties are confidential)	Negotiations proceeded well with strong co-operation on both sides. CDNTS to draft minutes of the meeting.	Agrimin reviewed and approved minutes of the meeting.	CDNTS circulated the agreed outcomes of the meeting.
15/12/16	Meeting at DSD office to seek approvals advice	**DSD** (Gary Simmons) **& DMP** (Tony Bullen)	Acknowledge the limitations associated with applying the Mining Act to brine mineral resources. Agrimin should progress with meeting the Minister for State Development.	Agrimin will meet with Hon Bill Marmion, Minister for State Development.	Minister for State Development's Office accepted a meeting.
19/12/16	Meeting at Minister for State Development's office to seek approvals advice	**Minister for State Development's Office** (Colin Edwardes, Cameron Fraser)	Acknowledge the limitations associated with applying the Mining Act to brine mineral resources, however Minister's office cannot assist Agrimin to overcome issues with mining tenure.	N/A	N/A
14/2/17	Meeting at DOW office to provide project briefing	**DOW** (Gary Humphreys, Josephine Searle, Lilly Magombedze, Natalie McAlpine)	Department of Water ("**DOW**") recommends to check for Groundwater Dependent Ecosystems ("**GDE**") south of Lake Mackay. In regards to riparian vegetation, Agrimin must note any draw-down impacts from activities on the lake. Agrimin must investigate whether there are GDEs associated with islands and whether the project's water abstraction will impact on the Kiwirrkurra community's bore water supply.	Agrimin will check for GDEs. Unlikely that project will impact the Kiwirrkurra community's bore but Agrimin will monitor for any draw-down effects. Unlikely that riparian vegetation will be impacted by activities on the lake but Agrimin will monitor this.	N/A
16/2/17	Meeting at DPAW office to provide project briefing	**DPAW** (Sandra Thomas, Murray Baker, Michelle Corbellini)	**Flora & Vegetation** The Department of Parks & Wildlife ("**DPAW**") understand full environmental impact of Project on and off footprint. Agrimin should focus on conservation significant species.	Future studies to incorporate advice from government agencies. Future bore hole drilling to incorporate calcretes on- and off-footprint.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			Salt lakes are ecological islands. Note fringing vegetation, restricted species, new species, range extensions. Correct ID of plants – confirmed by WA Herbarium – specimens to be properly vouchered. Target genera and species of conservation significance, eg *Tecticornia* spp and samphires. Transect surveys preferred over individual quadrats. Gypsum islands have potential to host unique species – need thorough, targeted investigation. Increase general survey area to capture more area outside of impact footprint. **Vertebrate Fauna** Migratory birds after significant rainfall need to be investigated and the potential for large bird numbers and associated aquatic invertebrates. Target conservation significant species, especially Greater Bilby, Great Desert Skink and Brush-tailed Mulgara. Map Bilby, Mulgara, Skink locations so that preferred living/foraging habitat is avoided as far as practicable. Target endemic fauna, particularly reptiles. Current fauna work needs to be more extensive, albeit Level 1 survey to date. **Subterranean Fauna** Need to understand calcrete locations which are related to subterranean fauna distributions. Need to assess subterranean fauna off-footprint as well as within disturbance envelope.	Agrimin will make use of existing bores as far as practicable for subterranean fauna assessments.	

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
20/2/17	Meeting at DMP office to seek approvals advice	**DMP** (Graham Cobby)	Acknowledge the limitations associated with applying the Mining Act to brine mineral resources. Agrimin should continue to progress options with DMP.	N/A	N/A
21/2/17	Meeting at OEPA office to provide project briefing	**OEPA** (Chris Stanley)	Ensure guidance document recommendations are incorporated into environmental assessments. Provide technical environmental reports to the Office of the EPA ("**OEPA**") Technical Team for review and feedback. Ensure early consultation on project with the Commonwealth Government.	Provided technical reports on flora, vegetation and vertebrate fauna for review. Initiated contact with Commonwealth's Department of Environment & Energy ("**DEE**") regarding project briefing.	Technical Team response received. DEE requested Project information for review. Future assessments to include reference to OEPA feedback.
14/3/17	On-Country Tjamu Tjamu General Meeting	**Kiwirrkurra People**	Continuing strong support of Agrimin exploring the potential of Lake Mackay for potash. Community was updated by members of the Agrimin and Tjamu Tjamu Negotiation Teams on the progress of the negotiations for a Mining Agreement. Further consultations between Agrimin management and Kiwirrkurra people took place over course of the meeting day.	N/A	N/A
15/3/17	On-Country Negotiation Meeting 2	**Kiwirrkurra People & CDNTS** (parties are confidential)	Negotiations proceeded well with strong co-operation on both sides. CDNTS to draft minutes of the meeting.	Agrimin reviewed and approved minutes of the meeting.	CDNTS circulated the agreed outcomes of the meeting.
21/3/17	Meeting at DMP office to provide project briefing	**DMP** (Brian Lloyd)	General project introduction was provided. Discussion of DMP site visit to Mackay SOP Project.	Agrimin will be in contact to arrange a site visit.	Will be in contact to arrange the visit when required.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
23/3/17	Meeting at Shire office in Newman to provide project briefing	**Shire of East Pilbara** (Allen Cooper, CEO & Rick Miller)	Shire is interested in promoting positive impact on local communities. Pleased that the project can offer local employment opportunities, road upgrades and business development opportunities.	Agrimin to work closely with Shire and local communities to identify opportunities.	N/A
7/4/17	Meeting at DMP office to provide project briefing	**DMP** (Demelza Dravnieks)	Impacts to surface water hydrology from trenching (bund wall influence on surface flows) should be assessed. Use of piping constructed through bunds to direct surface flow over trenches. Strategies should be considered to allow fauna egress from trenches if required. Groundwater drawdown, including depth and extent, and impacts to flora and subterranean fauna needs to be considered. Closure planning.	Trench configuration constructed to minimise interference with surface water flow Piping strategy successful elsewhere under similar conditions. Appropriate and practical egress measures to be considered for trenches. Further hydrological modelling required to quantify drawdown impacts. Closure planning to be addressed as part of project's development studies.	N/A
27/4/17 to 7/5/17	On-Country heritage survey CHMP	**Anthropologists, Kiwirrkurra People & surrounding communities** (parties are confidential)	Heritage survey was carried out successfully via helicopter.	Agrimin will continue with further heritage survey and negotiations as outlined under the Negotiation Protocol.	N/A
15/6/17	On-Country Negotiation Meetings 3 & 4	**Kiwirrkurra People & CDNTS** (parties are confidential)	Negotiations proceeded well with strong co-operation on both sides. CDNTS to draft minutes of the meeting.	Agrimin reviewed and approved minutes of the meeting.	CDNTS circulated the agreed outcomes of the meeting.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
				Agrimin has coordinated with the IPA Program Leader and met with IPA Rangers to ensure that they are involved with the next phase of environmental surveys.	
17/6/17 to 28/6/17	On-Country heritage survey for CHMP	**Anthropologists, Kiwirrkurra People & surrounding communities** (parties are confidential)	Heritage survey was carried out successfully via helicopter.	Agrimin will continue with further heritage survey and negotiations as outlined under the Negotiation Protocol.	N/A
19/6/17	Meeting at Kiwirrkurra general office to provide operations update	**Kiwirrkurra Community** (Steve Starky)	Discussion of road maintenance plans, grader hire and servicing, water usage and rubbish disposal.	Agrimin to hire and service grader. Continued community water usage and rubbish disposal is acceptable.	All agreed.
11/8/17	Kiwirrkurra IPA initiative	**IPA Ranger Program** (Kate Crossing)	Request for 'Letter of Support' from Agrimin regarding a Government funding application to seek to expand Kiwirrkurra IPA Ranger personnel resources in order to extend capacity for environmental management.	Agrimin supported intent of proposed funding submission and agreed to provide letter of support. Letter of Support from Agrimin to form part of funding application submission.	Kate Crossing acknowledged positive contribution by Agrimin towards support for the funding proposal.
23/8/17	Meeting at DMIRS office to provide project briefing & seeks approvals advice	**DMIRS** (Demelza Dravnieks & Phil Boglio)	The Department of Mines, Industry Regulation and Safety ("**DMIRS**") was given a project update and discussion was held regarding the current fieldworks. Discussion of proposed pilot evaporation ponds and the approvals process.	Agrimin to provide supporting documentation with POW application to detail the design and management of the evaporation ponds.	POW application submitted and approved.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
5/9/17	On-Country Negotiation Meeting 5	**Kiwirrkurra People, CDNTS & Economic Expert** (parties are confidential)	Negotiations proceeded well with strong co-operation on both sides. CDNTS to draft minutes of the meeting.	Agrimin reviewed and approved minutes of the meeting.	CDNTS circulated the agreed outcomes of the meeting.
4/9/17 to 13/9/17	On-Country heritage survey for CHMP for fieldworks	**Anthropologists, Kiwirrkurra People & surrounding communities** (parties are confidential)	Heritage survey was carried out successfully via helicopter.	Agrimin will continue with further heritage survey and negotiations as outlined under the Negotiation Protocol.	All proposed fieldwork areas were cleared.
13/9/17	Meeting at DOW office to provide project briefing & seek approvals advice	**DOW** (Hermes Medina)	Updated Section 5C and 26D Licencing to be provided for further trench and bore completion activities.	Licences applied for and advertisements taken out in the West Australian and North West Telegraph.	Licence application acknowledged. Licences approval expected soon.
15/9/17	Flora & fauna survey briefing	**Kiwirrkurra People & IPA Rangers** (parties are confidential)	IPA Ranger involvement in environmental baseline studies, particularly with respect to conservation significant flora and fauna.	Presentation to cultural leaders, IPA Rangers and IPA Program Leader/Coordinator Kate Crossing on country identifying opportunities for collaborative work and participation in forthcoming baseline flora and fauna surveys at Lake Mackay.	Cultural leaders & IPA Rangers enthusiastic about opportunity to work collaboratively with Agrimin and expert consultants.
12/9/17	Meeting at DMP office to seek approvals advice	**DMIRS** (Tony Bullen, Ivor Roberts, Neil Spencer & Mike Freeman)	Acknowledge the limitations associated with applying the Mining Act to brine mineral resources. Several options have been discussed internally by DMIRS. Limited progress has been made towards rectifying the issue.	Agrimin will meet with Hon Bill Johnston, Minister for Mines & Petroleum.	Minister for Mines & Petroleum accepted a meeting.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
11/10/17	Meeting with DBCA to seek advice on Night Parrot survey strategy	**DBCA** (Dr Allan Burbidge)	The Department of Biodiversity, Conservation & Attractions ("**DBCA**") advised the use of SM2 acoustic recording units important in determining presence/absence of Night Parrots, particularly roosting and foraging locations. Camera traps less effective. Agrimin should focus survey work on proposed disturbance areas, including groundwater abstraction (borefield) area. Special interest habitat for parrots includes old, complex, spinifex ring areas close to clay pans and samphire flats (also supported through conversations with Dr Stephen Murphy, expert in Night Parrot behavioural ecology).	SM2 acoustic units to be deployed as part of survey work across proposed disturbance areas, including proposed borefield area, and off footprint. Special interest habitat to be targeted, where present. Knowledge from other specialists such as Dr Stephen Murphy and the local IPA Rangers to be incorporated into survey methodology.	Interested in receiving Project updates relating to Night Parrot studies. Dr Allan Burbidge to receive updates on Night Parrot work at Lake Mackay.
24/10/17	Flora & fauna survey briefing	**IPA Rangers Program** (Kate Crossing)	Coordination of field survey activities to be held in November 2017 at Lake Mackay involving IPA Rangers and zoology/botany consultants.	Discussed logistical requirements and targeted survey activities including scheduling for the November 2017 field survey.	Improved understanding of involvement in the survey work and deliverables. Agreed on dates for the survey period involving IPA Rangers.
30 /10/17	Flora & fauna survey briefing	**IPA Rangers Program** (Kate Crossing)	Provide schedule for November 2017 environmental survey activities at Lake Mackay.	Provided detailed spreadsheet confirming schedule of environmental survey activities with specific focus on IPA Ranger involvement and tasks related to their field expertise – assist with locating conservation significant fauna and their preferred habitats (mainly Bilby, Great Desert Skink, Brush-tailed Mulgara and Marsupial Mole).	Very positive response with regard to the duration of involvement with the survey and the activities planned. IPA Rangers to engage as planned in field activities relating to conservation significant species.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
1/11/17	Meeting at Shire office in Halls Creek to provide project briefing	**Shire of Halls Creek** (Matthew Hobson)	Shire is very interested in the business and employment opportunities that could emerge if Agrimin transports is products via Halls Creek to the Wyndham Port. Shire is already doing significant work towards building the business case for upgrading/sealing regional roads.	Agrimin to work closely with the Shire to improve the business case for sealing the Tanami Road. Shire will investigate laydown and accommodation sites from Agrimin's future activities.	Agrimin provided project and transportation information as requested by the Shire.
2/11/17	Meeting at Shire office in Kununurra to provide project briefing	**Shire of Wyndham-East Kimberley** (David Menzel, Shire President & Carl Askew, CEO)	Shire is very interested in the business and employment opportunities that could emerge if Agrimin ships its products out of the Wyndham Port.	Agrimin to work closely with the Shire as future logistics options are investigated.	N/A
10/11/17	Environmental baseline surveys	**IPA Rangers Program** (Kate Crossing)	IPA Rangers keen to be involved in environmental surveys within their conservation area, particularly regarding conservation significant species, and engage in two-way learning process with scientists from mining consulting team.	Welcome involvement of IPA Rangers in survey work. Traditional ecological knowledge coupled with tracking skills used to great effect in locating habitat and species of conservation significance.	4 IPA Rangers committed to 4-day baseline studies field programme at Lake Mackay. Close collaboration between mining consultants and IPA Rangers on a range of survey opportunities with positive engagement and feedback from all involved.
23/11/17	Pre-referral meeting at OEPA office	**OEPA** (Chris Stanley & Peter Tapsell)	Comments raised with regard to potential radiation impacts, greenhouse gas emissions and matters relating to Aboriginal heritage. Radiation was raised as a potential Commonwealth Government issue given it had been raised regarding other similar assessments.	Will address radiation, greenhouse gas emissions and Aboriginal heritage in referral document. Will discuss potential radiation impacts with Commonwealth Government. Agrimin will provide the OEPA with a draft version of the documents for review and comment.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
28/11/17	Meeting with DWER to seek advice on acid sulphate soils assessment	**DWER** (Dr Steve Appleyard)	Preliminary laboratory analysis results suggest no significant issues in relation to acid generation from lake sediments. The Department of Water and Environmental Regulation ("**DWER**") indicated that disturbance of soils off lake in relation to infrastructure development may present issues related to elevated *in situ* uranium and thorium levels. Requires management plans and procedures in place prior to ground disturbance to prevent potential contamination issues arising.	A full report on the preliminary acid sulphate soils study results will form part of any baseline environmental submission to government for Project assessment. Will interrogate existing off-lake drill core database (from Toro Energy Ltd) for occurrence of uranium and thorium, and related concentration levels. Management strategies relating to disturbed off-lake (and on-lake) sediments/soils will be developed to mitigate any potential contamination issues.	Implementation of appropriate management plans, especially off-lake, will be necessary to address potential contamination risks associated with *in situ* uranium and thorium in soils.
4/12/17	Meeting at DOT office to provide project briefing	**DOT** (Donna West, Director of Coastal Facilities; and Kim Davis, Manager of Strategic Operations)	The Department of Transport ("**DOT**") noted that in the longer term (and subject to enabling legislation being enacted) Kimberley Port Authority ("**KPA**") may take over management oversight responsibilities for the Port of Wyndham.	Agrimin can work with Cambridge Gulf Ltd ("**CGL**") which is the port operator. CGL will have most dealings with the DOT and KPA.	Information about Agrimin's proposed transport has been provided to KPA (Kevin Schellack – CEO & Sean Mulhall –Commercial Manager)
12/12/17	Meeting at DPLH office to provide project briefing	**DPLH** (Sophie Underwood & Steve Beatty)	The Department of Planning, Lands & Heritage ("**DPLH**") acknowledge Agrimin's positive engagement with Traditional Owners. DPLH would like to be kept updated, particularly with respect to jobs, which is important. All of the matters that would be important to the DPLH have so far been assessed and managed by Agrimin.	Agrimin to work closely with the Traditional Owners and continue the good level of consultation.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
19/12/17	Meeting at Ministers Johnston's office to seek approvals advice	**Minister for Mines and Petroleum's Office** (Hon. Bill Johnston, Neil Roberts & David Alexander)	Acknowledge the limitations associated with applying the Mining Act to brine mineral resources. The DMIRS will continue to work on a solution.	Agrimin to work closely with DMIRS to assist in achieving a resolution.	Minister Johnston announced changes to the DMIRS rental rates for brine projects on 13/12/18. Minister Johnston stated that McGowan Government is committed to assisting the development of potash projects in WA.
21/12/17	Pre-referral meeting on teleconference	**DEE** (Matt Whitting & Mallory Owen)	The Commonwealth Department of the Environment and Energy ("**DEE**") requires an understanding of the Project's hydrogeological modelling - need to adequately understand groundwater drawdown in relation to depth and lateral extent, and connectivity between shallow and deep aquifers (existence and rate of connectivity). Hydrological modelling is also required regarding any increase in infiltration from the shallow aquifer, and corresponding reduction in surface water availability. This may include: • The impacts of drawdown relating to the proposed project life (period) and area of extraction (spatial) • The likelihood of depressurization of the overlying units occurring • The approximate period of time to maximum impact extent and rate of recovery of the groundwater level in each aquifer Determine uranium (U) and thorium (Th) concentrations in sediments/soils (assay results) in Project impact area as this has been an issue raised in relation to similar projects by Ministers. If U and Th concentrations are elevated then ultimate test will be whether or not the action meets the test set out in Division 2.1 of the EPBC Regulations, particularly Regulation 2.02). Investigate potential changed hydrology (water drawdown) impacts on the Dwarf Desert Spike-rush *Eleocharis papillosa* –	Preliminary groundwater and surface water modelling on-lake completed. Off-lake water modelling targeting potential impacts related to proposed borefield yet to commence. Uranium and thorium concentrations in soils and sediments impacted by Project related activities to be assessed. Re-visiting flora survey work to check for presence of *E. papillosa* and whether or not this species would have been visible, if present, during surveys. Also, look for other similar flora spp which may be impacted by changed hydrology (lowering of water table) and consider related impacts to dependent faiuna.	DEE's comments should currently be considered a guide at best *in lieu* of more detailed information becoming available.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			DEE search radius of 120km around Lake Mackay identified its occurrence to NE of the lake (Northern Territory). Also, any other plant spp which may be similarly impacted and potential impacts to fauna such as Bilby that may be dependent on these species. If Project assigned as 'Controlled Action' then assessment can occur via an 'Accredited Process'.		
23/1/18	Meeting at CLC office in Alice Springs to discuss transport, gas pipeline & tenure in Northern Territory	**CLC** (Julie-Ann Stoll – Mining Manager, Karina Tuveng – Mining Officer, Dean Murphy – Legal, Frances Claffey - Anthropologist)	The Central Land Council ("**CLC**") requires an understanding of Agrimin's Project, specifically its transport, gas pipeline and proposed exploration activities. The CLC will facilitate consultations regarding transport and the gas pipeline with Traditional Owners once a proposal is received from Agrimin, detailing what we are proposing. Following this, an on-country meeting will be required with the Traditional Owners to present Agrimin's proposal and negotiations for an agreement can commence thereafter (subject to Traditional Owner's agreement). The CLC will also facilitate consultations with Traditional Owners regarding Exploration Licences ELA30651, ELA31780 and ELA31781, once the Minister provides his consent.	Agrimin is required to submit proposals for the activities to the CLC before any further consultation can take place.	N/A
3/5/18	Feedback regarding draft referral supporting documentation	**OEPA (EPA Services Directorate, DWER)** (Chris Stanley)	Advised that the overall referral document appears comprehensive, however, need to address the following: • Description for each activity in Key Characteristics table needs trimming to what is environmentally relevant and presented more concisely; • Development envelope needs to be reduced in size so that it is, at most, double the amount of disturbance; • Check that most recent EPA guidance is followed – see reference to 2004 (updated in 2016); • Potential impacts to potentially 5 new *Tecticornia* species needs to be more fully addressed; • Waste salt stockpiles – height and location may be an issue.	Agrimin will address each of the comments and amend the referral document, as appropriate. Technical reports were not provided with the supporting document which may have facilitated an understanding of the issues commented on.	OEPA prepared to provide further clarification on any of the points raised.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			• Greenhouse gas emissions – include truck haulage of product; • Remove or clarify reference to 'EPA scoping guideline'; • Remove reference to ASX code, and • MNES – complex with regard to what may be assessed under the EPBC Act.		
9/5/18	Feedback regarding draft referral supporting documentation	**DEE** (Thomas Schindl)	• Department requires enough detail to consider whether or not the Proposal constitutes a nuclear action in accordance with Section 22 of the EPBC Act, Regulations 2.01 – 2.03 of the *EPBC Regulations* 2000 and the *Australian Radiation Protection and Nuclear Safety Regulations* 1999; • Need adequate description and quantification of the quality and extent of vegetation type and habitat to be affected. • Night Parrot surveys to be conducted in accordance with the WA DPaW (now DBCA) *Interim guideline for preliminary surveys of Night Parrot in WA.*	Agrimin will address each of the comments and amend the referral document, as appropriate. Technical reports were not provided with the supporting document which may have facilitated an understanding of the issues commented on.	There is plenty of opportunity as part of the referral process to clarify any issues or provide further information to the DEE, if requested.
14/5/18	Feedback regarding draft referral supporting documentation	**Tjamu Tjamu Aboriginal Corporation** (comments provided by Belinda Bastow of *Integrate Sustainability Pty Ltd*)	• Clarify extent to which stakeholder engagement has taken place, eg provision of Stakeholder Register; • Hydrology/Hydrogeology assessments of the Project area should be provided to address potential surface and groundwater impacts; • Chemical characteristics of the salt lake surface and waste salts need to be addressed in more detail;	Agrimin will address each of the comments and amend the referral document, as appropriate. Technical reports were not provided with the supporting document which may have facilitated an understanding of the issues commented on.	Feedback yet to be provided to Tjamu Tjamu.
22/5/18	Meeting at Shire office in Halls Creek to provide project Update	**Meeting with Shire of Halls Creek (**Matthew Hobson, (Economic	Shire very supportive of transport solution which includes the movement of SOP product through Halls Creek, the upgrade of local infrastructure including the sealing of the Tanami Road and construction of a haul truck depot located in Halls Creek.	Agrimin keen to support Shire in developing business case for Tanami Road upgrade.	Shire encourages cooperative approach with Agrimin in developing business case for presentation to government.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
		Development Manager)			
25/5/18	Meeting at Shire office in Kununurra to provide project update	**Meeting with Shire of Wyndham-East Kimberley** (David Menzel, Shire President; Tony Chafer, Shire Deputy President / CEO of Cambridge Gulf Ltd; Carl Askew, CEO; Jeff Gooding, Chief Executive, Kimberley Development Commission)	Shire very supportive of an infrastructure solution which includes product export via the Port of Wyndham and, particularly, the proposal to construct significant processing infrastructure components at the Port instead of at Lake Mackay. Suggested contact established with Jim Lewis – key local employer and skills trainer networked with Aboriginal community.	Agrimin keen to pursue options to construct elements of the SOP processing circuit at the Port adjacent to the proposed product loading facility.	Shire encourages ongoing dialogue with Agrimin and is supportive of the move to construct infrastructure components at the Port adjacent to the loading facility.
12/6/18	Meeting at KLC office in Broome to provide introduction & request to attend Tjurabalan General Meeting	**KLC** (Claire Saffery)	Kimberley Land Council ("**KLC**") is supportive of the suggested approach with seeking Tjurabalan permissions for the haul road idea and scoping. Suggested sending through an email to clarify the outcomes being sought from the Tjurabalan meeting.	Email sent 15/6/18.	Meeting arranged in Billiluna for 31/7/18.
13/6/18	On-Country meeting in Balgo for introduction & permission to conduct Haul Road investigation including surveys	**Ngurrupa People & CDNTS** (~40 Traditional Owner Representatives and CDNTS members – Phil Ramsay, David	In-principle support of the haul road and the approach to ground disturbing surveys to identify an appropriate route. Interested in opportunities regarding ownership of the road and ongoing maintenance and employment opportunities for the Traditional Owner's. Supportive of discussing Agrimin exploration licences when the company is ready.	Explained Agrimin and Traditional Owner's would both have usage of the road. Agrimin would hold a Miscellaneous Licence over the road and would maintain during operation. Road would be left in place for the benefit of Ngurrupa after mining finished.	Supportive of Agrimin's plans to survey track with letter of support received on the 26/6/18.

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
		Reger, Ebony Humble)	Also discussed Agrimin Potash & Agrimin Metals tenements covering Ngurrupa lands.		
24/6/18	Project update via ABC TV premier rural presenter 'Landline'	**General public and other interested parties**	N/A	N/A	N/A
27/7/18	Meeting at CLC office in Alice Springs to discuss Licence Application for access to Kintore groundwater	**CLC** (Dean Murphy)	Proposal to be put forwarded to the Traditional Owner's. A meeting regarding access and an agreement will likely follow.	N/A	N/A
31/7/18	On-Country meeting in Billiluna for introduction & permission to conduct Haul Road investigation including surveys	**Tjurabalan Directors & KLC** (Tjurabalan Directors and two representatives from the KLC incl Alex Romano)	In-principle support of the haul road and the approach to surveying an appropriate route. Asked about ownership of the road and ongoing maintenance. Asked about employment opportunities for the Traditional Owner's.	Explained Agrimin and Traditional Owner's would both have usage of the road. Agrimin would hold a Miscellaneous Licence over the road and would maintain during operation. Road would be left in place for the benefit of Tjurabalan after mining finished.	Generally supportive. KLC to follow up with a formal response to the proposed surveys after the meeting.
3/8/18	Meeting at Shire office in Kununurra to discuss factory at the Port	**Shire of Wyndham-East Kimberley** (David Menzel, Shire President; Tony Chafer, Shire Deputy President / CEO of Cambridge Gulf Ltd; Carl Askew, CEO)	Shire continues to be supportive of Agrimin, and is assisting with port access, labour force in Wyndham, and communicating with the State Government to lobby for sealing of the Tanami Road.	Agrimin and the Shire should continue to work together to progress the development of the Mackay SOP Project.	Shire encourages a co-operative approach with Agrimin to progress development of the project

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
16/10/18	Relationship Committee Meeting to oversee the implementation of the Native Title Agreement with Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Brian Gordon, Matthew West, Bobby West, Jimmy Brown, Warlimpirrnga Tjapaltjarri, Fred Ward, Gavin Dunn, David Reger)	General updates provided on both sides. Multiple subjects covered. Refer to meeting minutes for further details.	N/A	N/A
6/12/18	Meeting at Shire office in Halls Creek to discuss Tanami Road upgrade and Halls Creek workforce accommodation	**Sire of Halls Creek** (Matthew Hobson, Economic Development Manager; and Phil Burgess, Director of Infrastructure Assets)	Supportive of the Tanami Road upgrade and willing to help wherever possible. Halls Creek Shire and the Northern Territory Department of Transport are progressing an application for grant funds (from the 'Roads of Strategic Importance') to seal the Tanami Road.	Agrimin and the Shire to continue to keep in contact regarding the upgrade of the Tanami.	Shire is very supportive and available to assist wherever possible.
9/12/18	Meeting at EKCC&I office in Kununurra to provide introduction and project overview	**EKCC&I** (Jill Williams, President)	General discussion regarding the project and timelines.	Agrimin to keep East Kimberley Chamber of Commerce and Industry ("**EKCC&I**") up to date on its progress.	EKCC&I are supportive of the project and can provide assistance if required.
20/03/19	Relationship Committee Meeting to oversee the implementation of the Native Title Agreement with Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Robert Nanala, Matthew West, Bobby West, Jimmy Brown, Fred Ward, Gavin Dunn)	General updates provided on both sides. Multiple subjects covered. Refer to meeting minutes for further details.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
21/03/19	General Meeting of Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Community wide meeting)	Provided a general project update.	N/A	N/A
27/5/19	Meeting at OEPA office in Joondalup to discuss ESD and s.34A application	**OEPA** (Chris Stanley & Peter Tapsell)	Discussed the approvals strategy option of splitting the haul road into a separate approvals or staged approach for approvals. Discussed the level of survey required for the haul road for inclusion within an Environmental Review Document ("**ERD**") and timing implications (i.e. two phases vs one phase and implications relating to rainfall). Agrimin highlighted possible minor proposed changes to the project to be included within the Section 43A application and the Environmental Scoping Document ("**ESD**"). Changes relate to the inclusion of a solar farm and realignment of the haul road corridor.	Agrimin to submit Section 43A application and ESD.	N/A
28/5/19	Directors meeting in Halls Creek to provide update on project/surveys and discuss entering into negotiation protocol over the proposed haul road	**Tjurabalan Directors & KLC** (Tjurabalan Directors and two representatives from the KLC incl Alex Romano)	In-principle support of the haul road and entering into negotiation protocol. Asked about ownership of the road and ongoing maintenance. Asked about employment opportunities for the Traditional Owner's.	Explained Agrimin and Traditional Owner's would both have usage of the road. Agrimin would hold a Miscellaneous Licence over the road and would maintain during operation. Agrimin would strive to provide local employment opportunities.	Generally supportive. KLC to follow up with draft negotiation protocol, draft heritage protection agreement, and negotiation budget.
6/6/19	Meeting at Dumas House with Minister MacTiernan's policy advisors:	**Office of Minister for Regional Development, Agriculture and Food** (Craig Huxtable and	Provided an overview of the project, approvals and timelines.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
		Thomas Edwards, Policy Advisors)			
13/6/19	On-Country meeting in Balgo for project update & to enter into a memorandum of understanding for the heritage surveying and negotiation of the proposed Haul Road with Parna Ngururrpa AC	**Ngurrupa People & CDNTS** (~40 Traditional Owner Representatives and CDNTS members	In-principle support of the haul road and other aspects of the Mackay SOP Project (incl process water and on-lake area). Supportive of the proposed approach to surveying and entering into memorandum of understanding, with a view to eventually entering into a negotiation protocol. Interested in employment opportunities for the Traditional Owner's.	Explained that the haul road is the focus of negotiations. Further discussions to be held during the negotiation period to work out how the road would built and operated, and the implications this would have on the Parna Ngururrpa people.	MOU agreed on and signed post meeting. Supportive of Agrimin's plans and moving forward with surveys and negotiations. CDNTS to facilitate heritage surveys and provide draft negotiation protocol.
22/7/19	Meeting with Indigenous Business Australia (IBA) to discuss opportunities for Indigenous businesses	**Indigenous Business Australia** (Shiri Leventhal)	Provided an overview of the project and discussed areas where there may be opportunities for IBA to be involved.	Agrimin to consider the potential for IBA's involvement and refer any suitable partners to IBA	IBA would like to be involved supporting Agrimin's Indigenous partners where possible
18/9/19	Meeting at Shire office in Halls Creek to discuss truck driver training centre.	**Shire of Halls Creek** (Matthew Hobson, Economic Development Manager; and Noel Mason, CEO)	Provided an update of the project and introduced Craig Mitchell of Newhual. Discussed the concept of Agrimin and Newhaul establishing a joint venture to provide trucking services for the project. Craig explained the concept of setting up driver training centres in the Kimberley region in order to maximise the potential for local truck drivers. Shire suggested entering into a MOU with Agrimin to jointly develop training program to train up truck drivers.	Agrimin to draft MOU and send to Shire for review and signing.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
19/9/19	Meeting in Kununurra to discuss truck driver training centre	**Shire of Wyndham/East-Kimberley** (Tony Chafer, Deputy President)	Provided an update of the project and introduced Craig Mitchell of Newhual. Discussed the concept of Agrimin and Newhaul establishing a joint venture to provide trucking services for the project. Craig explained the concept of setting up driver training centres in the Kimberley region in order to maximise the potential for local truck drivers.	N/A	N/A
4/10/19	Relationship Committee Meeting to oversee the implementation of the Native Title Agreement with Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Matthew West, Bobby West, Brian Gordon, Gavin Dunn, David Reger)	General updates provided on both sides. Multiple subjects covered. Refer to meeting minutes for further details.	N/A	N/A
5/10/19	General Meeting of Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Community wide meeting)	Provided a general project update.	N/A	N/A
31/10/19	Meeting at DOT office to provide project update and barge loading plans	**DOT** (Donna West, Director of Coastal Facilities; Kim Davis, Manager of Strategic Operations; and Ron Zappara, Manager of Property Services)	Provided an update of the project and introduced Ian Junk of Transhipment Services Australia. Discussed the licences and leases that Agrimin will require in order to develop and operate its proposed barge loading facility. DOT does not foresee any specific issues with Agrimin's plans, however requires a formal proposal to assess. DOT explained that KPA is expected to take over responsibility for the Wyndham Port in January 2020 (or June 2020 at the latest) and therefore any proposal must also be reviewed by KPA.	Agrimin to provide a proposal including the engineering design and layout which is being prepared by Transhipment Services Australia. Proposal will be tabled at DOT's next meeting with KPA.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
27/11/19	Meeting at KPA office to provide project update and barge loading plans	**KPA** (Craig Faulkner, CEO; and Stewart Richardson, Commercial Manager)	Provided an update of the project and discussed the licences and leases that Agrimin will require in order to develop and operate its proposed barge loading facility. KPA advised that it is expected to take over responsibility for the Wyndham Port by June 2020 and therefore any proposal submitted to DOT will also be reviewed by KPA.	Agrimin to provide a proposals to DOT and advise KPA to ensure that are briefed.	N/A
23/1/20	Meeting at CDNTS office to discuss 2020 work plans and status of environmental assessment and haul road negotiations	**CDNTS** (David Reger, Gavin Dunn, & Elle Sewell)	CDNTS will wait to receive Agrimin's work programs. Agrimin has proposed various changes to the project and this will be reflected in the environmental assessment documents. CDNTS will wait to receive final versions and then seek external review.. CDNTS would like a follow-up meeting to discuss the Indigenous Engagement Strategy, prior to Agrimin tabling it at the next relationship committee in Kiwirrkurra.	Agrimin to provide requested documents and have follow-up meeting. Indigenous Engagement Strategy workshop planned.	N/A
4/2/20	Teleconference to discuss issues with current mining regulations and costs	**DMIRS** (Kate Buckley, Senior Policy Officer)	AMEC Minerals in Brine Workshop held with SOP companies, AMEC and DMIRS. Discussion of issues relating to the appropriateness of tenement rental rates, mining rehabilitation fund contributions and royalty rates for brine-hosted mineral deposits. DMIRS to review and propose suitable changes.	N/A	N/A
12/3/20	Meeting at Main Roads WA Office	**Main Roads WA** (Peter Woronzow, CEO)	Main Roads WA supportive of seeing the Tanami Road updated. Recommended Agrimin meet with Department of Transport.	Agrimin to meet Department of Transport next month.	N/A
18/2/20	Meeting at Clontarf Broome (St Mary's College)	**Clontarf** (Xavier Ennis, Kimberley Region Office)	Overview of the Clontarf program and introduction to the students.	Agrimin to keep Clontarf updated with progress on its driver training academy.	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	for an update on driver training				
18/2/20	Meeting at KDC in Broome to introduce Agrimin	**KDC** (Glen Chidlow & Simon Marwick)	Provided and introduction and overview of the project and associated jobs to Kimberley Development Commission ("**KDC**"). KDC to be kept up to date with progress. KDC to contact Agrimin for future rounds of funding regarding the Local Capability Fund, potentially in relation to Agrimin's driver training program.	N/A	N/A
18/2/20	Meeting at GoGo Station to introduce Agrimin	**GoGo Station** (Phillip Hams, Station Manager)	GoGo Station support the sealing of the Tanami Road.	Agrimin to provide updates and coordinate efforts to seek Government Funding for sealing of the Tanami Road.	N/A
19/2/20	Meeting at Clontarf Halls Creek (Halls Creek District High School) for an update on driver training	**Clontarf (**Tom Hine, Director)	Overview of the Clontarf program and introduction to the students.	Agrimin to keep Clontarf updated with progress on its driver training academy.	N/A
19/2/20	Meeting at Halls Creek Shire for an update on driver training	**Halls Creek Shire** (Noel Mason, CEO)	Shire continues to support Tanami Road upgrades and plans.	N/A	N/A
20/2/20	Meeting at Parliament House to introduce Agrimin	**Josie Farrer MLA, Labour MP for Kimberley**	Supportive of Agrimin's plans and satisfied with approach and engagement with stakeholders to date.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
20/2/20	Meeting at Wyndham Port	**Paul Cavanagh**	Meeting to discuss port operations and haulage operations in Wyndham.	N/A	N/A
20/2/20	Meeting on Driver Training with Troy's Truckwise Kununurra	**Troy's Truckwise** (Troy Lewis)	Meeting to discuss Troy's capacity to assist with Newhaul's planned driver training program.	Requested to be kept up to date with Agrimin's timing and progress.	N/A
20/2/20	Meeting at Wunan office in Kununurra to introduce Agrimin and Newhaul	**Wunan** (Ian Truss, Chairperson)	Wunan is interested to explore ways to work with Agrimin and Newhaul to promote Indigenous jobs and training.	Agrimin to update Wunan with potential jobs available.	N/A
25/2/20	Meeting at EPAS Office to provide project update and advise of changes	**EPAS** (Peter Tapsell)	Peter Tapsell (PT) advised that TEB branch have reviewed the flora and fauna memos provided. Peter relayed the messaged that the TEB had reviewed these and said that they looked ok and based on what was proposed in those memo's there was no requirement for TEB branch to meet with Agrimin/Stantec. PT – the Section 43a looks good in terms of the proposed changes and significance to tick the box and he sees no issues in proceeding with the current approval's pathway (i.e. section 43a and ESD submitted concurrently and ERD will reflect the proposed changes).	Agrimin to proceed with lodging S43a change notice	N/A
12/3/20	Meeting at DOT office in Kununurra to introduce Agrimin	**DOT** (Richard Sellers, Director General)	Department of Transport ("**DOT**") are and supportive of the Tanami Road being sealed.	Agrimin to keep DOT updated with progress.	N/A
14/5/20	Teleconference to discuss issues with current mining	**DMIRS** (Kate Buckley, Senior Policy Officer)	AMEC Minerals in Brine Workshop held with SOP companies, AMEC and DMIRS.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	regulations and costs		Discussion of issues relating to the appropriateness of tenement rental rates, mining rehabilitation fund contributions and royalty rates for brine-hosted mineral deposits. DMIRS to review and propose suitable changes.		
19/5/20	Teleconference to provide project update and discuss status of environmental approvals	**MPFA and DAWE** (Phil Poon, Camm Gibson, Sandra Ryan, Emily Evans, Cassandra Elliot)	MPFA to assist and coordinate the approvals process were possible.	N/A	N/A
28/5/20	Teleconference to discuss issues with current mining lease costs	**DMIRS** (Kate Buckley, Senior Policy Officer)	AMEC Minerals in Brine Workshop held with SOP companies, AMEC and DMIRS. Discussion of issues relating to the appropriateness of tenement rental rates for brine-hosted mineral deposits. DMIRS to review and propose suitable changes.	N/A	N/A
10/7/20	Meeting at CDNTS office to discuss 2020 work plans and post-COVID conditions	**CDNTS** (Malcolm O'Dell, Gavin Dunn, David Reger)	CDNTS has received Agrimin's work programs. Agrimin has proposed various changes to the project and additional heritage surveys and environmental surveys are likely to be required. Agrimin should consult the community regarding the access of heavy vehicles by-passing the Kiwirrkurra community during the project's construction phase.	Agrimin to provide requested documents and have follow-up meeting to plan surveys. Agrimin to attend next Kiwirrkurra general meeting.	N/A
3/8/20	Teleconference to provide a brief on the Pilbara Environmental Offset Fund	**AMEC and DWER** (open briefing)	General discussion on how the fund operates and how it affects minerals projects.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
20/8/20	Meeting at EPAS Office to provide project presentation to EPA Board members	**EPA Board**	Agrimin's presentation was well received. No specific comments or issues were raised.	N/A	N/A
2/9/20	Meeting at CDNTS office for Indigenous Engagement Strategy workshop	**CDNTS** (Gavin Dunn, Elle Sewell)	Concerns that the Agrimin's draft Indigenous Engagement Strategy ("**IES**") was not sufficiently specific in relation to job opportunities for Kiwirrkurra people. Requested that Agrimin complete a Skills Assessment for Kiwirrkurra people in 2021 to assist with preparing a more specific IES document.	Agrimin to prepared a memo outlining the proposed activities and timeline to finalise the IES. Agrimin also to attend next Kiwirrkurra general meeting and present the opportunity to participate in the Skills Assessment.	CDNTS received and supported Agrimin's proposed activities and timeline to finalise the IES.
30/9/20	Meeting at EPAS office to provide project update and major findings	**EPAS and DWER** (Liesl Rohl, Vanessa Robinson, Helena Mills and Claire Stevenson)	Agrimin presented key findings of field surveys to DWER-EPAS and TEB branch including Night Parrot and Great Desert Skink. Discussions around findings and next steps for further survey and impact assessment work for inclusion within the ERD was discussed. It was recommended to another discussion including DBCA around significant fauna species be undertaken. EPAS/TEB branch recommended to focus the attention of the ERD around: changes to surface water hydrology, sediments drying, impacts to Tecticornia (sediment loading / distribution / germination / change to large scale flooding events / indirect impacts on islands) and maintaining hydrological flows to maintain priority Tecticornia species and supporting vegetation communities.	N/A	N/A
6/10/20	Meeting at KDC office to provide a project update	**KDC** (Glen Chidlow, Director Strategic Development)	Supportive Agrimin's activities.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
6/10/20	Meeting in Broome to introduce Agrimin	**Davina D'Anna, Labor candidate for Kimberley**	Supportive of Agrimin's plans and the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
7/10/20	Meeting at Agrimin office to discuss Wyndham Port Facility plans and permitting	**KPA** (Craig Faulkner, CEO)	KPA to takeover the administration of Wyndham Port from DOT in July 2021. Permitting requirements and pathway was discussed with steps agreed.	Agrimin to submit scope document detailing the proposed port facility to support application for Seabed Lease/s.	N/A
7/10/20	General Meeting of Parna Ngururrpa AC	**Ngururrpa People & CDNTS** (Community wide meeting)	Discuss haul road. Advised of environmental findings from recent surveys. Agreed to sign negotiation protocol. Agreed to send native title monitors to assist in surveying off-footprint areas to identify a better haul road alignment.	N/A	N/A
7/10/20	Meeting at Shire office in Halls Creek to discuss truck driver training centre.	**Shire of Halls Creek** (Noel Mason, CEO)	Provided an update of the project and Newhual activities and plans. Discussed the progress of setting up driver training centres in the Kimberley region in order to maximise the potential for local truck drivers. Discussed the Shire's activities on the construction of the Tanami Road.	N/A	N/A
8/10/20	Meeting at Wunan office in Kununurra to provide an update	**Wunan** (Ian Truss)	Meeting to provide an introduction to of Agrimin to Wunan and discuss how Wunan and Agrimin may be able to work together	Requested to be kept up to date with potential jobs available with Agrimin	
8/10/20	Meeting at DBCA office to provide	**DBCA (Environmental**	Meeting with Environmental Management Branch (DBCA) to provide a project update, including recent survey findings from	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	project update and major findings	**Management Branch)**	night parrot and greater desert skink investigative works, including preliminary management approaches.		
15/10/20	Teleconference to provide project update	**Federal Minister for Resources Office** (Nicholas Claydon, Chief of Staff)	Australia Government is very supportive in promoting positive impact on communities in northern Australia. Pleased that the project can create significant exports of critical raw materials.	N/A	N/A
16/10/20	Meeting at members to provide project update to introduce Agrimin	**David Honey MLA, Liberal Member for Cottesloe**	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
20/10/20	General Meeting of Tjamu Tjamu AC	**Kiwirrkurra People & CDNTS** (Community wide meeting)	Continued strong support for the project.	Agrimin to undertake the planned Skills Assessment in 2021.	N/A
21/10/20	Meeting in Balgo to provide project update	**Wirrimanu (Balgo) Aboriginal Corporation Meeting**	Pleased that the project can offer local employment opportunities. Local workers already identified that may be suitable to work in the haul road construction and haulage operation.	N/A	N/A
22/10/20	Teleconference to provide project update	**Hon Nola Marino MP, Liberal Member for Forrest**	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
27/10/20	Meeting at Ministers office to provide update on driver training programs	**Minister for Education & Training Office** (Liz Carey, Chief of Staff)	Discussed the progress of Agrimin and Newhaul setting up driver training centres in the Kimberley region in order to maximise the potential for local truck drivers.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
27/10/20	Meeting at Ministers office to provide update on the project	**Minister for Transport's Office** (Hon. Rita Saffioti MLA & David Alexander)	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
28/10/20	Email to provide update of survey findings	**Night Parrot Recovery Team** (11 members)	N/A	N/A	N/A
28/10/20	Meeting at the members office to provide project update	**Dean Nalder MLA, Shadow Treasurer**	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
4/11/20	Meeting at Parliament House to provide project update	**Ken Baston MLC, Liberal Member for Mining and Pastoral Region**	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
5/11/20	Teleconference to provide update on Environment Review Document timeline	**Commonwealth DAWE (Assessments West Branch)**	Provided DAWE assessment officers a project update, including recent survey findings from night parrot and greater desert skink investigative works, including preliminary management approaches.	N/A	N/A
9/11/20	Meeting at Ministers office to provide project update	**Senator Hon Linda Reynolds Officer** (Keetha Wilkinson, Electorate Officer)	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A
10/11/20	Meeting at Ministers office to	**Minister for Regional Development;**	Supportive of the Tanami Road being sealed. Pleased that the project can offer local employment opportunities and road upgrades.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	provide project update	**Agriculture and Food; Ports Office** (Cole Thurley, Chief of Staff)			
19/11/20	Meeting at Ministers office to provide project update	**Minister for Aboriginal Affairs** (Howard Pederson, Policy Advisor)	Interested in the long-term opportunities the project will generate for the Kiwirrkurra native title holders, Central Desert communities and the broader Kimberley region. In particular, supportive of the Company's plans to establish a driver training and job readiness program to inspire pathways for young Indigenous people in the region who are interested in pursuing a long-term career in logistics.	N/A	N/A
3/12/20	Negotiation Meeting with Parna Ngururrpa AC	**Ngururrpa People (nominated committee) & CDNTS**	The Ngururrpa People remain supportive of the proposed Haul Road with negotiations to continue with a view to formalising an agreement for the construction and operation of the road.	N/A	N/A
15/12/20	Meeting at Mineral House to discuss proposed Mining Lease application	**DMIRS** (Tony Bullen, Phil Nicolaou and co)	Discussion of requirements concerning the application for a Minerals in Brine Mining Lease for the Project. Suggested discussing detailed marking out and survey requirements with Craig Wainwright.	N/A	N/A
22/12/20	Meeting at Mineral House to discuss proposed Mining Lease application and surveying requirements	**DMIRS** (Craig Wainright and co)	Discussion of the marking out and survey requirements for a Mining Lease application.	N/A	N/A
13/04/21	Meeting at Mineral House to discuss proposed	**DMIRS** (Phil Gorey & Fiona Knobel)	Discussion of requirements concerning the application for a Minerals in Brine Mining Lease for the Project, and options to be investigated to overcome the issues.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	Mining Lease application				
13/04/21	Meeting to discuss the subject of amendments to the MRF for Minerals in Brine Projects	**AMEC Minerals in Brine Working Group** and **DMIRS** (Tyler Sujdovic)	Discussion and finalisation of proposed amendments to the MRF regulations to ensure they are suitable for Minerals in Brine Projects.	N/A	N/A
30/04/21	Meeting with the Northern Territory Dept of Environment, Parks and Water Security	**DEPWS** (Paul Purdon, Lisa Bradley, Kylie Fitzpatrick, Maria Wauchope)	Agrimin/Stantec introduced the project and discussed the key issues that could relate to the NT side of the lake. Key issues being drawdown, which are considered negligible (similar to seasonal range). Key discussion points include: • Key Mitigation Strategies • Hydrogeological Model Outcomes • Impact Predictions	N/A	N/A
11/05/21	Meeting at Ministers office to provide project update and discuss Mining Lease application issue	**Minister for Mines and Petroleum** (Hon. Bill Johnson MLA and staff)	Minister remains supportive of the Project. Looking at options for dealing with cost issue concerning the application for a Mining Lease for Minerals in Brine. Interested in the Company's plans to assess hydrogen power solutions.	N/A	N/A
18/05/21	Meeting with the WA TEB	**DWER** Clare Stevenson, Kym Abrams, Gareth Watkins	Presented recent proposed proponent-led avoidance measures for the Great Desert Skink (GDS) – realignment of the road around the key population Presented night parrot survey results (discussed appending np memo). Although still travelling through np habitat, measures	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			implemented to avoid impact include only travelling in daytime, speed limit, signage, sealing road to reduce dust. (No fencing).		
21/05/21	Meeting at Ministers office to provide project update	**Minister for Aboriginal Affairs** (Howard Pederson & Shaye Hayden, Policy Advisors)	Supportive of the Project and interested in the opportunities Agrimin can generate for the Kiwirrkurra native title holders, Central Desert communities and the broader Kimberley region.	N/A	N/A
1/06/21	Meeting with DSS to discuss Night Parrot Findings	**Desert Support Services** (Kate Crossing and Angie Reid - representatives for the Ngururrpa and Kiwirrkurra IPA ranger groups)	Discussion of night parrot findings and information sharing session from both combined and individual survey efforts. The rangers groups continue to express interest in working together on environmental surveys.	N/A	N/A
9/06/21	Meeting with KPA to discuss proposed Wyndham Port Facility and Seabed Lease Applications	**Kimberley Ports Authority** (Reece Waldock and Craig Faulkner)	Supportive of the Project utilising Wyndham Port. Agreed to continuing to progress the Seabed Lease applications for the jetty and mooring requirements.	N/A	N/A
9-10/06/21	NT EPA Board Meeting (Formal Agenda Item at Board Meeting)	**NT EPA Board** (Paul Vogel)	Agrimin provided a detailed briefing note to inform the Northern Territory (NT) Environmental Protection Authority (EPA) of the Proposal by Agrimin Limited (Agrimin) to construct and operate the Lake Mackay Potash Project (the Proposal). Agrimin detailed their consideration for WA EPA's mitigation hierarchy at each stage of the assessment process across all	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
			environmental factors, providing for the implementation of a number of proponent-led avoidance measures. These were well received by the NT EPA Board.		
11/06/21	Meeting at JTSI office to discuss Mining Lease application cost issue	**JTSI** (Chris Clark, Deputy Director General, Resources and Project Facilitation & David Raftery, Project Manager, Strategic Projects)	Supportive of the Project and can look at options to assist with dealing with cost issue concerning the application for a Mining Lease for Minerals in Brine. Interested in the Company's plans to assess hydrogen power solutions.	N/A	N/A
14/06/21	Meeting with Shadow Minister Love to provide project update	**Shadow Minister for Mines and Petroleum** (Shane Love MLA and staff)	Generally supportive of the Project.	N/A	N/A
15/06/21	Meeting with AMEC to discuss the subject of an SOP Royalty	**AMEC** (Warren Pearce)	Discussion of what a fair and equitable royalty rate may be, and an update provided on the ongoing consultation between government and industry.	N/A	N/A
25/06/21	Meeting at Ministers office to provide project update	**Minister for Environment and Climate Action** (Cameron Barnes, Senior Policy Advisor)	Discussion of the Project and its environmental impacts. Overview of the Project's status in the EPA approval process. Supportive of the Project.	N/A	N/A
19/07/21	Relationship Committee Meeting with Tjamu Tjamu AC	**Kiwirrkurra People** (nominated committee) **& CDNTS**	The Kiwirrkurra People remain supportive of the project. Both parties agreed to conduct a skills audit to identify potential people who can work on the project at the next Tjamu Tjamu AC General Meeting.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
23/07/21	Meeting with working group to discuss a proposed SOP Royalty	**AMEC Minerals in Brine Working Group**	Update provided on the ongoing consultation between government and industry on a proposed SOP Royalty.	N/A	N/A
4/08/21	Meeting at Ministers office to provide project update.	**Minister for Road Safety** (Hon. Paul Papalia MLA and staff)	Discussion regarding Agrimin's plans for its private haul road to connect the Project to the Tanami Road. Minister is supportive of the Project and will investigate the State's Tanami Road upgrade plans.	N/A	N/A
13/08/21	Meeting with CDNTS to discuss the next steps forward for the haul road agreement negotiations	**Central Desert Native Title Services** (representatives of Parna Ngururrpa AC)	Both parties agreed on the next steps forward for the ongoing negotiations for the proposed haul road agreement.	N/A	N/A
19/08/21	Meeting with working group to discuss the subject of an SOP Royalty	**AMEC Minerals in Brine Working Group**	Discussion of what a fair and equitable royalty rate may be based on the recommendations from the report produced by Australian Venture Consultants, and how to progress with government consultations.	N/A	N/A
19/08/21	Meeting with Minister Johnston and Ministerial Office Staff to discuss the subject of an SOP Royalty	**Minister for Mines and Petroleum** (Hon. Bill Johnston MLA and staff) and **AMEC Minerals in Brine Working Group**	Government working on a proposed royalty rate for SOP.	N/A	N/A
19/08/21	Meeting with Deputy Director	**DMIRS** (Phil Gorey and co) and **AMEC**	Government working on a proposed royalty rate for SOP.	N/A	N/A

Date	Description of engagement	Stakeholders	Stakeholder comments/issue	Proponent response and/or resolution	Stakeholder response
	General, Phil Gorey and Departmental Office to discuss the subject of an SOP Royalty	**Minerals in Brine Working Group**			

Appendix C 2021 Risk Assessment

FORMAL RISK ASSESSMENT - SCOPING DOCUMENT

Site	Mackay Potash Project	
Title	Mackay Potash Project Environmental Risk Assessment (ERA)	
Sponsor	Mark Savich / Michael Hartley	
Objective	Complete a Environmental Risk Assessment to comply with Regulatory Requirements	
Background	ERA is required for the EPA Environment Review Document (ERD), Environmental Management Plans (including offsets), Mining Proposal, Mine Closure Plan, Works Approval	
Scope	Agrimin have completed a whole of project risk assessment for the Project during the DFS stage that will be incorporated into this environmental risk assessment. This environmental risk assessment is for all Project Areas and activities related Environmental risks. Template aligns with DMIRS 2020 MP guideline and DWER risk assessment guidelines requirements whereby residual consequence is only reduced if the risk is eliminated. Activities resulting high risk have been split out into separate lines for different operational categories to reflect the different risks and management measure from different stages of mine life (i.e. operations vs closure). Recommended actions for inherent risk with a risk level of moderate or high will be to include those risks within the outcomes, performance criteria and monitoring tables within approval documents / management plans. Residual risk will be use to assist in the development of the ERD, management plans and offsets. Any aspects with a moderate to high residual risk ranking need to be considered for potential offsets. Stantec have reviewed risk assessment from similar Potash mining projects (the Lake Disappointment and Beyondie Sulphate of Potash Projects) and initially included these for consideration in red within the risk record form for review and inclusion or deletion where appropriate. This version of the ERA excludes impact from Port development.	
Inherent Risk Threshold	Unwanted events with an inherent risk rating from L1 to L7 will not be considered for further analysis within the approvals documents.	
Residual Risk Tolerance Limit	All unwanted events with a residual risk ratings from H19 to M13 need recommended actions to reduce the risk level. For the Mining Proposal recommended action will be considered within the Environmental Outcome, Performance Criteria and Monitoring table within the Mining Proposal.	
Assessment Team	**Name**	**Role**
	Sarah Osborne	Stantec - Approvals lead
	Peter de San Miguel	Stantec - Group Manager - Environment (Mining)
	George Wan	Stantec - Approvals and Compliance Specialist
	Katie Buttler	Stantec - Graduate Environmental Scientist
	Fiona Taukulis	Stantec - Team Lead - Ecology
	Paul Bolton	Stantec - Technical Lead – Zoology
	Dan Roocke	Stantec - Environmental Scientist, Senior Botanist
	Adam Harman	Stantec - Principal Aquatic Scientist
	Beiha Yanez	Stantec - Closure Specialist
	Mark Savich	Agrimin - CEO
	Tom Lyons	Agrimin - General Manager
	Michael Hartley	Agrimin - Project Manager
	Greg Hill	Agrimin - Study Manager
	Nick Miles	Agrimin - Hydrogeologist
	George Munroe	Agrimin - Hydrogeologist
Assessment Date and Time	Thursday 24 September 2020	
Assessment Location	Stantec - Boardroom South - Ground Floor, 226 Adelaide Terrace	
Facilitator	Sarah Osborne	
Review Date	Wednesday 30 September - Melissa Younger	
Name: (Sponsor)		
Signed: (Sponsor)		
Date:		

FORMAL RISK ASSESSMENT RECORD FORM

Environmental Factors Affected	Location	Location	Activity	Impacts	Impacts	Impacts	Impacts	Inherent Risk Rating (No Controls)				Proposed Controls and Mitigation Measures	Residual Risk Rating (with Current Controls)			
Environmental Factors Affected **Key Environmental Factors * Other environmental factors ******	**Development Envelope**	**Domain**	**Activity**	**Impact Category (choose one of the four impact categories from picklist)**	**Threats and / or Risk Pathway or Aspect**	**Impacts (Pre-mitigation) (list the potential consequences of the unwanted event in the selected impact category)**	**Direct / Indirect**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**	**Current Controls (list controls that will be put in place to address the threats causing the unwanted event, the unwanted event, or the Impacts from the unwanted event)**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**
Inland Waters	Off-LDE	Rubbish Tip	Camp/site waste disposal	Environment	• Design and construction of landfill • Disposal of toxic or volatile materials in landfill • Leaching of contaminants to groundwater	• Groundwater contamination	Indirect	2	3	M	9	• Ground water testing will be conducted to monitor for signs of potential groundwater contamination • No toxic or hazardous material to be disposed of in landfill	2	2	L	5
Inland Waters	On-LDE	Ponds	Waste salt storage and disposal	Environment	• Waste salt stacks impact surface water flow patterns • Operational surface water flow patterns not identified in design / construction / operation. • Water inflow to unanticipated areas / disruption of natural surface water drainage and flow patterns	• Impact the large scale movement of surface water on Lake Mackay. • Disruption of surface water drainage, ponding and sedimentation leading to reduction in health of vegetation on periphery of Lake Mackay and Islands.	Indirect	2	1	L	2	• Detailed hydrological modelling of surface water flows around proposed on lake waste salt storage areas • Simulation of once in 100 year weather events to determine extents of inundation	1	1	L	1
Other - Human Health	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation	Health and Safety	• Loss of permit to operate • Insufficient funds to fulfill rehabilitation requirements • Unfinished rehabilitation of project due to unplanned closure	• Safety hazard Visual Impact. •Impact on post-mining land use. •Site not rehabilitated to required standards. •Increased potential for site impacts from contamination, erosion and sedimentation.	Indirect	3	3	M	13	• Removal of all equipment from site. • Triennial updates of Mine Closure Plan. • Agreement with landholder for any retained infrastructure. • Rehabilitation cost estimation and provisioning to IFRS Standard. • MRF reporting and contributions	2	2	L	5
Other - Human Health	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Mine decommissioning and closure	Health and Safety	• All equipment and materials not removed during decommissioning • Hazardous materials/structures left onsite	•Infrastructure/equipment left on site is a public safety hazard	Indirect	3	3	M	13	• Approved mine closure plan to be implemented, including safety audit at project completion	1	1	L	1
Other - Terrestrial Environmental Quality	Off-LDE	All Off-Lake Domains	Roadworks, site clearing	Environment	• Unplanned/prohibited clearing, clearing procedures and topsoil storage procedures not adhered to • Damage or loss of topsoil during stripping and/or stockpiling/storage	• Insufficient growth medium for rehabilitation and vegetation establishment.	Indirect	3	3	M	13	• Implement topsoil stripping and storage procedure. -detailed earthworks plan -seed vegetation that can be extracted? -rehab of plant site once decommissioned -burrow pit along haul road area progressive rehab (topsoil stockpile) -MRF levy.	1	3	L	6
Other - Terrestrial Environmental Quality	Off-LDE	Rubbish Tip	Camp/site waste disposal	Environment	• Waste disposal procedures not followed • Design and management of landfill site	• Degradation of land and soil quality • Soil contamination	Direct	3	2	M	8	Waste disposal procedures outlined and implemented as per an environmental management or waste management plan or equivalent, landfill site designed as per relevant specifications and industry standards.	2	2	L	5
Other - Terrestrial Environmental Quality	On-Lake	Trenches and Ponds	Pond decommissioning and closure	Environment	• Plastic liners not properly removed/buried. • Residual salts remain in ponds.	Soil contamination and reduction of environmental values.	Direct	3	2	M	8	• Liners to be disposed of or managed according to disposal options identified in Mine Closure Plan. • Subsequent versions of MCP to determine final liner removal and disposal processes. • Brine is to be removed from concentrator ponds prior to closure. • Brine and salt is to be removed from crystalliser ponds prior to closure.	2	2	L	5
Other - Terrestrial Environmental Quality	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation and Remediation	Environment	• Lack of contamination monitoring during project operation • Spill incidents not reported or recorded • Contaminated sites not adequately remediated	• Effective rehabilitation not possible • Extent of contamination not known	Direct	3	2		8	• Reporting of spills • Contaminated site register • Management of sites as per the CS Act • Contaminated site rehabilitation	2	2	L	5

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Environmental Factors Affected **Key Environmental Factors * Other environmental factors ******	**Development Envelope**	**Domain**	**Activity**	**Impact Category (choose one of the four impact categories from picklist)**	**Threats and / or Risk Pathway or Aspect**	**Impacts (Pre-mitigation) (list the potential consequences of the unwanted event in the selected impact category)**	**Direct / Indirect**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**	**Current Controls (list controls that will be put in place to address the threats causing the unwanted event, the unwanted event, or the Impacts from the unwanted event)**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**
Other - Terrestrial Environmental Quality	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation	Health and Safety	• Loss of permit to operate • Insufficient funds to fulfill rehabilitation requirements • Unfinished rehabilitation of project due to unplanned closure	• Safety hazard Visual Impact. • Impact on post-mining land use. • Site not rehabilitated to required standards. •Increased potential for site impacts from contamination, erosion and sedimentation.	Indirect	3	3	M	13	• Removal of all equipment from site. • Triennial updates of Mine Closure Plan. • Agreement with landholder for any retained infrastructure. • Rehabilitation cost estimation and provisioning to IFRS Standard. • MRF reporting and contributions	2	3	M	9
Social Surrounds	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation	Health and Safety	• Loss of permit to operate • Insufficient funds to fulfill rehabilitation requirements • Unfinished rehabilitation of project due to unplanned closure	• Safety hazard Visual Impact. • Impact on post-mining land use. • Site not rehabilitated to required standards. •Increased potential for site impacts from contamination, erosion and sedimentation.	Indirect	3	3	M	13	• Removal of all equipment from site. • Triennial updates of Mine Closure Plan. • Agreement with landholder for any retained infrastructure. • Rehabilitation cost estimation and provisioning to IFRS Standard. • MRF reporting and contributions	2	3	M	9
Subterranean Fauna	On-LDE	Ponds	Waste salt storage and disposal	Environment	• Inadequate design construction and/or subsequent operations resulting in unauthorised release of precipitated salts •Release of precipitated salts to surrounding environment	• Increased groundwater salinity of peripheral areas results in loss of subterranean fauna and fauna habitat.	Indirect	3	3	L	13	• Waste salt to be stored on the lake surface • Sufficient buffer between salt stacks and edge of lake to prevent contamination of peripheral soil and vegetation •Modelling and monitoring of salt migration •Sediment control bunding of stockpiles to restrict surface water movement •Natural reintegration of salt stockpile into surrounding lake at closure over long term	2	3	M	9
Terrestrial Fauna	Off-LDE	Rubbish Tip	Camp/site waste disposal	Environment	• Waste disposal procedures not followed • Design and management of landfill site • Attraction of feral fauna to project site	• Increased competition for native fauna • Increased predation of native fauna • Increase in feral fauna populations	Indirect	4	4	H	22	• Waste disposal will be done in accordance with DWER and Department of Health guidelines • Feral animal control programme in conjunction with adjacent landowners and DBCA guidance.	3	3	M	13
Terrestrial fauna	On-LDE	All On-Lake Domains	Trench and pond closure and rehabilitation	Environment	At closure, decommissioning of on-lake infrastructure removes fauna habitat	Loss of fauna habitat, potential loss of significant fauna,	Indirect	3	4	M	18	• Use of evaporation ponds by wetland fauna to be investigated during active life of project and reflected in revised mine closure plan	2	3	M	9
Terrestrial Fauna	On-LDE	Trenches and Ponds	Pond decommissioning and closure	Environment	Plastic liners not properly removed/buried. Residual salts remain in ponds.	Soil contamination and reduction of environmental values.	Direct	3	2	M	8	• Liners to be disposed of according to disposal options identified in Mine Closure Plan. • Subsequent versions of MCP to determine final liner removal and disposal processes. • Brine is to be removed from concentrator ponds prior to closure. • Brine and salt is to be removed from crystalliser ponds prior to closure.	2	2	L	5
Terrestrial fauna	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation	Environment	• Infrastructure (pondage, roads) left on site attracts feral animals • Increase in feral animal population	• Increased competition for native fauna, predation of native fauna	Indirect	4	3	M	17	• Approved mine closure plant to be implemented. • Post-closure monitoring to check for presence of feral after completion of rehabilitation works.	3	2	M	8

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Environmental Factors Affected **Key Environmental Factors * Other environmental factors ******	**Development Envelope**	**Domain**	**Activity**	**Impact Category (choose one of the four impact categories from picklist)**	**Threats and / or Risk Pathway or Aspect**	**Impacts (Pre-mitigation) (list the potential consequences of the unwanted event in the selected impact category)**	**Direct / Indirect**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**	**Current Controls (list controls that will be put in place to address the threats causing the unwanted event, the unwanted event, or the Impacts from the unwanted event)**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**
Terrestrial Fauna	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation	Health and Safety	• Loss of permit to operate • Insufficient funds to fulfill rehabilitation requirements • Unfinished rehabilitation of project due to unplanned closure	• Safety hazard Visual Impact. Impact on post-mining land use. Site not rehabilitated to required standards. Increased potential for site impacts from contamination, erosion and sedimentation.	Indirect	3	3	M	13	• Removal of all equipment from site. • Triennial updates of Mine Closure Plan. • Agreement with landholder for any retained infrastructure. • Rehabilitation cost estimation and provisioning to IFRS Standard. • MRF reporting and contributions	3	2	M	6
Social Surrounds	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Waste storage and disposal	Reputation	Excess salt stockpiles altering the landscape.	Reduced visual amenity of the area	Direct	2	4	M	14	•Salt stockpiles will be maximum 7m (excess salt stockpiles) and 20 m (process salt management area only). •Considered low impact area regarding visual impact to community / tourism. •Agreement with TOs regarding remaining stockpiles. •Salt stockpiles will remain at closure, unrehabilitated and passively assimilate into the surrounding landscape over the long-term.	2	3	M	9
Inland Waters	On-LDE	Trenches and Ponds	Trench and pond closure and rehabilitation	Environment	Sedimentation in ponds and trenches could alter the water quality.	• Changes to water quality can lead to reduction in health of ecosystem, invertebrate and vertebrate fauna, vegetation, heritage areas and sensitive receptors.	Indirect	2	1	L	2	• Sediment from bund captured in trench on one side. • Sediment control of general site during operations. • Consider option of pushing in bund material over / into trenches at closure following passive accumulation of salt / partial fill. • Surface hydrology modelling including closure scenario. •Site water balance and management plan.	1	1	L	1
Inland Waters	On-LDE	Trenches and Ponds	Trench and pond closure and rehabilitation	Environment	Groundwater drawdown	• Change in groundwater levels and hydraulic connectivity – impacts to surface water, changes to salt crust and potential dust generation, altered ecosystems, potential impacts to sensitive receptors / exclusions zones, potential off-site impacts, peripheral ecosystems, heritage areas.	Indirect	2	1	L	2	• Assessment of Groundwater Pumping Tests of the Trenches. • On-lake Hydrogeological Modelling. • Monitoring and responsive management. • Decommission of abstraction system at closure. • Groundwater recovery over long-term. • Complete and review groundwater modelling / assessments. • Include closure scenario and recovery in modelling. • Site water balance and management plan.	1	1	L	1
Inland Waters	Off-LDE	All Off-lake domains	Mine decommissioning and closure	Environment	Surface and groundwater contamination	• Chemical reagents used in the extraction process potential contamination of surface and ground water post-closure – e.g. xanthate. •Groundwater contamination.	Indirect	3	3	M	13	• Ground water testing will be conducted to monitor for signs of potential groundwater contamination • Risk analysis prior to use, management plan and or alternatives as required to reduce risk of long-term contamination. • Monitoring and responsive management during operations.	2	3	M	9
Inland Waters	On-LDE, Off-LDE, SIDE, NIDE	All domains	Mine decommissioning and closure	Environment	Flooding of lake .Natural lake system floods, including on playa domains – during seasonal variations.	• Potential increased dissolution of salt from stockpiles, or erosion.	Indirect	2	1	L	2	• Detailed hydrological modelling of surface water flows around proposed on lake waste salt storage areas • Simulation of once in 100 year weather events to determine extents of inundation •Flood mitigation assessment including closure scenario •Contingency planning	1	1	L	1

FORMAL RISK ASSESSMENT RECORD FORM

Environmental Factors Affected	Location	Location	Activity	Impacts	Impacts	Impacts	Impacts	Inherent Risk Rating (No Controls)				Proposed Controls and Mitigation Measures	Residual Risk Rating (with Current Controls)			
Environmental Factors Affected **Key Environmental Factors * Other environmental factors ****	**Development Envelope**	**Domain**	**Activity**	**Impact Category (choose one of the four impact categories from picklist)**	**Threats and / or Risk Pathway or Aspect**	**Impacts (Pre-mitigation) (list the potential consequences of the unwanted event in the selected impact category)**	**Direct / Indirect**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**	**Current Controls (list controls that will be put in place to address the threats causing the unwanted event, the unwanted event, or the Impacts from the unwanted event)**	**Likelihood**	**Consequence**	**Level (H, M, L)**	**Rank (1 to 25)**
Other - Terrestrial Environmental Quality	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation and Remediation	Environment	Climate change impacts	• Climate variations, drought, flood, fire - impacts to ecosystem (vegetation, invertebrates, vertebrates), heritage areas and sensitive receptors.	Indirect	3	3	M	13	• Climate change modelling and consideration in mine and closure planning and design (i.e. flooding, cyclonic events etc).	3	2	M	6
Other - Terrestrial Environmental Quality	On-LDE, Off-LDE, SIDE, NIDE	All Domains	Rehabilitation and Remediation	Environment	Failure of rehabilitation	Failure to attain completion criteria and satisfy post-mining land use requirements and community expectations.	Direct	3	2	M	8	Closure and rehabilitation strategy will be informed by research and trials where relevant, benchmarking from similar sites, and from any updates to relevant technical studies/modelling.	2	2	L	5

Risk Rating Matrix							
			Consequence (Where an event has more than one' impact'. Choose the 'Consequence' with the highest rating)				
			1 Insignificant / Slight	**2 Minor**	**3 Moderate**	**4 Major**	**5 Critical / Severe**
Likelihood Rating	**Almost Certain -** The unwanted event is expected to occur in most circumstance; twice or more per year (event will occur during the Project / period under review or high known incidents)	**Almost Certain (5)**	**Medium**	**High**	**High**	**Significant**	**Significant**
	Likely - The unwanted event will occur in most circumstances; once per year (event likely to occur during the Project / period under review or regular incidents known)	**Likely (4)**	**Medium**	**Medium**	**High**	**High**	**Significant**
	Possible- The unwanted event could well have occurred at some time; Once in 5 years (event may occur in some instances during the Project / period under review or occasional occurrence known)	**Possible (3)**	**Low**	**Medium**	**Medium**	**High**	**High**
	Unlikely - The risk even will probably not occur in most circumstance; once in 10 years (event is not likely to occur during the Project / period under review or some occurrence known)	**Unlikely (2)**	**Low**	**Low**	**Medium**	**Medium**	**High**
	Rare - The risk may only occur only under exceptional circumstances; once in every 20 years (event will occur in exceptional circumstances during Project / period under review or very few or no known occurrences)	**Rare (1)**	**Low**	**Low**	**Medium**	**Medium**	**Medium**

Impact Assessment Ranking	Biodiversity (DMIRS 2020)	Water Resources (DMIRS 2020)	Land and Soils (DMIRS 2020)	Environment (DER 2017)	Public Health and Amenity (air quality, noise and Odour) (DER 2017)
1 – Insignificant	Alteration or disturbance to an isolated area with no effect on habitat or ecosystem.	Negligible change to hydrological processes, water availability or water quality	Clean-up by site personnel, rectified immediately. Confined to immediate area around source.`	On-site impact: minimal	Loss of life
					Adverse health effects: high level or ongoing medical treatment
	Loss of an individual plant / animal of conservation significance			Specific Consequence Criteria (for environment) met	Specific Consequence Criteria (for public health) are significantly exceeded
					Local scale impacts: permanent loss of amenity
2 – Minor	Alteration or disturbance to <10% of habitat or ecosystem resulting in a recoverable impact within 2 years.	Short-term modification of hydrological processes, water availability and quality within project tenure, but no change in beneficial use.	Clean-up by site personnel, remediation within 1 year. Confined to operational area.	On-site impacts: low level	Adverse health effects: mid level or frequent medical treatment
				Off-site impacts local scale: minimal	Specific Consequence Criteria (for public health) are exceeded
	Loss of multiple plants / animals of conservation significance.			Off-site impacts wider scale: not detectable	Local scale impacts: high level impact to amenity
				Specific Consequence Criteria (for environment) likely to be met	
3 – Moderate	Alteration or disturbance to 10- 40% of a habitat or ecosystem resulting in a recoverable impact within 2-5 years.	Medium-term modification of hydrological processes, water availability and water quality within project tenure, but no change in beneficial use.	Clean-up by site personnel, remediation within 1-3 years.	On-site impacts: mid level	Adverse health effects: low level or occasional medical treatment
				Off-site impacts local scale: low level	Specific Consequence Criteria (for public health) are at risk of not being met
	Loss of Loss of <50% known local population of plant / animal of conservation significance.	Short-term modification of hydrological processes, water availability and water quality outside project tenure, but no change in beneficial use	Minor impact outside disturbance envelope or minor impact to soil stockpiles	Off-site impacts wider scale: minimal	Local scale impacts: mid level impact to amenity
				Specific Consequence Criteria (for environment) are at risk of not being met	
4 - Major	Alteration or disturbance to 40- 70% of a habitat or ecosystem resulting in a recoverable impact within 5-15 years.	Long-term modification of hydrological processes, water availability and water quality within project tenure, but no change in beneficial use.	Clean-up requiring external specialist, remediation within 3-10 years.	On-site impacts: high level	Adverse health effects: mid level or frequent medical treatment
				Off-site impacts local scale: mid level	Specific Consequence Criteria (for public health) areexceeded
	Loss of >50% known local population of plant / animal species with possible loss of entire local population.	Medium-term modification of hydrological processes, water availability and water quality outside project tenure, with change in beneficial use	Impact has migrated outside the disturbance envelope or contamination of soil stockpiles	Off-site impacts wider scale: low level	Local scale impacts: high level impact to amenity
				Short term impact to an area of high conservation value or special significance	
				Specific Consequence Criteria (for environment) are exceeded	
5 – Significant	Alteration or disturbance to >70% of a habitat or ecosystem resulting in a recoverable impact >15 years.	Long-term or permanent modification of hydrological processes, water availability or water quality outside project tenure, with impacts to a water-dependent environmental value and/or change in beneficial use	Clean-up requiring external specialist. Remediation >10 years, or permanent residual impact. Impact outside the tenement boundary	On-site impacts: catastrophic	Loss of life
				Off-site impacts local scale: high level or above	Adverse health effects: high level or on going medical treatment
	Local loss of conservation significant or listed species. Extinction of a species.			Off-site impacts wider scale: mid level or above	Specific Consequence Criteria (for public health) are significantly exceeded
				Mid to long term or permanent impact to an area of high conservation value or special significance^	Local scale impacts: permanent loss of amenity
				Specific Consequence Criteria (for environment) are significantly exceeded	

Types of Controls

Eliminate	Good Design, Different Method, etc.
Substitute	Use a less hazardous alternative
Engineering	Guards, Barriers, Ventilation, Fail-safes, Alarms, shutdowns, etc.
Separation	Physical distance from hazard source, exposure time, independent control or monitoring
Administrative	Policies, Work Procedures, Rules, Training, Management Procedures, Insurance, etc.
PPE	Personal Protective Equipment
Emergency Response	Contingency Plans - Required for high consequence risks

Effectiveness

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DMIRS ALARP Controls

Eliminate	1.Where reasonably practicable, eliminate the risk. This can be done by removing or avoiding the activity that posed the risk. For example, changing activity envelopes to avoid all clearing of a declared rare flora population or changing pit designs to avoid disturbance of potentially acid forming material.
Substitute	Reduce the risk by substituting a different activity which poses a lower risk. For example, backfilling of waste instead of creating an out of pit waste dump or substituting discharge of saline water to the environment with discharge to a lined evaporation pond.
Control	Control the risk with an engineered solution. For example, adding a liner to a process water pond, having a specifically designed adverse materials management cell in a waste dump, or the use of automatic (instead of manual) shut-off valves.
Mitigate	Mitigate the risk using administrative procedures. For example, reducing speeds on mine roads, daily checks of a TSF or warning signals/signs.

Appendix D Schedule of Works

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Soils and Material Characterisation	The location, total volumes and characteristics of the future topsoil stockpiles for the Project are unknown.	Rehabilitation failure and impacts to financial provisioning.	• confirm locations of future topsoil stockpiles and create an inventory; • conduct characterisation of topsoil; and • incorporate inventory with volumes and location of stockpiles once available into the MCP and continuously update.	From 2022	Agrimin General Manager
	Further soil survey work is required to better understand the capabilities and constraints for successful rehabilitation	Rehabilitation failure and impacts to financial provisioning.	• Further undertake in situ soil survey investigations to understand physical and chemical characteristics and specific impacts on future rehabilitation performance.	From 2022	Agrimin General Manager
	There may be further areas of the lake with PASS black ooze material.	PASS and ASS materials may not be managed adequately during closure works and post-closure if exposed.	• Undertake further investigations on the southern and western fringes of the lake to determine need to manage ASS and PASS materials; and develop a management plan if required.	2022-2024	Agrimin General Manager
Hydrology	Post closure surface water impacts.	Altered / increased / decreased surface water quantity and changes to flow direction and flooding duration and extent – subsequent	• continue collecting water quality data during the life of the Project; • complete and incorporate findings	2022	Agrimin General Manager

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
		impacts to ecosystems, flora, fauna, breeding and feeding cycles, heritage areas, peripheral areas and sensitive receptors.	from surface hydrology modelling and flood mitigation assessment into site design and site water balance and management plans; • include closure scenario in modelling; • complete Aquatic Ecology Investigation and incorporate into site design and management plans; and • documented closure strategy for waste salt stockpiles to be included in future iterations of the MCP, including assessment of alternative closure strategy options.		
Hydrogeology	Post-closure groundwater quality.	Potential risk to ecological receptors including riparian vegetation and aquatic biota	• Update groundwater model progressively and undertake impact assessment to take into consideration future closure scenarios and conditions.	2022 - ongoing	Agrimin General Manager

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
	Rate of groundwater recharge post-closure and extent of groundwater drawdown impacts of groundwater drawdown.	Change in groundwater levels and hydraulic connectivity – impacts to surface water, changes to salt crust and potential dust generation, altered ecosystems, potential impacts to sensitive receptors / exclusions zones, potential off-site impacts, peripheral ecosystems, heritage areas.	• complete and review groundwater modelling / assessments; • ongoing collection of water level data to inform modelling and completion criteria; • include closure scenario and recovery in modelling; and • develop a site water balance and management plan.	2022 - ongoing	Agrimin General Manager

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Local and Regional Ecology	The waste salt stockpile post-closure dissolution rate and nature of salt re-distribution.	Potential risk to ecological receptors including riparian vegetation and aquatic biota.	• undertake salt generation / assimilation modelling and include closure scenario in site modelling and salt balance; • conduct salt assessment (ecological impacts and thresholds) and incorporate findings into site designs and management plans; and • incorporation of findings from modelling and assessment into MCP.	2022 - ongoing	Agrimin General Manager
	Fauna (terrestrial, SRE, subterranean, waterbirds, aquatic biota) and habitat abundance and diversity data for further development of completion criteria	Potential impacts to fauna and habitats from rehabilitation and closure works.	• continue monitoring and collection of abundance and diversity data progressively throughout the life of the Project; and • update completion criteria in the MCP where relevant.	2022 - ongoing	Agrimin General Manager

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
	Data from future planned flora and vegetation surveys where relevant and from monitoring of future analogue sites for further development of completion criteria.	Inability to implement successful rehabilitation and closure the site in line with stakeholder requirements.	• continue monitoring and collection of data from future surveys and monitoring of analogue sites progressively throughout the life of the Project; and • update completion criteria in the MCP where relevant.	2022 - ongoing	Agrimin General Manager
Indigenous and European Heritage	Negotiation Agreements with Traditional Owners	Inability to successfully close the site in line with stakeholder requirements.	• identify all required future discussions and negotiations with Traditional Owners and outline in future stakeholder engagement strategy; and • incorporate in the detailed MCP	2022 - ongoing	Agrimin General Manager
Rehabilitation	A progressive rehabilitation strategy for the Project has not been determined.	• inability to implement successful rehabilitation; and • rehabilitation failure.	• develop a rehabilitation management plan with clearly defined outcomes and incorporate into the MCP; • identify potential areas for progressive rehabilitation throughout the project	2022 - ongoing	Agrimin General Manager
	Rehabilitation outcomes not determined.	• rehabilitation failure; and • inadequate closure provisioning			

Baseline Category	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Contaminated Sites	Potential future sources of surface and groundwater contamination.	Chemical reagents used in the extraction process may result in contamination of surface and ground water post-closure	• identify all reagents to be used in the extraction process and update risk assessment in the MCP with required controls; and • update all relevant environmental management plans	2021 - ongoing	Agrimin General Manager
Land Use	Further definition is required on current and post-mining land use in line with Traditional Owner discussions and requirements.	Inability to successfully close the site in line with Traditional Owner expectations.	• identify all required future discussions and negotiations with Traditional Owners and outline in future stakeholder engagement strategy; and • incorporate in the updated MCP	2021-ongoing	Agrimin General Manager

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Site Wide	Closure and rehabilitation strategy for the Project	• rehabilitation failure; • potential increase in financial liability; • potential impact to surrounding ecological receptors; and • inability to meet completion criteria and achieve relinquishment.	• undertake closure options analysis; • identify areas for progressive rehabilitation in the Project and undertake rehabilitation trials where possible; • update future MCP with closure options analysis and areas for progressive rehabilitation; • refine closure options analysis progressively with results from technical studies and modelling; and; • update closure strategy in MCP.	2021 - ongoing	Agrimin General Manager
	Closure conceptual model	There is currently no conceptual closure model for the Project	• continue development of conceptual closure model and include in future iteration of the MCP.	2020-2021	Agrimin General Manager
Landforms	Limited information on the long term and post-closure effects of salt stockpiles left in situ at closure	• potential impacts to ecological receptors including riparian vegetation and aquatic biota; • rehabilitation failure;	• monitoring of consolidation, dissolution rates and erosion at waste salt stockpiles; • monitoring of surface water salinity after rainfall events; • assessment of salt crust development	At commencement of operations and ongoing	Agrimin General Manager

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
		• potential increase in financial liability; • potential impact to visual amenity; and • inability to meet completion criteria and achieve relinquishment.	using aerial imagery; and • monitoring of riparian vegetation and lake biota to determine potential impacts of salt stockpile.		
	Limited information on proposed or potential locations of topsoil stockpiles and borrow pits	• rehabilitation failure; and • inadequate closure provisioning.	• confirm final location of borrow pits once haul road design is confirmed, if different to current proposed locations; • update MCP with proposed locations of topsoil stockpiles and borrow pits; • calculate potential volume of topsoil available for future progressive rehabilitation; and • develop a topsoil inventory which will be developed progressively during construction and operations.	2021 and ongoing	Agrimin General Manager
	Closure strategy for landforms	*Refer to Site Wide*			

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Industrial Infrastructure	A final list of all infrastructure across the Project.	Potential increase in financial liability	• progressively update an inventory of all infrastructure across Project; and • update list of industrial infrastructure and closure tasks in the MCP.	2022 onwards	Agrimin General Manager
	Lack of clarity on retention and use of infrastructure by a third party post-closure.	Increase in financial liability due to removal of infrastructure and closure of features.	• update list of industrial infrastructure and closure tasks in the MCP; and • continue to engage stakeholders in discussions on ownership and responsibility for infrastructure across the Project.	2021 onwards	Agrimin General Manager
Mining Infrastructure	Closure strategy for all mining infrastructure.	Potential impacts to surrounding ecological receptors from lack of final closure strategy for trenches, canals and ponds	• undertake closure options analysis; and • update closure options analysis progressively with relevant information from updated modelling and monitoring e.g. climate, groundwater; and • finalise closure strategy prior to closure and communicate with key stakeholders.	2021 onwards	Agrimin General Manager

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Water Containment Infrastructure	Lack of detail on design and construction specifications of the features.	Inadequate closure provisoning	• update knowledge base progressively in the MCP once designs are further developed and finalised; and • update relevant closure tasks/closure approach.	2021-2025	Agrimin General Manager
	Lack of clarity regarding post-closure responsibility or requirement for use.	Inadequate closure provisoning	• conduct a final inventory of all water containment infrastructure; • determine which will require decommissioning and which will be transferred to a third party; and • develop a decommissioning plan for all features requiring decommissioning.		

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Groundwater Infrastructure	Requirements for the retention of any bores post-closure for ongoing monitoring or other groundwater infrastructure for other uses as determined by key stakeholders in line with the post-closure land use	Inadequate closure provisioning	• conduct a final inventory of all groundwater infrastructure; • determine which will require decommissioning and which will be transferred to a third party; and • develop a decommissioning plan for all features requiring decommissioning.	2021-2025	Agrimin General Manager
Roads	The final length, area and construction dimensions of haul roads, access roads and tracks and of upgrades to existing tracks and roads.	Inadequate closure provisioning	• update knowledge base progressively in the MCP once designs are further developed and finalised; • update closure strategy for the roads; and • update closure provisoning.	2021 onwards	Agrimin General Manager
	Lack of finalised agreements with other stakeholders for access and responsibility post closure.	• undetermined post mining-land use; and • inadequate closure provisioning	• continue stakeholder engagement to determine use of and responsibility for access roads, tracks and haul road post-closure; and • establish agreements prior to closure for transfer of any roads or access tracks.		

Domain	Knowledge Gap	Associated Risk	Task	Timeframe	Responsible Department
Exploration Infrastructure	The extent of any leftover exploration infrastructure that will require rehabilitation at closure.	Risk of unrehabilitated exploration infrastructure areas and uncertainty around cost and extent of rehabilitation and closure effort required.	• update the inventory of exploration infrastructure features across the Project; • identify which features are no longer required and can be rehabilitated; • identify whether any features may still be required and undertake stakeholder consultation to determine appropriate responsibility and agreements; and • rehabilitate remaining features as per approved MCP.	2021 onwards	Agrimin General Manager

Appendix E Financial Provisioning Assumptions Report

MACKAY POTASH PROJECT
CLOSURE COST ESTIMATE ASSUMPTIONS REPORT – CLOSURE PROVISION

PREPARED FOR: AGRIMIN LIMITED

PREPARED BY: M SLIGHT & ASSOCIATES
JULY 2021

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REVISION SCHEDULE

Rev No.	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
1	02 Oct 2020	First Draft	M Slight			
2	23 Oct 2020	Second Draft	M Slight			
3	26 Oct 2020	Third Draft	M Slight			
4	4 July 2021	Final	M Slight	B Yanez		

Executive Summary

Agrimin Limited (Agrimin) has requested Stantec to undertake the development of a conceptual mine closure plan (CMCP) as a component of their documentation to be submitted to the Western Australian Environmental Protection Authority (EPA) for its assessment of the proposed Agrimin Limited (Agrimin) Mackay Potash Project (the Project). As a part of the CMCP a closure provision costing model to estimate the closure and rehabilitation cost for the project has also been prepared and this report provides the basis for, and the assumptions made, to arrive at the closure provision estimate for the project.

Agrimin propose to extract shallow brine-hosted potash from the top 3 m layer of salt-lake sediments of a portion of Lake Mackay. The process will involve a network of shallow trenches to allow brine to flow along the trenches into a series of solar evaporation ponds to precipitate SOP bearing salts. These salts will be wet harvested and pumped to a process plant designed to produce SOP as dry granular product. The Project has a proposed project life of 20 years with targeted construction commencing in 2022 and first production of potash in 2023.

The Project will include the development of the following key components:

- On-lake infrastructure including brine extraction trenches, solar evaporation ponds and salt harvesters;
- Off-lake infrastructure including processing plant, solar farm, wind farm and power station, bore field and associated support facilities; and
- Logistics infrastructure including site access haul road, Wyndham port storage facility and barge loading facility (the latter two components are not part of the scope of the CMCP or cost estimate).

The closure provision cost estimate model development has been undertaken at a definitive feasibility study (DFS) level due to the current planning and development stage of the project. The closure provision estimate has considered all likely rehabilitation and closure requirements (as per any legal obligations and standards within WA) and as specified within the CMCP, including rehabilitation of all off-lake disturbances (including the proposed 346 km site access road), decommissioning, demolition and removal offsite of all processing and support infrastructure including, power and water supply, administration and workshop facilities, accommodation village, airstrip and associated facilities, rehabilitation of all laydown areas, water containment facilities, bore field infrastructure, and site roads and tracks.

On-lake infrastructure and rehabilitation activities are limited to:

- Decommissioning and removal from the lake and offsite all brine pumping stations and salt harvesters and associated equipment.
- Backfilling, to make safe for post mining lake users, the near shore main plant feed canals.
- Cut, fold, and bury on-lake any exposed HDPE plastic liner materials used in the construction of the pre-concentration ponds; and
- Undertake final shaping of the waste salt stockpile not completed during operations.

The cost estimate model has provided for all cost inputs for the closure, decommissioning, demolition, and rehabilitation works including the costing of likely earthmoving and support equipment considered appropriate for the proposed closure works based on Caterpillar mining equipment and other relevant and typical equipment used in mine closure, decommissioning,

demolition, and rehabilitation activities by earthmoving and civil contractors. Unit costs and production schedules have been developed based on a "bottom-up first principles" approach and have been calibrated against actual rehabilitation and mining activities, to ensure currency and consistency with expected contractor rates for the type of closure activities likely to be undertaken. Where site contractor equipment unit costs are available these can also be included and applied within the estimate.

The following are the key assumptions for the closure provision cost estimate:

- All decommissioning and rehabilitation works are assumed to be undertaken over an estimated fifty (50) week period including mobilisation and demobilisation of equipment from Darwin and the East Kimberly regions. Post-closure monitoring and maintenance, likely required, commences at the end of the closure works and is assumed to run over a ten (10) year period or as prescribed within the current CMCP or future mine closure plans.
- Decommissioning and demolition costs are based on benchmarked industry averages factored for similar infrastructure within WA.
- All rehabilitation earthworks and revegetation costs have been estimated on a bottom-up, first principal approach, task and activity focused and where detailed aligned with the works prescribed within the CMCP and/or likely to be prescribed in any future closure plans.
- Disturbance footprints are as per the project design details provided within the DFS supplied by Agrimin.
- Any demolition rubble and infrastructure scrap and rubbish collected during the decommissioning and demolition of all infrastructure is to be disposed of, by burial, within a suitable landfill location on site, assumed to be the raw water storage pond located at the processing plant and a purpose-built landfill adjacent to the power infrastructure. The cost of construction and rehabilitation of the landfill facility has also been included within the cost estimate.
- Topsoil materials are assumed to be stockpiled during construction of the project and sufficient stocks will be available to complete all rehabilitation required. It is also assumed that stocks can be salvaged, adjacent to site tracks and borefield disturbance footprint areas when required.
- Haulage distances for transport of rehabilitation materials are assumed to not exceed 3.0 km (adjacent to rehabilitation works) as measured from design plans and drawings for the site.
- All on-lake closure activities are assumed to be undertaken using low ground bearing pressure equipment like the equipment used during the construction of the on-lake trenches and pre-concentration ponds.
- All rehabilitation works are assumed to be undertaken on a single (day) shift, twelve-hour, seven days per week basis, with equipment efficiencies (availability and utilisation of available hours) based on the estimators operational and mine closure experience.
- Project owner's management of the closure works including administration and supervision, accommodation, fly in fly out (FIFO) costs and post-closure management, maintenance and monitoring have been included in the estimate. These costs will be required to satisfy company and regulatory requirements.
- Pre-closure works including technical studies required to inform the closure plans and gain approvals, have been included within the closure provision estimate costs; and
- An assumed fuel price of $0.81 per litre delivered to site, ex the diesel fuel excise rebate, has been used as well as bench marked accommodation and FIFO unit costs.

The following table provides a high-level summary of the life-of-mine (LoM) and closure provision estimate.

Table 1: Total (LOM) Closure and Rehabilitation Cost Summary

Site project area	Total LOM cost estimate	Comments
Landforms	$164,874	Waste Salt Stockpiles, topsoil stockpiles, borrow pits
Industrial Infrastructure	$5,048,058	Processing, fuel storage, administration, power supply infrastructure, camp, airstrip etc.
Mining Infrastructure	$1,255,255	Main canals, pre-concentration ponds, brine pumping infrastructure, salt harvesters
Water Containment Facilities	$172,611	Raw water dam, RO plant, and brine delivery pipelines
Groundwater Infrastructure	$456,596	Freshwater borefield, pipeline removal and rehabilitation
Roads	$5,027,751	Access road to Wyndham and site roads and tracks
Exploration	$30,000	Trial ponds and associated trenches (current footprint)
Post Closure Monitoring and Maintenance	$535,000	10 years of monitoring
Owner's Management (closure and post closure)	$5,464,308	Management, supervision, FIFO and camp costs, consulting services
Contingency	$1,803,320	DFS contingency rate (10%)
TOTAL CLOSURE ESTIMATE	**$19,957,773**	

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1. Introduction

This report outlines the general assumptions used in the development of a closure provision cost estimate model for the Mackay Potash Project as requested by Agrimin Limited (Agrimin) to support the conceptual mine closure plan (CMCP) being prepared by Stantec for the project. The report is intended to be read in conjunction with the closure provision estimate model workbook which provides details of the proposed project's disturbance footprint, likely closure and rehabilitation activities, estimated rehabilitation quantities, assumed unit cost rates used in the estimate, estimated cash flows, and summary tables for the closure provision estimate.

The closure provision cost estimate model development has been undertaken at a definitive feasibility study (DFS) level due to the current planning and development stage of the project and the DFS design level of the project. The estimate has considered all likely rehabilitation and closure requirements (as per any legal obligations and standards within WA) and as specified within the CMCP, including rehabilitation of all off-lake disturbances (including the new 346 km site access haul road), decommissioning, demolition and removal offsite, or burial onsite, of all processing and support infrastructure including, power and water supply, administration and workshop facilities, accommodation village, airstrip and associated facilities, rehabilitation of all laydown areas, water containment facilities, bore field infrastructure, and site roads and tracks.

On-lake infrastructure and rehabilitation activities are limited to decommissioning and removal from the lake surface and offsite, all brine pumping stations and associated pipelines, and all salt harvesters and associated equipment. In addition, backfilling of the, near to shore, main plant feed canals to make safe and reduce risks to likely future end users of the lake has been assumed. The backfilling is assumed to be carried out using the excavated canal materials, stockpiled either side of the canals. The closure provision has also allowed for the removal and burial on-lake of any exposed HDPE plastic liner materials used in the construction of the pre-concentration ponds and other proposed infrastructure on the lake, the breaching of these ponds and final shaping of the waste salt stockpile not completed during operations.

The closure provision cost estimate has considered and allowed for the entire closure planning, execution, and post closure monitoring periods, and include:

- During operations (pre-closure) - development of relevant decommissioning and rehabilitation plans required to inform and update all future mine closure plans (MCP) as required by the regulators every three years of operations.
- Active closure and rehabilitation (closure) – assumed to commence once all exploration, operations and production activities cease, and decommissioning, demolition and rehabilitation works can commence; and
- Passive closure (post-closure) – usually considered as the closure monitoring period leading up to final relinquishment of the mineral tenements back to the State.

The closure provision cost estimate has been based on all likely compliance requirements for the project as required under WA regulations, and represents a 2021 "todays" dollars estimation for the closure and rehabilitation costs of all of the planned off-lake disturbance footprint (including the site access haulage road), decommissioning, demolition and removal offsite of all the mine infrastructure, plant and equipment both off-lake and on-lake, and limited rehabilitation activities on-lake to make on-lake features safe and stable. Generally, the closure provision cost estimate allows for all likely direct pre-closure, closure execution and post closure costs as they relate to the

disturbance footprint and the following components have been considered and allowed for within the estimate:

- All regulator and stakeholder obligations and commitments made, or likely to be made, to gain approval of the Project and any additional and new obligations and commitments established with any Mining Proposals, Ministerial Approvals, agreements etc.
- All likely company obligations required to maintain management, ownership, and control of the site during the closure periods (pre-closure, active or execution of closure, and post-closure periods) including safety, environmental, community, corporate closure support and site costs including closure planning, compliance, site admin and support, Fly in Fly out (FIFO) and camp costs.
- All likely consultant and other technical expert resources required to assist with and support the closure of the site during the active and post closure periods.
- All likely earthworks costs associated with all off-lake unrehabilitated disturbance footprints including rehabilitation of all infrastructure and support facilities including the processing plant, power generation infrastructure (solar, wind and generator) and supply, administration and workshop facilities, accommodation village, airstrip and associated facilities, all laydown areas, water containment facilities, bore field infrastructure, and site roads and tracks.
- On-lake infrastructure and rehabilitation is limited to decommissioning and removal from the lake and offsite all brine pumping stations and pipework and all salt harvesters and associated equipment, backfilling, to make safe for post mining lake users, the main plant feed canals using the excavated canal materials, removal and burial on-lake of any exposed HDPE plastic liner materials used in the construction of the pre-concentration ponds and other on-lake infrastructure, the breaching of the these ponds and any final shaping of the waste salt stockpile not completed during operations.
- Closure and rehabilitation of the proposed new 346 km bitumen access haulage road to the site has also been allowed for and assumed that the road will be reinstated to a similar level that currently exists (pre-project) including break-up and burial of the bitumen road surface. An opportunity exists for this bitumen access road to be handed over to the local community and a formal agreement should be established to allow for this opportunity to preserve a valuable community asset.
- All likely costs associated with off-lake contamination investigation, removal, and reporting.
- All likely mobilisation and demobilisation of necessary closure and rehabilitation equipment (assumed to be sourced from Darwin and/or the East Kimberly region) and personnel required during the closure period.
- All likely project owner's management costs including health and safety, planning, engineering, design, procurement, contractor management and supervision, QA/QC support, travel (FIFO), and camp accommodation costs associated with the closure period.
- All likely environmental compliance, monitoring and reporting obligations during the active and passive (post) closure periods including any tenement holding costs for the closure and post closure periods and any likely MRF levy payments required post operations,
- Any stakeholder engagement and local community obligations during the closure and post closure periods; and
- An estimation contingency to reflect the DFS class of estimate undertaken and applied to all costs.

The closure provision estimate has excluded the following:

- Any likely company-employee entitlements that are accounted for in Agrimin's legal obligations and other balance sheet provisions such as annual and long service leave entitlements, and other costs associated with retrenchment and/or retraining and

redeployment of employees. Note that the cost model estimate has been based on the use of third-party contractors and these contractor employee entitlement costs have been included within the contractor rates used to estimate the closure cost.

- Any likely stocks, stores and inventory, and asset disposal costs and associated "write downs".
- Any likely salvage value returns for the sale and disposal of any plant, equipment, and buildings etc.
- All likely Agrimin corporate costs including support staff, insurances, levies, equipment leasing payments, and overhead costs; and
- Any likely care and maintenance costs and/or any other costs associated with delaying or deferring the active or post-closure activities which are considered as an operating expense, (note that an estimate of three years of care and maintenance has been included in the cost model, but not the closure provision estimate, though).

The closure provision estimate has been based on the current planned disturbance footprints obtained from the DFS documents and plans supplied by Agrimin. The following table summarises the disturbance:

Table 2: Planned Disturbance Summary

Disturbance Classification	Area (ha)
Landforms: **off-lake** (topsoil stockpiles, borrow pits)	27
Landforms: **on-lake** (waste salt stockpiles)	500
Industrial Infrastructure: **off-lake** (plant, admin, power generation, village, airstrip)	197
Mining Infrastructure: **on-lake** (brine extraction trenches, main feed canal, ponds)	12,853
Water Containment: **off-lake** (raw water storage, RO plant, water delivery pipelines)	9
Groundwater Infrastructure: **off-lake** (borefield, pipelines)	30
Roads: **off-lake** (site access haulage road, site roads and tracks, camp road)	1,132
Exploration: **on-lake** (trial ponds and trenches)	10
TOTAL: ON-LAKE	**13,363**
TOTAL: OFF-LAKE	**1,395**
TOTAL: ALL AREAS	**14,758**

1.1. Cost Assumptions

The closure provision costs have been estimated to a DFS level based on typical requirements for financial reporting obligations under Australian Accounting Standards and feasibility study cost estimation standards, and for most areas, are assumed to reflect third party contractor costs to undertake the works based on a "bottom up first principles" approach.

The closure provision cost model has included a review of all cost inputs for the likely closure works including the costing of earthmoving and demolition equipment considered appropriate for the proposed closure works and based on Caterpillar mining equipment and other relevant and typical equipment used in mine closure, decommissioning, demolition, and rehabilitation activities by earthmoving and civil contractors. Unit costs and production schedules have been developed based on "bottom-up first principles" approach and have been benchmarked against actual

rehabilitation, demolition, and mining activities, to ensure currency and consistency with expected contractor rates for the type of closure activities likely to be undertaken. Where site contractor equipment unit costs were available these were also considered within the estimate.

1.2. Rehabilitation Fleet Options

Due to the relatively small-scale size of the off-lake processing facilities, a small fleet option has been considered for costing within the model and based on the equipment likely to be supplied out of Darwin and the East Kimberly region. The fleet is matched to ensure the required closure and rehabilitation works can be constructed safely and efficiently and as per any design requirements likely to be established and agreed with the regulators. The following table summarises the likely fleet arrangements. On-lake equipment is assumed to be similar to the equipment used to construct the on-lake infrastructure and includes low ground bearing pressure dozing and excavation equipment.

Table 3: Summary of Equipment Combinations for Rehabilitation Activities.

Closure Earthworks Activity	Fleet Combinations
Small Fleet: load, haul and dump stockpiled material including demolition rubble, topsoil, contaminated soils, trenching etc.	CAT 330 Excavator, CAT 980 Front End Loader, CAT 740 Articulated Truck, water truck, CAT 14M grader, service truck and light vehicles
Dozing, pushing materials and ripping	CAT D8, CAT D9 dozers
Topsoil spread, road de-compaction, ripping and general shaping and grading to establish natural drainage.	CAT D8, CAT D9 dozers, CAT 14M grader
Decommissioning, Demolition, and general closure activities,	Cranage (20t through to 120t), excavator mounted (CAT 340F and CAT 330F) demolition shear (CAT S365) and demolition sorting grapple (CAT G320), and general-purpose flatbed trucks,

The assumed hourly cost for each piece of equipment is based on third party contractor ownership, maintenance, and repair, and operating costs, and includes an allowance for contractor profit and administration overheads and is listed in the following table.

Table 4: Equipment Cost Summary Table.

Equipment Type	Monthly Rental Rate	Month Rental Plus Profit and Admin	Equipment Hourly Rate	Fuel	Lube/PM/Wear	Operator	Total Rate
	$/Month	**$/Month**	**$/hr**	**$/hr**	**$/hr**	**$/hr**	**$/hr**
Bulldozers							
CAT D8R	$20,970	$24,325	$78.41	$30.73	$62.06	$90.59	**$261.79**
CAT D9T	$28,918	$33,545	$108.12	$44.92	$71.31	$90.59	**$314.94**
Graders							
CAT 14M	$13,633	$15,814	$50.97	$20.82	$49.13	$90.59	**$211.51**
Tracked Excavators							
CAT 330F	$15,995	$18,554	$59.80	$25.85	$64.25	$90.59	**$240.49**
CAT 340F	$18,236	$21,154	$68.18	$33.41	$69.54	$90.59	**$261.73**
Wheeled Loaders							
CAT 980M	$17,541	$20,347	$65.58	$23.64	$85.30	$90.59	**$265.12**
Demolition Equipment							
CAT S365 Shear	$55,305	$64,154	$206.78	$-	$4.71	$-	**$211.49**
CAT G320 Grapple	$35,000	$40,600	$130.86	$-	$0.58	$-	**$131.44**
20 Ton Crane	$36,771	$42,654	$137.48	$7.88	$13.93	$90.59	**$249.88**
120 Ton Crane	$73,267	$84,989	$273.94	$9.46	$26.12	$90.59	**$400.11**
Trucks							
Flatbed Truck	$10,973	$12,729	$41.03	$6.30	$2.69	$-	**$50.02**
Water Truck	$8,786	$10,192	$32.85	$33.89	$48.62	$90.59	**$205.94**
CAT 740C (ADT)	$15,116	$17,535	$56.52	$23.73	$65.91	$90.59	**$236.75**

1.3. Hours of Work

Mine closure and rehabilitation earthworks are generally undertaken on a single shift basis unless there is a requirement for bulk earthworks movement of waste rock material that can be safely and efficiently undertaken during a night shift arrangement (not the case for this project). The cost model and estimate has been based on the following hours of work arrangements:

- Single shift, 12-hour days (day shift only).
- 7 days per week.
- Two crew staffing rosters based on a 14-days-on-7-days-off FIFO work arrangement, typically used by rehabilitation and mining contractors and mine owners.
- Effective use of available dayshift time (efficiency rate) has been set based on a general rate of 85%. The "efficiency" rate is to allow for equipment availability (maintenance, servicing, and repair) and utilisation (prestart safety checks, meal breaks, on-job instruction etc.). Note that other operational factors such as wet weather, job safety, operator efficiency etc. have been allowed for within the various equipment productivities used to estimate the activity costs; and
- Total equivalent monthly equipment operating hours has been set at 310 hours.

It is assumed that the works would be undertaken continuously throughout the estimated forty-six (46) week program of works.

1.4. Contractor Profit and Administration Overheads

The "bottom-up, first principle" modelled equipment cost estimates are developed to reflect a typical earthmoving contractor schedule of rates (often called "day works" rates) which include an allowance for the contractor's administration or overhead costs and a typical contractor profit or margin. There will be significant variation in the overhead and profit allowances depending on the contractor's scale of operations and support infrastructure, supply, and demand for the contractor services across the mining industry and even on the location of the job being quoted on. The estimator has opted for a typical rehabilitation earthworks contractor service that would be provided in WA.

The contractor's administration and overheads allowance cover the contractor's costs to support the contract, including management, and administration and associated overhead costs; it doesn't include any mine owner costs associated with undertaking the works on the site such as mobilisation-demobilisation of the contractor's equipment and workforce (site establishment), and any travel and accommodation costs etc. These costs form a part of the owner's project management and overhead costs associated with the closure and rehabilitation of the site. A conservative contractor approach has been assumed for this cost estimate and the following contractor financials for the cost estimates have been used:

- Contractor administration and overheads 6%; and
- Contractor profit margin 10%.

1.5. Contractor Ownership Cost of the Equipment

The modelled equipment costs are developed based on the capital (ownership) cost of the equipment and include:

- A purchase price in country-of-origin currency ($US).

- An allowance for typical mine site specifications (signage, GPS control, safety requirements, training etc.).
- Exchange rate ($US0.68 as at date of estimation); and
- Initial tyres, spare tray, buckets etc. and first (initial) fills, and tooling (ground engaging tools) as required.

Allowances have also been included for ownership financing (4.25% interest rate) costs and insurances (3.5%). Depreciation of the equipment is based on an assumed equipment life typical of mining and rehabilitation earthworks fleets.

1.6. Equipment Operating Costs

The operating cost assumptions for the equipment have been based on typical costs associated with operating and maintaining the nominated equipment in mining, closure, and rehabilitation activities. Allowances for maintenance (including maintenance labour and servicing), ground engaging tooling and tyres, fuel and lubes, and operating labour are all included in the rates.

1.6.1. Maintenance Operating Costs

The equipment hourly costs are made up of the following:

- Allowances for preventative maintenance including labour and parts as per the original equipment manufacturers (OEM) recommended maintenance and service schedules.
- Maintenance schedules based on service meter units (SMU), and at OEM recommended intervals including 250, 500, 1000, 2000 etc. hour servicing and component change out etc.
- Maintenance labour costs based on a combination of the earthmoving contractor maintenance personnel including supervision (50%), OEM specialist support labour allowances (25%), and an allowance for additional ad hoc contract labour (25%); and
- Component replacement costs are estimated for each piece of equipment and based on data sourced and supplied for the equipment.

1.6.2. Ground Engaging Tools and Tyres

Ground engaging tools (GET) includes such items as excavator and loader bucket teeth, wear plates, and dozer and grader blade cutting edges and ripper tips (boots). Allowance is made for average wear rates typically seen in mining applications and historical data and costed per service meter units (SMU) or equipment operating hour.

Tyre costs are based on the replacement cost of the specific tyre for each piece of equipment and an average tyre life based on typical mining application. The assumed tyre lives costed within the estimated cost data is as follows:

- CAT haul trucks and water trucks – 6,000 hours; and
- CAT graders and front-end loaders – 4,000 to 5,000 hours.

1.6.3. Fuel and Lubes

Fuel is based on the estimated diesel price delivered on site less the tax rebate allowance and an average fuel consumption (including a lube allowance of 0.5% of fuel consumption) for each piece of equipment. The fuel price has been set at a price of $0.81/litre ex rebate delivered to site.

1.6.4. Operating Labour Costs

Operating labour costs are based on typical labour rates within the earthworks contractor industry and includes all relevant on-costs. Breakdown of the equipment operating labour rate is as follows:

Base rate $51.28 per hour:

- Annual leave provision 11%.
- Long service leave provision 5%.
- Paid notice of termination allowance 1%.
- Severance and retrenchment allowance 1%.
- Payroll tax 5.5%.
- Workers compensation insurance allowance 3.5%.
- Statutory Guarantee Superannuation payment 9.5%; and
- Contractor profit 10%

Total operating labour rate equates to $77.00 per hour. This rate is then grossed up to reflect the availability and utilisation of the equipment (85%) to arrive at the equipment operator rate of $90.59 per machine operating hour (SMU).

1.7. Other Cost Assumptions

The closure provision cost estimate has allowed for all likely off-lake rehabilitation activities for sourcing rehabilitation materials including topsoil materials in stockpiles and adjacent to the disturbance footprints as required, reshaping footprint surfaces, re-establishing natural drainage across the footprints, road decompaction, water storage pond and dam backfill, contour ripping, and revegetation as required. The estimate has also allowed for the construction (and final rehabilitation) of a purpose-built Class II landfill site to allow for burial of all non-recyclable materials including the solar panels and the wind turbine blades. One-way haulage distance for all rehabilitation activities has been assumed to be less than 3.0 km unless specified otherwise within the cost model.

Other key cost assumptions are:

- Off-lake rehabilitation cover (topsoil) thicknesses are based on those proposed within the conceptual mine closure plan.
- Revegetation costs are based on typical (benchmarked) seeding costs for the Pilbara and Kimberley regions of WA.
- No salvage value has been ascribed to any infrastructure within the closure estimate that may be sold at closure.
- Fly in Fly out and camp accommodation costs are benchmark rates for the Pilbara; and
- Tenement holding costs, although not yet finalised, are as likely required to be expensed by Agrimin and represent both regulator tenement rents and local Shire rates as well as budgeted tenement management fees and charges.

2. Cost Details

2.1. Landform Assumptions

There will be minimal off-lake landforms built during the construction and operations of the project and confined to topsoil stockpiles and borrow pits which are proposed to be established to source suitable materials required for construction of the site infrastructure. The topsoil stockpile footprint has been estimated based on the proposed designs for the plant and infrastructure on the site and it has been assumed that topsoil depth to be removed prior to construction of the project will average 250 mm. This material will be placed in maximum 2.0 m high stockpiles for future closure and rehabilitation use. Total estimated topsoil stockpiled is 123,032 m^3 (spread over a 9 ha footprint)

The closure provision cost estimate has assumed that all the topsoil stockpiled during construction will be utilised in the closure and rehabilitation activities. Costs have been included to reshape the topsoil stockpile and borrow pit footprints to re-establish natural drainage, contour ripped and seeded using a mix of local native plant species. The borrow pits slopes are assumed to be dozed to less than 10° to make safe, contour ripped and seeded. Those borrow pits used to source materials for the construction of the site access haulage road are assumed to be rehabilitated during the construction of the road and will not require rehabilitation at closure of the project.

The on-lake landforms are limited to the waste salt stockpiles which are planned to be progressively shaped and managed during operations with dozers used to heap and profile the waste salt piles to make them safe and stable. The closure cost has allowed for the final heaping and profiling of the remaining waste salt stockpile that has not been completed during operations.

2.2. Industrial Infrastructure Assumptions

The infrastructure areas include the processing facilities and support infrastructure including workshop and warehousing, reagent storage, fuel and LNG gas storage, general administration facilities, power supply facilities including a solar farm, wind turbines, gas power generation and aerial reticulation, accommodation village and associated infrastructure and facilities, airstrip (bitumen) and associated facilities (terminal and Avgas storage), waste water treatment plant, landfill, SOP storage and haul truck load out facilities and laydown storage areas. The closure provision cost estimate has been based on benchmarked costs for similar infrastructure in WA and it has been assumed that no industrial infrastructure will be left on the site for post closure landowner use.

The decommissioning and demolition costs of the processing plant and support facilities (power supply, wastewater treatment plant and product handling, storage, and truck loading facility) have been based on benchmarked factored costs and averaged for the following assumed schedule of quantities required to construct the plant and associated facilities:

- Concrete footings, foundations, and slabs – 1,872 m^3.
- Steel work structure and platforms – 1,001 tonnes; and
- Plant footprint – 42,005 m^2.

The key infrastructure closure provision cost estimate assumptions include and allow for:

- All services including power, compressed air, gas and water to all buildings, plant and equipment and associated infrastructure is assumed to be isolated and disconnected prior to any demolition works being undertaken.

- All processing plant and equipment, fuel and LNG gas storage, wastewater treatment facility, communication infrastructure and all support buildings including the accommodation village and airstrip facilities and equipment to be decommissioned, demolished, decontaminated, and cleaned down before removal offsite for disposal.
- All power generating equipment is to be decommissioned, dismantled and all non-recyclable materials including all solar panels and wind turbine blades, are to be buried in a purpose-built Class II landfill located adjacent to the infrastructure. Specialised equipment including mobilisation of suitable cranage has been allowed for to dismantle the wind turbines.
- All costs associated with decommissioning, demolition, decontamination, and removal offsite of all recyclable materials (ferrous and non-ferrous materials, buildings, and equipment), and burial on site of all demolition materials and rubble for all infrastructure.
- Break up, excavation and haulage of all concrete foundations, slabs and pathways, scrap steel (not removed offsite) and rubbish etc. for disposal and burial within the base of process plant raw water pond prior to its rehabilitation.
- All industrial infrastructure footprint areas to be dozed and shaped to re-establish natural drainage, topsoiled, contour ripped and seeded. It has also been assumed that contamination surveys, investigations and reporting will be required to be undertaken across the infrastructure footprints.
- The airstrip is assumed to not be required post closure and will be decommissioned and rehabilitated. Works include break up and removal of all bitumen surfaces for burial within the raw water pond, decommission and removal offsite any terminal buildings and avgas fuel storage facilities, dozing and shaping of the footprint area to re-establish natural drainage, topsoil placement, seeding and contour ripping.
- The operations landfill will remain open during the closure works to ensure disposal of rubbish etc. and will be closed once all works have been completed. Works include dozing and levelling to re-establish natural drainage, topsoil placement, grader ripping and seeding.
- All on-lake infrastructure including brine pumping equipment, pipelines and salt harvesting plant and equipment to be decommissioned and removed off-lake and following decontamination and clean-down removed offsite for disposal.

2.3. Mining Infrastructure Assumptions

Mining infrastructure is limited to on-lake facilities including brine extraction trenches and canals, main plant feed canals, pre-concentration ponds and brine harvesting, pumping and delivery plant and equipment. It has been assumed that the brine extraction trenches, and pre-concentration ponds will be left in place to naturally return to pre mining salt lake conditions. Closure activities that have been assumed to be undertaken on lake and allowed for in the closure provision cost estimate include the following:

- All on-lake plant and equipment including all brine pumping equipment and pipelines, and all salt harvesters and associated support equipment to be decommissioned, decontaminated, and removed off-lake and offsite for disposal.
- The near-shore main plant feed canals to be backfilled using the excavated canal materials stockpiled adjacent to the canals (during canal construction). This activity is assumed to take place to make the lakebed shore-line safe for post mining lake users.
- Remove and bury on-lake any exposed HDPE plastic liner materials used in the construction and operation of the pre-concentration ponds and other on-lake infrastructure and equipment; and
- Completion of any final dozing and shaping of the waste salt stockpile not completed during operations.

2.4. Water Containment Facilities Assumptions

The closure provision cost model estimate has allowed for the rehabilitation of the site raw water pond proposed for the processing plant facility, the decommissioning and removal of the reverse osmosis water treatment plant and removal of all brine delivery pipelines. The following assumptions have been made:

- The raw water pond is assumed dry and will not require pumping for disposal of water prior to its rehabilitation. It has also been assumed that all concrete, bitumen and other demolition rubble and scrap not able to be removed from site will be placed in the base of the pond for burial. Once all rubble has been placed in the pond and dozed and levelled the embankments are to be dozed in to cover the rubble. It has also been assumed that additional cover materials will be sourced from the purpose-built landfill site for final encapsulation and rehabilitation of the pond footprint prior to topsoiling, dozing to re-establish natural drainage, contour ripping and seeding.
- The reverse osmosis plant is to be decommissioned, decontaminated, cleaned down and removed offsite and the plant footprint dozed and shaped to re-establish natural drainage, topsoiled, and seeded; and
- All brine delivery pipelines are assumed to be decommissioned, dismantled, and decontaminated prior to their removal offsite.

No allowance has been included within the closure model estimate for any maintenance and repair and/or construction of new diversion drains and bunds that may be required to manage surface water across the rehabilitated site.

2.5. Groundwater Infrastructure Assumptions

This closure provision cost category within the closure provision cost model allows for the rehabilitation of any groundwater bores and pumping infrastructure including production and monitoring bores, pipelines and pipeline corridors and other water disposal features. The following assumptions have been made regarding the closure and rehabilitation of the proposed borefield for the project:

- All 28 bores within the field are to be decommissioned and grouted to their full depth. There is an opportunity, however, to retain a number of the freshwater bores for post closure landowner use (if an agreement of handover is reached). The retained bores could be equipped with suitable windmills, and handpumps to provide a much needed, freshwater source in a very arid area.
- All proposed bore pumping infrastructure including the 45-kilometre pipeline, and associated plant and equipment is to be decommissioned, decontaminated, and removed offsite for disposal.
- All bore and pipeline footprints are to be dozed and shaped to re-establish natural drainage, topsoiled using salvaged soil adjacent to the disturbance, grader ripped and seeded as required.

2.6. Roads Assumptions

This model closure provision cost category covers the closure and rehabilitation of all on-site roads and tracks and includes the bitumen road to the camp and other roads onto the salt lake and around the plant infrastructure. The proposed 346 km bitumen site access haulage road is assumed to be rehabilitated to its pre-project condition. The estimate has allowed for the break-up and burial of the bitumen road surface, removal of culverts construction of suitable creek crossings and resurfacing with suitable road gravels if required. The road edges are assumed to be shaped and graded to ensure natural drainage away from the road surface and topsoiled using salvaged soils

along the road edges. An opportunity exists for this bitumen access road to be handed over to the local community and a formal agreement should be established to allow for this opportunity to preserve a valuable community asset.

All other site roads are to be fully rehabilitated; the cost estimate has included de-compaction, re-contouring, and road furnishings removal as required. Earthworks activities also include re-shaping of footprints to re-establish natural drainage across the roads and tracks, and topsoiling of the rehabilitated sections, using soil reserves salvaged from beside the roads and tracks, and seeding as required.

The camp road bitumen surface is to be broken up and removed for burial within the raw water dam. The rehabilitated surfaces are to be shaped and dozed to establish natural drainage, topsoiled using salvaged soils adjacent to the road, contour ripped using the grader and seeded.

2.7. Exploration Rehabilitation Assumptions

This model closure provision cost category covers closure and rehabilitation of all exploration disturbance on the project area. It has been assumed that all exploration activities have been completed during operations and costs have been allocated for an exploration rehabilitation audit to determine the success of past exploration rehabilitation. It is assumed that no additional rehabilitation works will be required.

2.8. Post-closure Monitoring and Maintenance Assumptions

The closure provision cost estimate has allowed for rehabilitation and closure monitoring to allow for any corrective actions needed to ensure the rehabilitation will meet any completion criteria likely to be set both within the conceptual mine closure plan and any future closure plans established. The monitoring is assumed to be undertaken for a ten-year post closure period and ending with relinquishment of the site back to the State.

The assumed monitoring program activities allowed for within the estimate include:

- Site inspections undertaken annually for visual assessment of the rehabilitation, both on and off the lake, weed inspections and other issues that maybe impacting on the rehabilitation of the site. The post closure costs have included an allowance for any weed eradication programs that may be required over the ten years.
- Biennial monitoring of the rehabilitation and revegetation success using quantitative quadrat and/or transects to assess performance against completion criteria.
- Biennial ground and surface water monitoring including groundwater levels within monitoring bores, and surface water management impacts and drainage issues.
- Biennial assessment of the on-lake rehabilitated areas and general lake ecology.
- Assessment of fauna habitat, abundance, and diversity at completion of the closure works at five years post closure and prior to relinquishment, utilising the local community to assist with the assessment.
- Costs have also allowed for mobilisation and demobilisation of monitoring crews as required and it has been assumed that the monitoring is to be undertaken in accordance with the mine closure and performance monitoring plans and any likely tenement conditions and commitments.

2.9. Owners Project Management Assumptions

The closure provision cost estimate has allowed for Agrimin personnel to manage and support the closure and rehabilitation works as well as rehabilitation and demolition contractors. It has also included costs associate with the fly in fly out (FIFO) and accommodation costs for all personnel involved in the rehabilitation works including the earthworks and demolition contractors. It is assumed up to a maximum workforce of 38 personnel and contractors will be required over the 46 week works program. The costs have been developed using a bottom-up approach and have allowed for the following resources:

- Regional corporate support personnel.
- Project management, site environmental staff, field technicians (QAQC requirements), safety and medical support, administration, and maintenance personnel.
- Operating and maintenance costs to support offices, workshops, camp, power, water, and sewerage requirements during the closure works.
- Village accommodation and catering and FIFO costs (single flight per week) for all personnel and contractors.
- Light vehicle allowances.

The closure provision cost estimate has also allowed for investigations and studies to assist with and support the closure planning and implementation, stakeholder engagement, and consultant requirements during the pre-closure planning phases, execution and post-closure monitoring periods including:

- Contamination, ecotoxicity, and human health hazard identification, investigation, and risk assessment studies.
- Salt lake ecology studies.
- Decommissioning and engineering prescription development and decommissioning plan development.
- Waste and topsoil characterisation studies and rehabilitation materials balance assessments.
- Project permits and approvals for closure.
- Data management systems both during operations and post closure.
- Social impact assessments, development of post closure land management plans and community and other stakeholder engagement requirements.

The estimate has also assumed an allowance for rehabilitation and closure contractor mob-demob of demolition and earthmoving equipment as per fleet requirements with the equipment assumed to be sourced from the Darwin and the East Kimberly region.

The tenement holding costs expected to be incurred during the closure execution and post closure periods have also been included in the closure provision cost model, but actual tenement rents and shire rates have yet to be input into the cost estimate. This can be finalised once the project has been given approval and rents and rates are finalised.

2.10. Contingency

The closure provision cost estimate has included and allowed for an estimation contingency to be applied across each closure cost element to allow for any potential and/or unforeseen events or risks that may exist in each of the closure activities, due to limited availability or accuracy of data, the yet to be finalised closure designs for the specific closure elements, or any unforeseen

circumstances that may occur during the mine life that could impact on closure costs. For the closure cost estimate the contingency has been set at 10% which would be equivalent to a "Class III/IV" definitive feasibility study cost estimate (as per the Cost Estimation Handbook, AusIMM) and reflects the detail allowed for within the likely closure plan for the site.

References

- Mackay Potash Project Conceptual Mine Closure Plan (DRAFT), Stantec, October 2020
- Mackay Potash Project - Definitive-Feasibility Study DRAFT, Chapters 3, 9, 10, 11, 12, Agrimin, October 2020
- Guidelines for Preparing Mine Closure Plans – DIMRS WA, May 2015
- Cost Estimation Handbook, Second Edition, Monograph 27, AusIMM, 2012

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