Government of Western Australia
Department of Water and Environmental Regulation

Amendment Notice 1

Works Approval Number	W5939/2015/1
Works Approval Holder	Kalium Lakes Potash Pty Ltd
ACN	601 436 060
File Number:	DER2015/002764-1
Premises	Beyondie Sulphate of Potash Project M69/145, M69/146 and L69/31
Date of Amendment	08 August 2019

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Works Approval in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Rebecca Kelly

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Date: 2019.08.08 13:08:04 +08'00'

Rebecca Kelly

A/Senior Manager, Resource Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

1. Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
m^3	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.

Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in *Guidance Statement: Risk Assessment*
Works Approval Holder	Kalium Lakes Potash Pty Ltd

2. Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Works Approval issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment to the design capacity and infrastructure at Beyondie Sulphate of Potash Project (the Premises).

The guidance statements that have informed the decision made on this amendment are within Appendix 1.

3. Amendment description

Kalium Lakes Potash Pty Ltd (Works Approval Holder) submitted an application for a works approval amendment on 27 July 2018 following the completion of the Trial Extraction Programme, authorised under W5939/2015/1. The amendment relates to preparations for full scale operations with an increase in production design capacity and the addition of infrastructure, including processing plant.

The Works Approval Holder has requested the following changes to the works approval:

1) increase in design capacity from 25 ktpa to 90 ktpa;
2) addition of infrastructure including brine trenches, bores and pipelines;
3) addition of process plant; and
4) addition of a salt stockpile pile and earthen bund.

Infrastructure

- **Additional brine trenches on the surface of Ten Mile Lake and Lake Sunshine**

Trenches up to 6m deep and 2-4m wide will be constructed to drain shallow groundwater contained within the upper lenses of the salt lakes. The spoil will be retained next to the trenches to backfill the trenches at closure transition.

- **Additional bore network targeting the brine paleochannel aquifer**

A network of 41 bores will be installed around Ten Mile Lake and Lake Sunshine to target the hypersaline brine within the deep paleochannel aquifer. Each bore will be run by a generator and pump.

- **Additional pipelines to transport brine to the evaporation ponds**

A network of 110-500 mm diameter polyethylene pipes will be used to transport the hypersaline groundwater from the bores and trenches to the evaporation ponds. The pipes will be laid across the ground following access tracks.

- **Expansion of evaporation ponds**

Evaporation ponds refers to a number of different pond types that utilise evaporation to crystallise minerals from the hypersaline brine. The ponds are listed in Table 2.

The ponds will be constructed using a cut and fill method with all material sourced from within the footprints. One hundred millimetres of topsoil will be removed and stored for use during closure. The ponds will include a minimum 250mm freeboard the prevent overtopping. The concentrator ponds will have a nominal 1:500 grade and the remaining ponds will be flat bottomed to allow safe harvesting.

Ponds will be constructed away from areas of potential flooding and will have a sequential overflow system. All ponds will be lined with a 1mm high density polyethylene (HDPE) liner to prevent seepage. Two un- named salt lakes between Ten Mile Lake and Lake Sunshine will be

used as concentrator ponds. These lakes will also be lined with a 1mm HDPE liner.

The layout of the proposed ponds is shown in Figure 1.

Table 2: Evaporation pond name and purpose.

Name	Purpose	Number of ponds		Depth (m)	Total surface area of ponds (ha)	
		Approved	Full scale 90 ktpa		Approved	Full scale 90 ktpa
Concentrator Ponds	Primary brine solar concentrators to reduce pumping volume	0	3	0.9	0	92.1
Feed Ponds	Concentrator Lake Mixing	2	1	0.75	8.0	4.0
Concentrator Ponds	Secondary brine solar concentrator	4	5	0.9	48.0	69.6
NaCl Pond I	Crystallise sodium salts	4	10	1.05	23.4	83.0
Astrakanite Ponds	Mixing plant mother liquor	0	3	0.75	0	12.8
Leonite Ponds	Crystallise Leonite Salts	2	16	0.85	34.0	91.1
KTMS Ponds	Crystallise KTMS	2	8	0.8	11.0	29.8
Carnallite Ponds	Crystallise Carnallite Salts	2	3	0.8	7.2	15.7
Bitterns Ponds	Storage of Magnesium brine	0	3	0.85	0	1.2

Construction of Process plant

The process plant will have two sections as follows:

- Sulphate of Potash (SOP) purification plant; and
- Magnesium by products plant.

The site layout of the Process plant is shown in Figure 2.

Development of excess salt stockpile and earthen bund

Excess salt will be stockpiled in a dedicated area on the surface of Ten Mile Lake. The stockpile will cover a 130ha area and will be up to 15m high. The stockpile will be disconnected from the surface water of Ten Mile Lake by an earthen bund.

The locations of the infrastructure in the Beyondie Lakes and Ten Mile Lake section (trench pumps, brine production bores, trenches, ponds, existing roads and tracks, the brine pipeline, concentrate ponds and the waste salt stockpile) is shown in Figure 3.

The locations of the infrastructure in the Lake Sunshine section (trench pumps, production bores, trenches, the brine pipeline, concentrate ponds and existing road and tracks is shown in Figure 4. The layouts of the Ten Mile Lake and Lake Sunshine concentrate ponds is shown in Figure 5.

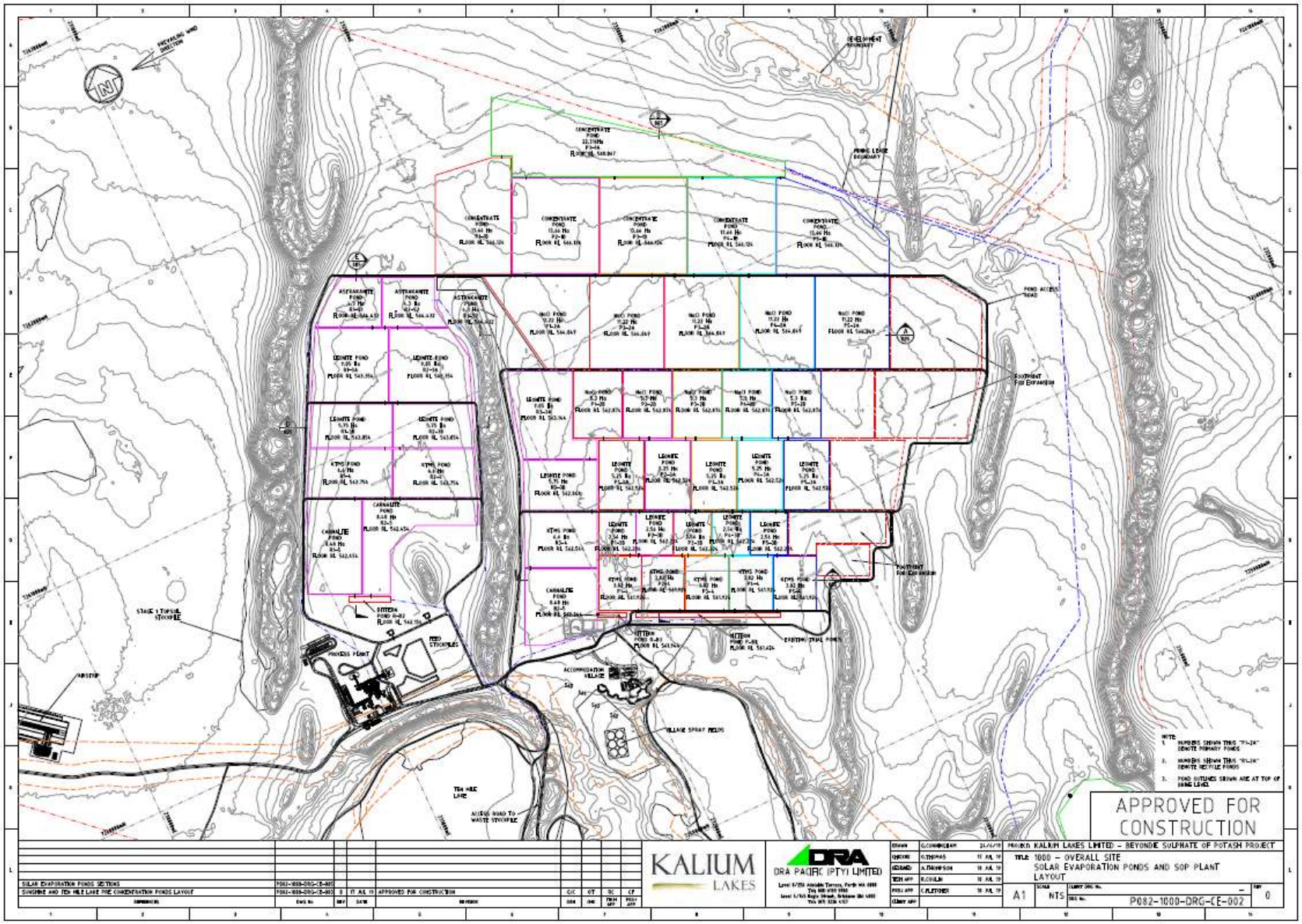


Figure 1: Beyondie Sulphate of Potash Project pond layout

W5939/2015/1

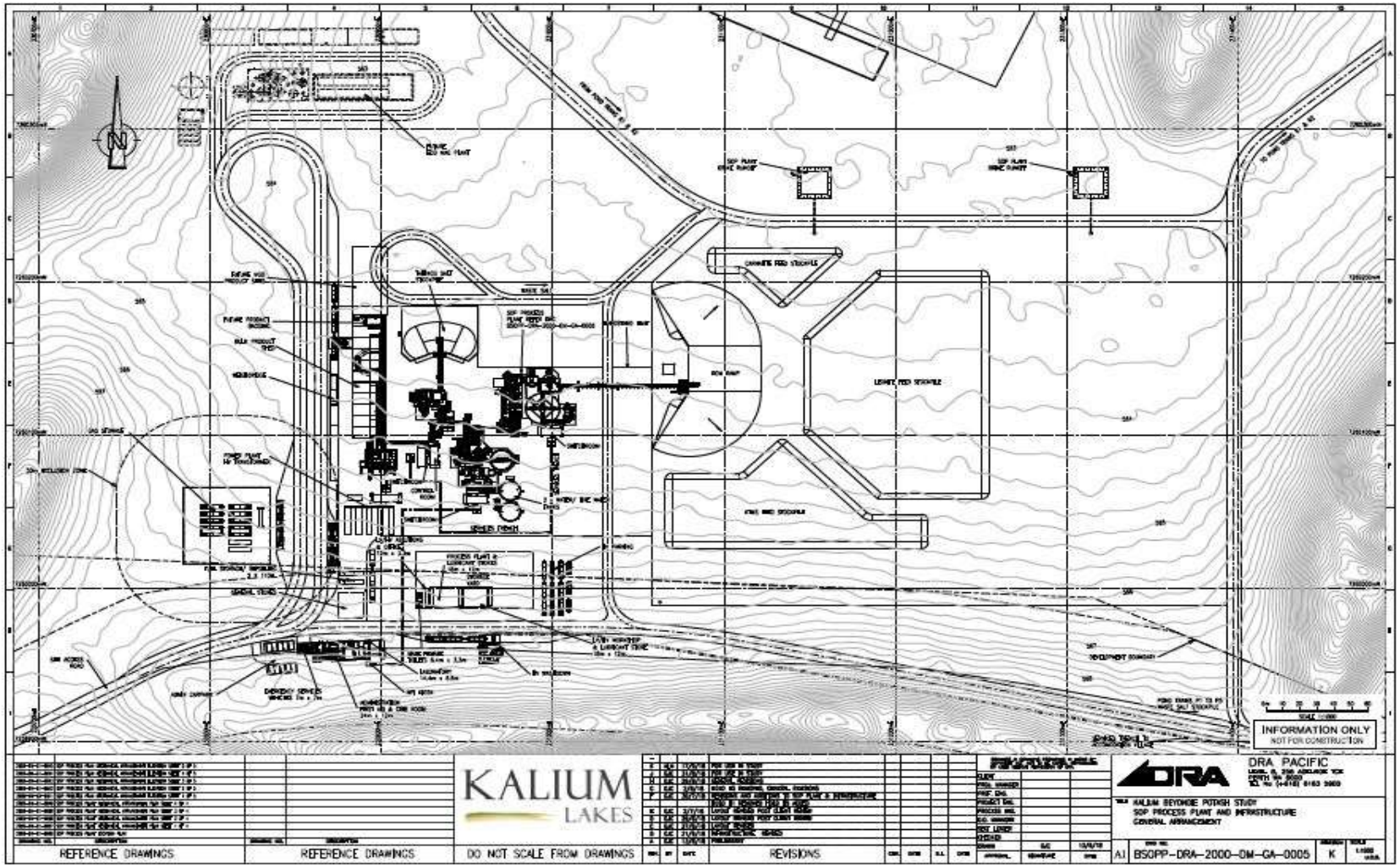


Figure 2: Process plant site layout

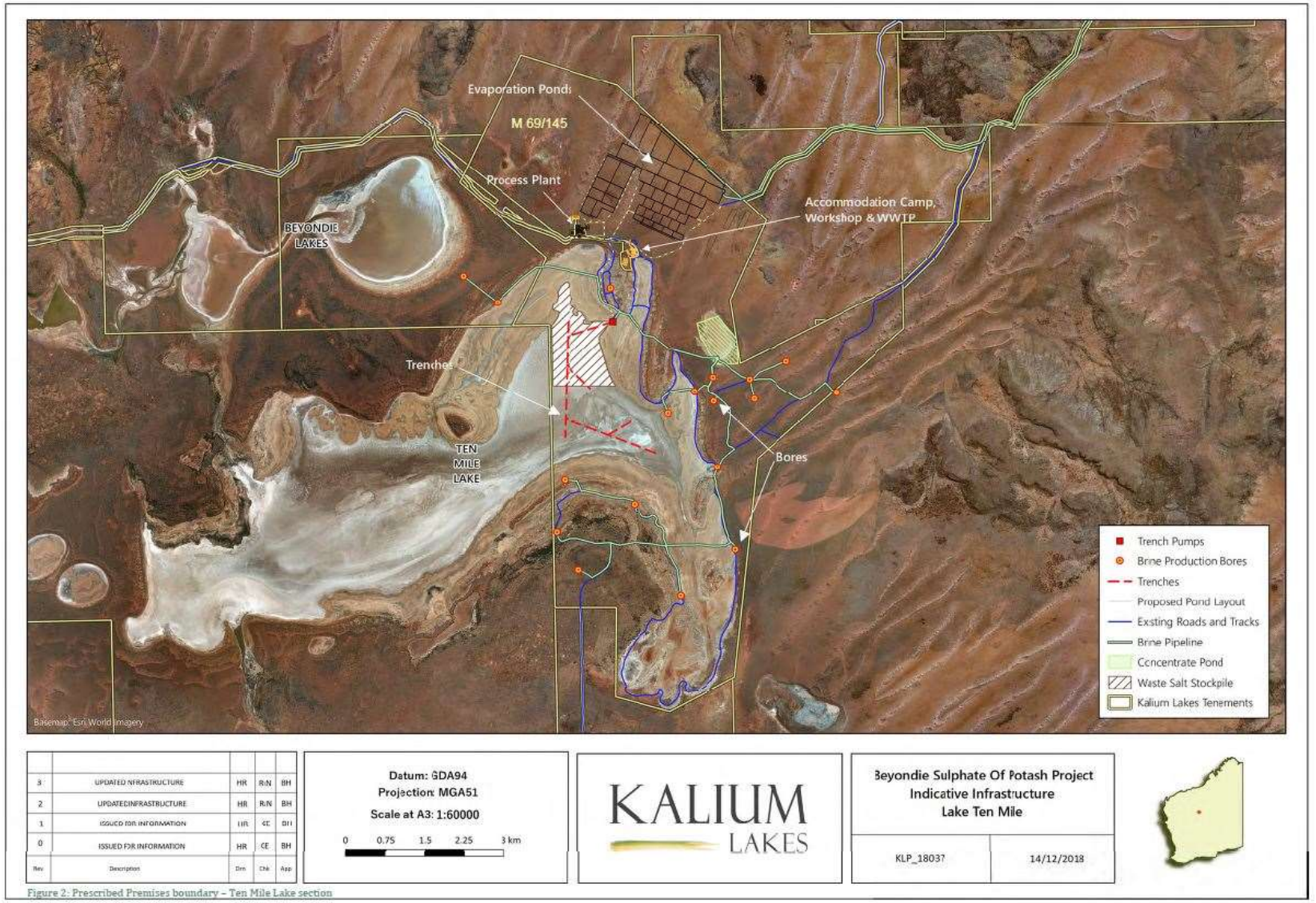


Figure 3: Beyondie Lakes and Ten Mile Lake section infrastructure

Figure 4: Lake Sunshine section infrastructure

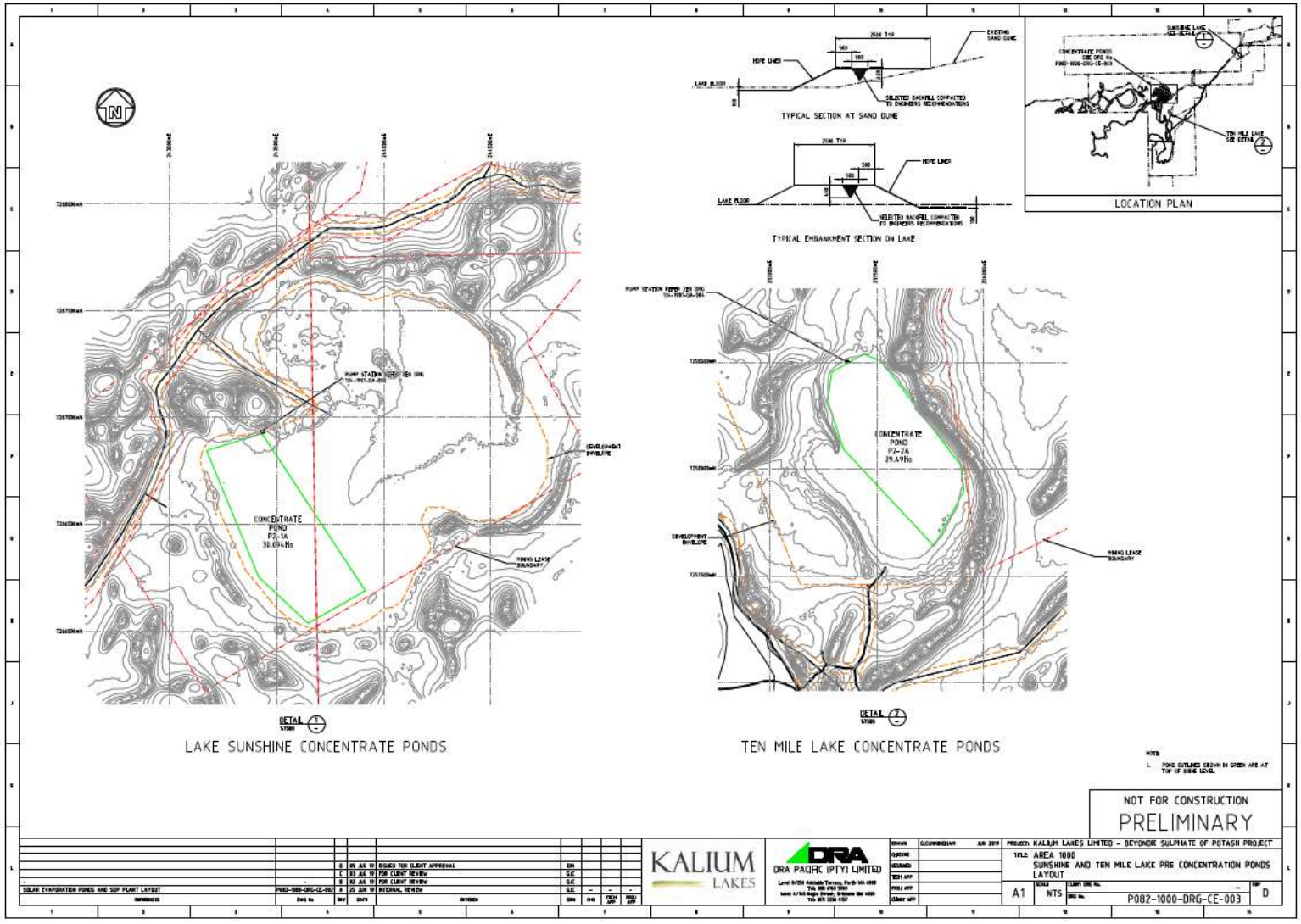


Figure 5: Lake Sunshine and Ten Mile Lake concentrate pond layouts

4. Commissioning

Evaporation ponds

The bores and trenches will be progressively installed and expanded as required to meet brine delivery requirements for pond operation. The bores and trenches will fill the concentrator lakes between Ten Mile Lake and Lake Sunshine first, followed by the main evaporation and salt ponds. Each pond will consist of four trains which will be commissioned as they are constructed. Brine will fill the first pond in the train and each subsequent train will be gravity fed. Once the first train is completed, trains two, three and four will be commissioned in the same way. The commissioning is anticipated to occur over a timeframe of 12-15 months. This timeline allows for the construction and progressive filling of the ponds, including the commencement of crystallisation of the 100mm salt floor (to serve as liner protection) and the crystallisation of salt for harvesting. When the ponds reach sufficient depth they will be switched off one pond at a time and the salt will be harvested and stockpiled ready to commission the process plant.

Process plant

Each major piece of operating equipment (e.g. flotation cells, reactors) and secondary equipment (e.g. pumps, heat exchangers) will be commissioned by following a start- up procedure and adjusting process parameters to reach a steady state operating condition. Once it is established that a section of the plant is operating correctly, that section will be stopped by following the shutdown procedure. Once complete and signed off by the engineering supervisor, each section of the process plant will be made live sequentially to the desired throughput for operations. The commissioning of the process plant will be deemed complete once all operating and secondary equipment have been verified as operating correctly. It is expected that commissioning will take 8-12 weeks.

5. Legislative context and other approvals

The Works Approval Holder has provided the following information relating to other approvals as outlined in Table 3.

Table 3: Relevant approvals

Legislation	Number	Approval
Environmental Protection Act 1986	EPA Assessment number 2138	Ministerial Statement 1098 Published 7/6/19
Mining Act 1978	Registration ID 74662	Mining Proposal and Mine Closure Plan approved by DMIRS on 30 August 2018
Mining Act 1978	Registration ID 77706	Currently on hold- DMIRS RFI
Environment Protection and Biodiversity Conservation Act 1999	EPBC 2017/8088	Approval granted 18/1/2019
Rights in Water and Irrigation Act 1914	GWL182768(1)	Existing 5C Licence for 1.5Gl/yr Five 5C Licences were granted on 4 July 2019 as follows: • GWL203052(1) • GWL203053(1) • GWL203054(1)

Legislation	Number	Approval
		• GWL203055(1); and • GWL203056(1)

6. Part IV of the EP Act

The Beyondie Sulphate of Potash Project has been assessed under Part IV of the EP Act by the Environmental Protection Authority (EPA). It is subject to the requirements of Ministerial Statement (MS) 1090. The EPA's assessment is provided in EPA Report 1631. The Part V application is consistent with the relevant Part IV determinations of the project,

Ministerial Statement 1090

MS 1090 was published on 7 June 2019. There are no conditions directly related to management or control of emissions and discharges.

Included in the statement are conditions to minimise direct and indirect impacts to the following:

- *Tecticornia shrubland vegetation and Tecticornia species listed as Priority Flora (Tecticornia globulifera, Tecticornia sp. Christmas Creek, Tecticornia sp. Little Sandy Desert and Tecticornia sp. Sunshine Lake);*
- Subterranean Fauna (Stygofauna); and
- *Macrotis Lagotis* (Greater Bilby).

In addition to the above requirements, the Applicant is required to prepare and submit a Tecticornia Monitoring and Management Plan, a Subterranean Fauna Management Plan and to conduct pre-clearance surveys for the Greater Bilby within 2 weeks prior to ground disturbing activities being undertaken.

Potential impacts to Tecticornia, Subterranean Fauna (Stygofauna) and the *Macrotis Lagotis* (Greater Bilby) have not been considered in this document given it has been considered under MS 1090.

7. Amendment history

Table 4 provides the amendment history for W5939/2015/1.

Table 4: Works approval amendments

Instrument	Issued	Amendment
W5939/2015/1	21/01/2016	Trial extraction program to test the production of potassium sulphate via extraction of hypersaline groundwater and subsequent evaporation
W5939/2015/1	5/05/2016	Updated layout of the trial evaporation ponds
W5939/2015/1	08/08/2019	Amendment Notice 1 Increase in design capacity, addition of infrastructure including trenches and evaporation ponds, bores and pipelines, construction of process plant and, stockpile area with bund.

8. Acid sulfate soils

DWER's Mapping System (Geocortex) defines areas where there is a risk of acid sulfate soils being present. The Acid Sulfate Soils risk map layer does not define the risk of acid sulfate soils being present in the local area where the Premises is located. The Applicant has advised that

the potential for acid- producing behavior is low based on the following:

- the site is above the Menzies line- a line identified by Geoscience Australia south of which salt lake sediments have a tendency to be more acidic;
- the excavated trenches from the trial and the dunal areas surrounding the lakes have revealed significant calcium precipitation in the form of gypsum and calcrete;
- there has been no evidence of low pH water in the lake surface water or groundwater samples (including samples from the trenches); and
- lake water and sediment chemistry show considerable neutralizing capacity.

If acid sulfate soils are encountered during construction, the Applicant should ensure that they are treated and managed in accordance with the Guideline *Treatment and management of soil and water in acid sulfate soil landscapes, June 2015* (Department of Environment Regulation 2015).

9. Emission sources, pathways and receptors

9.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's Risk Framework. The key emissions considered in this report are **dust, sediment and movement of hypersaline water (e.g. into surface water, groundwater and over land)** from activities during construction, commissioning and operations. The Applicant has proposed measures to assist in controlling these emissions where necessary. The control measures have been considered when undertaking the risk assessment detailed in Section 10.

Following completion and compliance with this works approval, a prescribed premises category 14 licence under Part V of the EP Act will be required to authorise emissions associated with the operation of the premises. A risk assessment for the operational phase has been included in this Decision Report, however licence conditions will not be finalised until DWER assesses the licence application.

9.2 Receptors

Risk is assessed as a combination of emission sources, the proximity and sensitivity of receptors to those emission sources and any pathways that can allow the emission to reach and potentially harm the receptor.

There are no residential or other sensitive premises within 70km. The closest is Kumarina Roadhouse.

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment. Section 10 considers these receptors in the context of emissions and potential pathways.

Table 5: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Tecticornia shrubland Priority Flora • *Tecticornia globulifera* • *Tecticornia* sp. Christmas Creek • *Tecticornia* sp. Little Sandy Desert • *Tecticornia* sp. Sunshine Lake	Within the premises boundary (Not considered in this Decision Report. Potential impacts to receptor and Applicant requirements that include monitoring and management have been considered under MS 1090)
Priority Fauna • Subterranean Fauna (Stygofauna)	

• *Macrotis lagotis* (Greater Bilby)	
Lake Sunshine	Within the premises boundary
Ten Mile Lake	
Beyondie Lake	
Two un named salt lakes between Lake Sunshine and Ten Mile Lake	Within the premises boundary
Beyondie West Fresh Water Source Area	>10 km from Beyondie Lake
Ten Mile South Fresh Water Source Area	2km from Ten Mile Lake
East Murchison Groundwater area	Within the premises boundary
Groundwater	SWL6.5m (4 Mile Well- 19.9 km from Ten Mile Lake) SWL7.9m (12 Mile or Lake Well- 7.6km from Ten Mile Lake) SWL13.5m (Beyondie Homestead- 22.3km from Ten Mile Lake)

9.3 Pathways

Surface/overland runoff has been considered as a pathway for sediment and hypersaline water movement. In addition to this pathway, the infiltration of hypersaline water through soil into groundwater has been considered as per the risk assessment in Section 10.

10. Risk assessment

Risk ratings have been assessed for each key emission source and considers potential source-pathway-receptor linkages. The mitigation measures/controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction, commissioning and operation have been assessed separately. This is because separate approvals are needed for construction and commissioning and operations. The works approval that accompanies this report authorises construction only. A licence is required to operate the premises.

Table 6: Risk assessment - construction

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls - refer to conditions of the granted instrument
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Earthworks and construction of infrastructure	Dust	Air/windborne pathway causing impacts to surface water quality within Lake Sunshine, Beyondie Lakes and Ten Mile Lake (within Premises boundary).	Dust suppression on roads and surface stabilisation in areas where dust emissions are expected to be significant.	Slight	Possible	Low	Applicant controls are suitable to limit dust. Impacts to surface water quality are expected to be minimal.	N/A
	Sediment	Overland runoff of sediment laden storm water impacting on surface water quality within Lake Sunshine, Beyondie Lakes and Ten Mile Lake (within Premises boundary).	Areas will not be disturbed until they are required to be used (to limit erosion); Disturbance of areas will be minimised where practicable; and The site will be inspected for erosion following significant rainfall events.				Given minor earth works are required for the pond construction and the Premises is located in an area with sandy soils and low rainfall, it is expected that sediment release and run off will be limited.	

**Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017).*

Table 7: Risk assessment - commissioning

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Commissioning of infrastructure (operation of plant and infrastructure)	Discharges of hypersaline water	Direct discharge via overland runoff and overtopping of ponds causing impacts to water quality in the lakes within the premises boundary (Lake Sunshine, Beyondie Lakes and Ten Mile Lake. Seepage and infiltration through salt to groundwater (SWL 7.9m 7.6km from Ten Mile Lake). Leaks or discharges from the brine pipelines onto land or salt lake	Refer to Applicant controls for discharges of hypersaline water in Table 8 below. The Applicant controls during the commissioning period align with the Applicant controls during the operational period.	Slight	Rare	Low	The receiving surface water and groundwater has similar chemical properties to the water within the holding ponds and any discharges are not expected to cause any changes to surface water or groundwater quality.	The authorisation of commissioning (operations) under the works approval presents a low risk to the environment. An Environmental Commissioning Phase of no more than four months has been included in the amended Works Approval conditions. Refer to Table 8 below that outlines the Applicants commitments to manage hypersaline water discharges during commissioning and operations. Construction aspects of the Applicants commitments have been included in the amended works approval as per Section 13.

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
	Sediment	Overland runoff of sediment laden storm water impacting on surface water quality within Ten Mile Lake (within Premises boundary)	Earthen bund maintained around the excess salt stockpile. This bund will disconnect the stockpile from the surface water of Ten Mile Lake; Areas will not be disturbed until they are required to be used (to limit erosion); Disturbance of areas will be minimised where practicable; and The site will be inspected for erosion following significant rainfall events.	Slight	Rare	Low	Given minor earth works are required for the pond construction and the Premises is located in an area with sandy soils and low rainfall, it is expected that sediment release and run off will be limited.	The Environmental Commissioning Phase will be limited to four months only. Refer to Table 8 below that outlines the Applicants commitments to manage sediment during commissioning and operations. Construction aspects of the Applicants commitments have been included in the amended works approval as per Section 13.

Table 8: Risk assessment – operation (information only)*

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Indicative Regulatory controls (licence))
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Abstraction activities (pumping of water); Containment of hypersaline water and excess salt stockpile; Vehicle movements; and Harvesting activities	Dust	Air/windborne pathway causing impacts to surface water quality within Lake Sunshine, Beyondie Lakes and Ten Mile Lake (within Premises boundary)	Dust suppression on roads and surface stabilisation in areas where dust emissions are expected to be significant.	Slight	Rare	Low	Limited dust generating activities are expected to occur during operations. The Applicant's proposed controls are expected to be sufficient at mitigating dust emissions.	Applicant proposed controls are expected to be sufficient and will be formalised through conditions of the licence
	Sediment	Overland runoff of sediment laden storm water impacting surface water quality within Lake Sunshine, Beyondie Lakes and Ten Mile Lake (within Premises boundary)	Earthen bund maintained around the excess salt stockpile (to contain runoff of saline water); Monitor stability of earthen bund and repair any cracks that arise; Site inspected for erosion following significant rainfall events; and Sediment quality monitoring around the excess salt stockpile and across Ten Mile Lake.				The earthen bund is expected to contain sediment from the salt stockpile. With the sandy soils and low rainfall, it is expected that sediment release and run off will be limited.	

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Indicative Regulatory controls (licence))
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
	Discharges of hypersaline water	Direct discharge via overland runoff and overtopping of ponds causing impacts to water quality in the lakes within the premises boundary (Lake Sunshine, Beyondie Lakes and Ten Mile Lake. Seepage and infiltration through salt to groundwater (SWL 7.9m) and discharge to lakes Leaks or discharges from the brine pipelines onto land or salt lake	<u>Evaporation ponds and excess salt stockpile</u> Ponds lined with a 1mm HDPE liner with a leak detection system; Ponds designed to maintain a 250mm freeboard; Pond liner and embankments will be inspected prior to filling with brine; A minimum 10cm base will be retained when harvesting salts to protect the liner; Regular harvesting schedule to ensure the salt floor level is maintained; Ponds designed to overflow into subsequent ponds; Final pond in the chain to include an emergency overflow; The stability of the embankments will be inspected on a regular basis during commissioning and operations; and Earthen bund maintained around the excess salt stockpile. The stability of the bund will be monitored and any cracks that may arise, repaired. <u>Brine pipelines</u> Leak detection and inspections;	Slight	Rare	Low	The receiving surface water and groundwater has similar chemical properties to the water within the holding ponds and any discharges are not expected to cause any changes to surface water or groundwater quality.	Applicant proposed controls are expected to be sufficient and will be formalised through conditions of the licence.

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Indicative Regulatory controls (licence))
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
			Pipelines constructed according to manufacturer specifications and fitted with leak detection system; Pipelines located off access road surfaces and if they need to cross the roads they will be buried; Water flows shut off if leaks are detected; Investigations will be conducted into the cause of any spills, and remedial actions will be taken to minimise the chance of reoccurrence; Spills response training to mitigate damage for site-based personnel; and Pipelines will be inspected regularly, especially during extreme heat or fire events.	Slight	Rare	Low	The receiving surface water and groundwater has similar chemical properties to the water within the holding ponds and any discharges are not expected to cause any changes to surface water or groundwater quality.	Applicant proposed controls are expected to be sufficient and will be formalised through conditions of the licence.

**The works approval that accompanies this Report authorises construction only. A licence is required for operations. ** Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017).*

11. Decision

The assessment of risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in Appendix 1. Based on this assessment, it has been determined that the amended works approval will be granted subject to the revised and additional conditions outlined in Section 13.

12. Consultation

Method	Comments received	DWER response
Direct interest stakeholder letter sent to: • Department of Mines, Industry Regulation and Safety; • Shire of Meekatharra; and • Shire of Wiluna	No comments were received	N/A
Application advertised on DWER website (27/06/2019)	No comments were received	N/A
Applicant notified of proposed works approval amendment (25/07/2019)	See Appendix 2	

13. Amendment

1. The Works Approval approved premises production or design capacity is amended by the deletion of the text shown in strikethrough and the insertion of the red text shown in underline below:

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
14	Solar salt manufacturing: premises on which salt is produced by solar evaporation	Not applicable	~~25 000~~ *90,000* tonnes per annual period

2. Table 1.2.1 of the Works Approval is amended as indicated by the insertion of the red text below:

Table 1.2.1: Construction Requirements[1]		
Document	**Parts**	**Date of Document**
Works Approval Application Form – KLP Salt Processing Facility.	All	22 October 2015
Works Approval Amendment Application – W5939/2015/1, Preston Consulting on behalf of Kalium Lakes Potash Pty Ltd.	All	14 April 2016
Infrastructure	***Design***	***Location***
Bund for excess salt stockpile	*Earthen bund capable of containing saline water and run off from the excess salt stockpile.*	*As per Figure 4*

Evaporation ponds	*Lined with a 1mm high density polyethylene (HDPE) liner.* *Leak detection equipment installed.* *Designed to maintain a minimum 250mm freeboard.* *Ponds designed to overflow into subsequent ponds.* *Final pond in the chain to include an emergency overflow.*	*As per Figures 1, 2, 3 and 5*
Brine pipelines	*Constructed according to manufacturer specifications and fitted with a leak detection system.* *Located off access road surfaces and if they need to cross the roads, they shall be buried.*	*Figures 2 and 3*

Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

3. The Works Approval is amended by the insertion of Condition 1.2.2 as indicated by the red text shown in underline below:

1.2.2
The Works Approval Holder must ensure that the Environmental Commissioning Phase is no greater than sixteen (16) calendar months for the evaporation ponds and no greater than four (4) calendar months for the process plant.

4. The Works Approval is amended by the insertion of Condition 2.1.3 as indicated by the red text shown in underline below:

2.1.3
The Works Approval Holder must submit to the CEO an Environmental Commissioning Report that:

(a) is received by the CEO within 60 calendar days of the completion of the Environmental Commissioning Phase and, where applicable, in conjunction with an application for a licence if not already submitted.

5. The Works Approval is amended by the insertion of Condition 3.1 as indicated in the red text shown in underline below:

3 Emissions

3.1

The Works Approval Holder must not cause any Emissions from the Works authorised through this Works Approval except for general Emissions described in Column 1 of Table 3.1, subject to the exclusions, limitations or requirements specified in Column 2, of Table 3.1.

Table 3.1: Authorised Emissions table

Column 1	Column 2
Emission type	**Exclusions/Limitations/Requirements**
General Emissions	
Emissions which arise from undertaking the Works set out in Table 1.2.1	Emissions excluded from General Emissions are: • Unreasonable Emissions; or • Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or • Discharges of Waste in circumstances likely to cause Pollution; or • Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or • Emissions or Discharges which do not comply with an Approved Policy; or • Emissions or Discharges which do not comply with prescribed standard; or • Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or • Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental Protection (Unauthorised Discharges) Regulations 2004.

6. The Works Approval is amended by the insertion of Conditions 4.1 and 4.2 in the red text shown in underline below:

4 Record-keeping

4.1

The Works Approval Holder must maintain accurate Books including information, reports and data in relation to the Works and the Books must:

(a) be legible;

(b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;

(c) be retained for at least 3 years from the date the Books were made;

(d) be available to be produced to an Inspector or the CEO.

4.2

The Works Approval Holder must comply with a Department Request within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

7. Definitions of the Works Approval is amended by the insertion of the red text shown in underline below:

'Environmental Commissioning Phase' means the period of operation where the equipment is first brought online and permits the Works Approval Holder to have emissions from the premises. It commences after the Works have been completed and when certification is provided.

'Environmental Commissioning Report' means a report that:

(a) documents the environmental commissioning activities undertaken;
(b) demonstrates the premises can operate to the specification detailed in the works approval application;
(c) demonstrates all environmental conditioning activities have concluded; and
(d) confirms emissions and discharges from the premises meet the required specifications.

8. The Works Approval is amended by the insertion of the following Figures 1, 2, 3, 4 and 5.

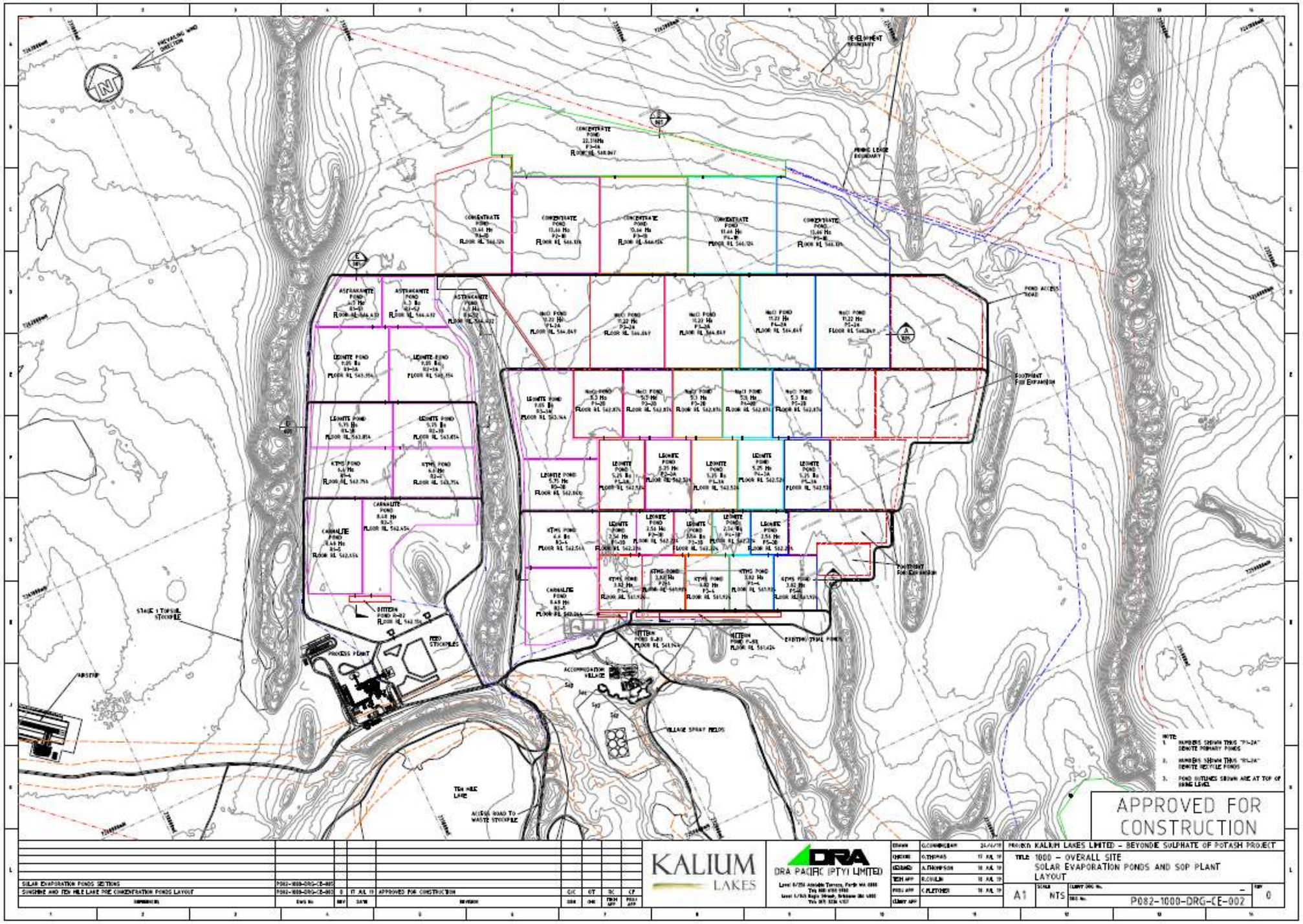
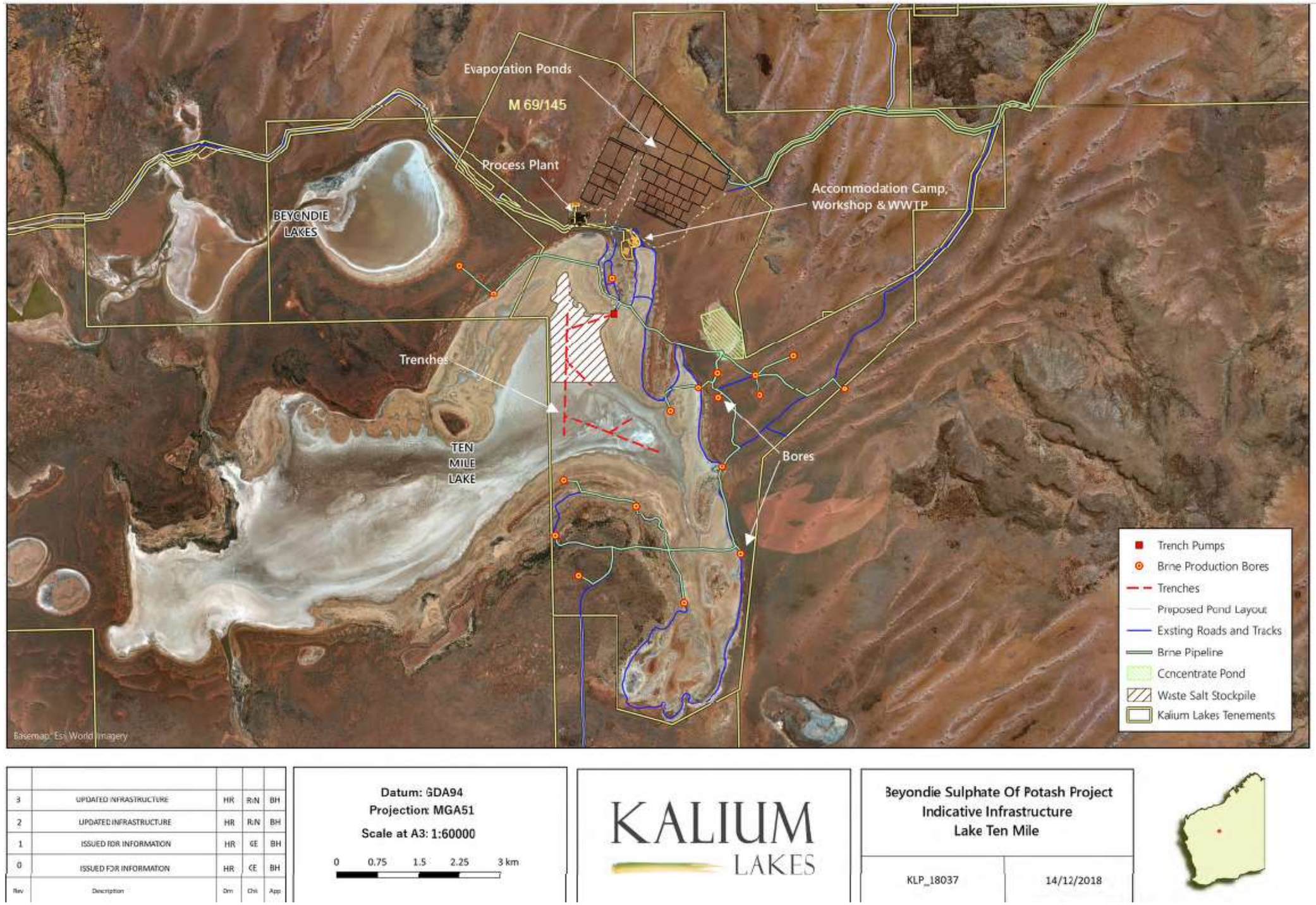


Figure 1: Evaporation pond layout



Rev	Description	Drn	Chk	App
3	UPDATED INFRASTRUCTURE	HR	RJN	BH
2	UPDATED INFRASTRUCTURE	HR	RJN	BH
1	ISSUED FOR INFORMATION	HR	GE	BH
0	ISSUED FOR INFORMATION	HR	CE	BH

Datum: GDA94
Projection: MGA51
Scale at A3: 1:60000
0 0.75 1.5 2.25 3 km

KALIUM LAKES

Beyondie Sulphate Of Potash Project
Indicative Infrastructure
Lake Ten Mile

KLP_18037 | 14/12/2018

Figure 2: Ten Mile Lake section infrastructure.

2	ISSUED IOR INFORMATION	HR	RvN	BH
1	ISSUED FIR INFORMATION	HR	RvN	BH
0	ISSUED FOR INFORMATION	HR	GE	BH
Rev	Description	Drn	Chk	App

Datum: GDA94
Projection: MGA51
Scale at A3 1:60000
0 0.75 1.5 2.25 3 km

KALIUM LAKES

Beyondie Sulphate Of Potash Project
Indicative Infrastructure
Sunshine Lake

KLP_18038 | 26/11/2018

Figure 3: Lake Sunshine section infrastructure

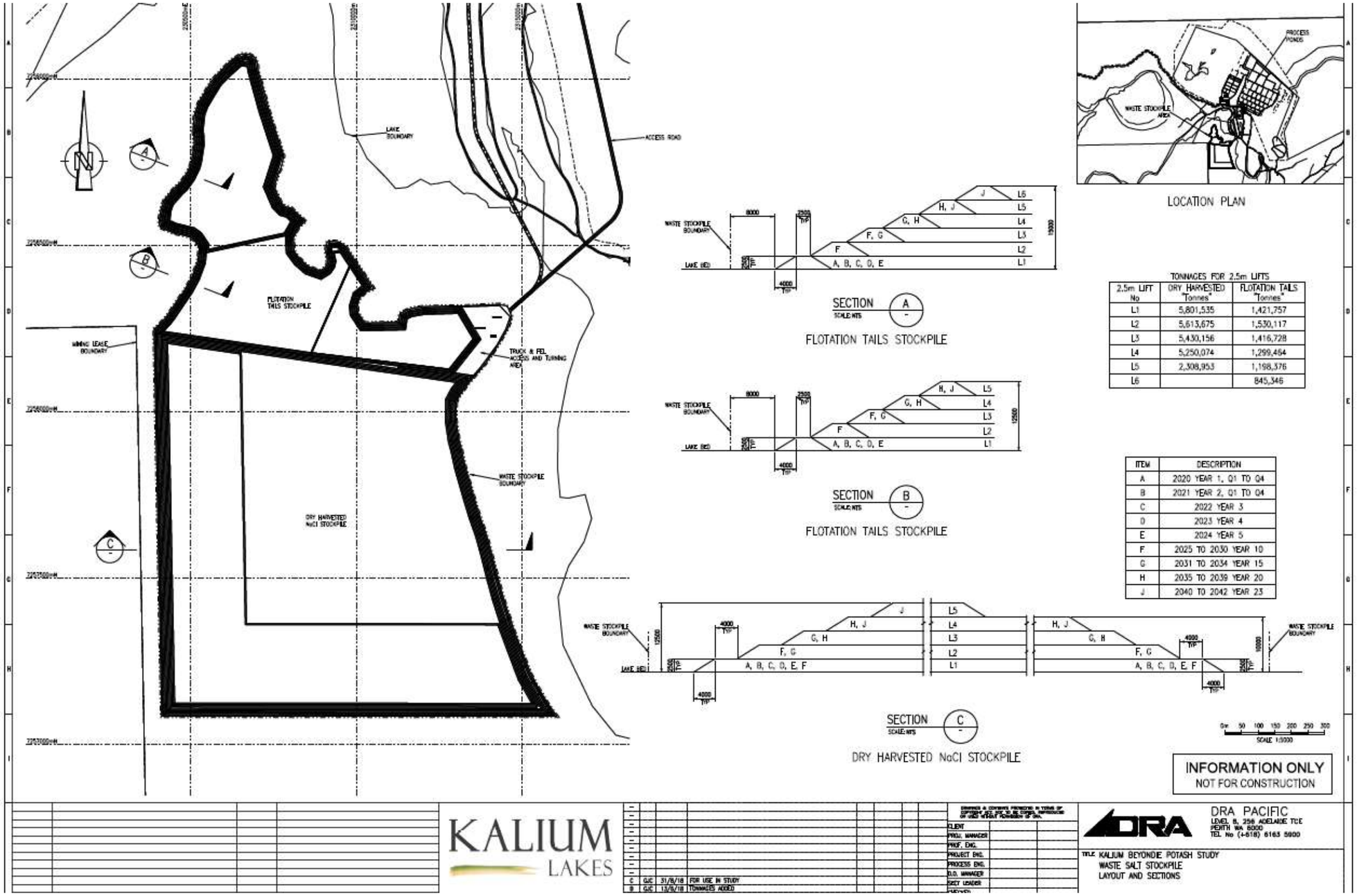


Figure 4: Excess salt stockpile location and layout

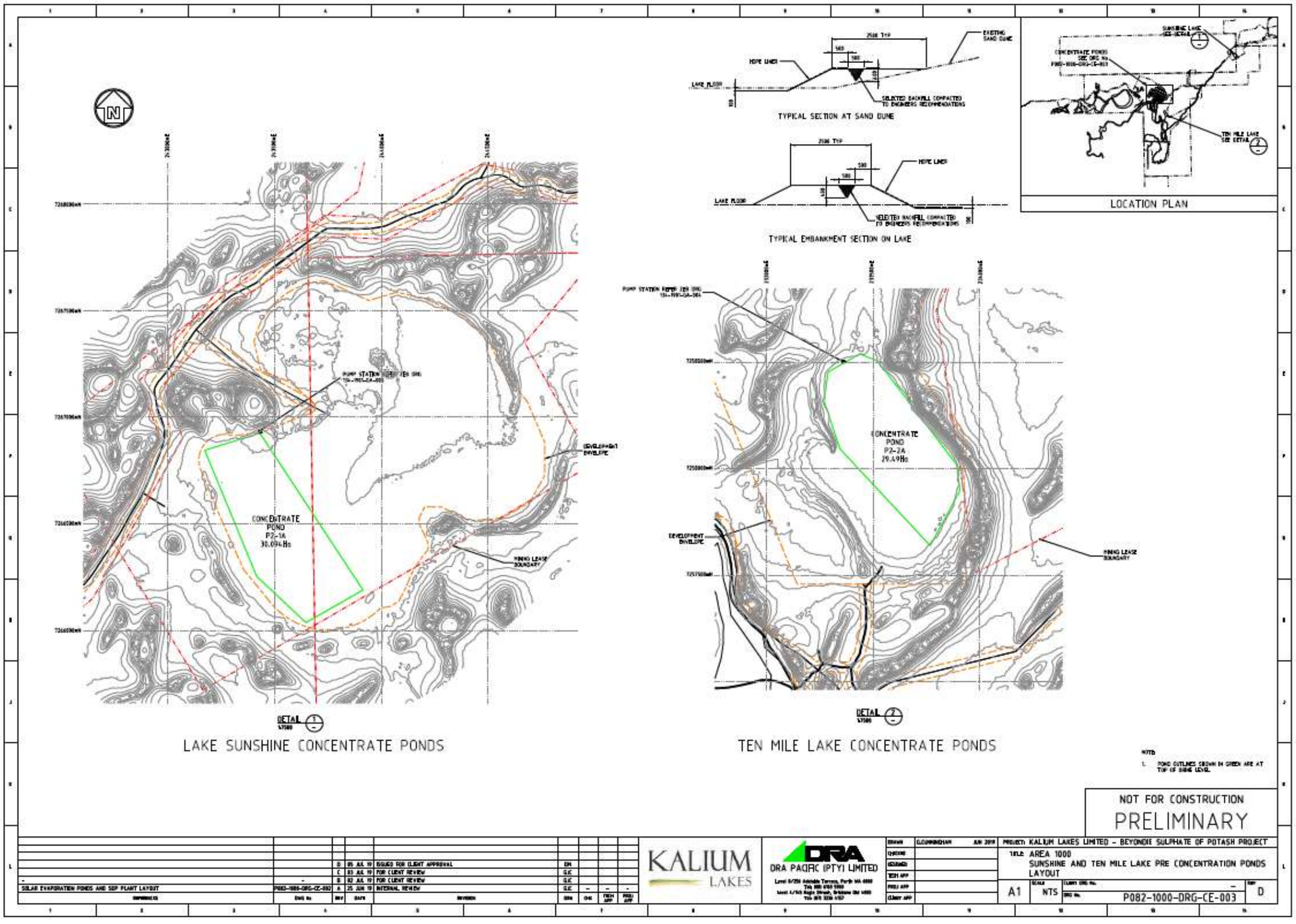


Figure 5: Lake Sunshine and Ten Mile Lake Concentrate pond layouts

14. Works Approval Holder's comments

The Works Approval Holder was provided with the draft Amendment Notice on 25 July 2019. Comments received from the Works Approval Holder have been considered by the Delegated Officer as shown in Appendix 2.

15. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of several factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the approval under the EP Act.

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Beyondie Project Kalium Lakes- Works Approval Amendment Application form	The Application	DWER Records (A1706383)
2	Beyondie Project Works Approval Amendment- Supporting Document		DWER Records (A1706389)
3	Beyondie Project Works Approval Amendment - Attachment 8 Kalium Lakes Beyondie ERD Draft		DWER Records (A1706390)
4	Beyondie Sulphate of Potash- Works Approval Amendment Application form (revised design to align with EPA presentation) and Supporting Document		DWER Records (A1758346)
5	• Guidance Statement: Regulatory Principles (July 2015) • Guidance Statement: Setting Conditions (October 2015) • Guidance Statement: Decision Making (February 2017) • Guidance Statement: Risk Assessment (February 2017) • Guidance Statement: Environmental Siting (November 2016) • Guideline: Industry Regulation Guide to Licensing (June 2019)	N/A	Accessed at www.dwer.wa.gov.au

Appendix 2: Summary of Works Approval Holder comments

The Works Approval Holder was provided with the draft Amendment Notice on 25 July 2019 for review and comment. The Works Approval Holder responded on 29 July 2019.

Condition	Summary of Works Approval Holder comments	DWER response
N/A	a) Groundwater Licence numbers confirmed. b) Revised concentrator lake footprints in accordance with MS 1098*. c) Minor revisions to evaporation pond layouts for operational purposes (still within the approved disturbance footprint).	Comments are noted and revised footprints and layouts (Figures 1 and 5) have been incorporated into this Amendment Notice.
1.2.2	d) Confirmation that 4 months of environmental commissioning pertains specifically to commissioning of the purification plant and does not imply that production must commence within 4 months of pond construction e) Ponds will be constructed over a 12-15 month period and each individual pond will be progressively filled with brine as soon as it is completed to: i. weigh the liner down ii. commence crystallisation of the 100mm salt floor (liner protection); and iii. commence crystallisation of salt so it can be harvested in time to feed the purification plant. Without this the purification plant is not able to be commissioned.	Comments are noted and this condition has been revised to include a commissioning period of no greater than 16 months for the evaporation ponds and a commissioning period of no greater than 4 months for the process plant. The definition of commissioning has been updated from “plant” to “equipment” to denote commissioning for both the evaporation ponds and the process plant. Commissioning information has been updated to reflect the comments.

Note*: Footprints of the concentrator ponds have been updated based on the results of surveys to identify conservation significant flora species required under MS1098.