Mining application and proposal

Date	12 January 2023
Version number	V2.0
Name of applicant(s)	PH8 Landholdings Pty Ltd
Name of proposed operation	Yorke Peninsula Lime Sand Mine
Mineral claim number	MC 4555
Commodity type	☒ Extractive minerals ☐ Industrial minerals ☒ Industrial minerals (prescribed purpose)
Mineral claim size (ha)	55 Hectares
Proposed lease application size (ha) (If applying over a reduced area)	55 Hectares
Contact details for application	Name: Stewart Lang Phone: 0458 121 314 Email: langlanglang@hotmail.com Name: Joe Rossi Phone: 0447 301 820 Email: joe@bauhiniagroup.com.au

Section 1: Description of the existing environment

1. Existing environment	
1.1 Location	The nearest town Warooka is located 25 kilometres from the mineral claim. The distance from the mineral claim to the nearest house is approximately 1,750 metres to the west.
1.2 Land use	The local council area is: Yorke Peninsula Council or ☐ Mineral claim is not located within a council area. The zoning as defined by the planning and design code, or relevant council development plan is: Rural (Z5404) - Ru The land use (historical and current) for the application area is: Agriculture (cropping). The property also includes a bottling facility for PH8 Natural Alkaline Water, which is owned by the proponent. The surrounding land use is: Agriculture (cropping).
1.3 Land access	Mineral claim is located on free-hold land ☒ Yes ☐ No Certificate of title details: CT 6057/876 ☒ There are no land restrictions/easements listed on the title. or The following land restrictions/easements are listed on the property title: Click to enter text. ☒ There is no exempt land within the mineral claim. or The following exempt land has been identified within the mineral claim: Nil. Provide details of any waivers of exemption(s) and/or status of negotiations of any waivers: Not applicable. Provide details of any native title land, if relevant: As the land is freehold, native title does not apply.

1.4 Heritage	A search of the Register of Aboriginal Sites and Objects has been included in Appendix 7. ☐ There are no registered Aboriginal, non-Aboriginal or geological heritage sites located in or adjacent to the mineral claim. ☐ Heritage site(s) have been identified within or adjacent to the mineral claim.
1.5 Groundwater	The existing depth to groundwater is estimated at 10.6 metres below ground level. The buffer between groundwater and the lowest proposed depth of mining is estimated at 5.6 metres. Evidence to justify this is provided below: A review of nearby groundwater well data from WaterConnect was undertaken. Three wells with water level data were located within 3km of the Site (refer **Attachment 1**). 6327-328 is located approximately 2.3km east north-east of the Site boundary. The water level was measured on 27 October 1977 and returned a Standing Water Level (SWL) of 10.59m and a Reduced Standing Water Level (RSWL) of 66.23m. 6327-553 is located 1.3km east of the Site boundary. The water level was measured on 11 February 2010 and returned a SWL of 12m and a RSWL of 63.82m. 6327-355 is located approximately 1.0km south-west of the Site boundary. The water level was measured on 21 February 1978 and returned a SWL of 14.5m and a RSWL of 40.72m. The topography of the area slopes down from north to south. The SWLs from the north-eastern to south-western ends of the Site are similar but the available data suggests that the distance to groundwater from the surface increased towards the south. The most conservative depth to groundwater of 10.6m has therefore been used for this assessment, and the shortest depth to groundwater is likely to occur at the northern end of the Site. The elevation at the northern end of the Site is between 79m and 80m AHD, and groundwater is expected to be at approximately 66m AHD, therefore the groundwater may be 14m deep in the north and deeper still in the south. As mining is proposed to 5m below the surface, the most conservative estimate on the buffer between mining and groundwater is 5.6m.
1.6 Weeds and pests	The following weeds and pests currently exist on the mineral claim: During a site inspection conducted on 16 November 2022, the environmental weeds observed on, or nearby, the MC 4555 area are as follows: **Onion weed (Asphodelus fistulosus)** Observed outside of the MC 4555 area on the western side (refer **Plate 1 of Appendix 8**). **Horehound (Marrubium vulgare)** Observed across the MC 4555 area with young growth returning after cropping (refer **Plate 2 of Appendix 8**). **African boxthorn (Lycium ferocissimum)**

	Observed growing outside MC 4555 on the western side and one large bush underneath one of the Eucalyptus trees on the MC 4555 area (refer **Plate 3 of Appendix 8**). White and conical snails are present on the southern Yorke Peninsula and can cause damage to agricultural crops. The South Australian Research and Development Institute (SARDI) soil science team have been engaged over the mining proposal and have identified the exportation of snails as a potential risk for the site. SARDI have suggested that a snail management plan should be developed for the Site to ensure snails are not present in the lime sand products being distributed to other farms. PH8 Landholdings will therefore prepare a Snail Management Plan in consultation with SARDI to be attached to the Program for Environment Protection and Rehabilitation (PEPR). As the property that MC 4555 is located on is certified organic, no chemical controls are proposed to control snails at the Site and management will focus on preventative and physical control strategies.
1.7 Native Vegetation	☐ Native vegetation does not exist within the mineral claim or The following native vegetation exists within the mineral claim: A stand of native Tea Trees (Melaleuca sp.) and three isolated Gum Trees (Eucalyptus sp.) are present within the tenement (refer **Plates 4 – 6 of Appendix 8**). No clearance is proposed for mining operations and a minimum five (5) metre buffer will be left between mining and the driplines of the vegetation.
1.8 Native fauna	The following native fauna may be present in the area: A Department of Agriculture, Water and the Environment, EPBC Protected Matters Search (refer **Appendix 6 - EPBC Protected Matters Report**) was undertaken on 11 November 2022 for the MC 4555 area. The search identified that (1) listed ecological community, 14 threatened species and 13 migratory species may, or are likely to occur in the area. The mining area consists predominantly of cropping land and no habitat disturbance is proposed by mining operations.

Section 2: Description of proposed mining operations

2. Proposed mining operations	
2.1 Resource description, production and mine life	Following is a geological description of the resource: The stratigraphic description as described in the 100K Geology - map unit symbology on SARIG is 'Holocene aeolian (windblown) sediments'. A pilot pit dug within the MC 4555 area has found the lime sand is present to depths of approximately 5 metres (refer **Plate 7 & 8 of Appendix 8**). At the base of the pilot pit is a hard limestone layer. Should pockets of hard limestone be present within the proposed mining areas, this material may be extracted and processed for use as extractives minerals. The resource/commodity from the SA Commodities List to be extracted and sold is: • Lime sand (industrial mineral) • Limestone (construction material). Please note that the target resource is Lime sand, but Limestone has also been listed as it may be encountered within the mining area. Statement of the estimated resource or reserve and details of the basis of this estimate: The estimated resource on MC 4555 is 3,421,471 tonnes. The estimate is combined for both Lime sand and any Limestone should it be encountered. This estimated resource was calculated as follows: • Total mining area = 515,615m^2 • Net mining area (no batters) = 440,191m^2 • Net mining area (batters 1v:5h) = 73,959m^2 • Resource depth = 4.7m (5.0m – 0.3m for topsoil) • Resource volume = 2,138,419m^3 • Volume to weight ratio = 1.6 • Total resource = 2,138,419m^3 x 1.6 = 3,421,471 tonnes. The mined resource will be used for the following products, end use: Agricultural lime sand (and potentially limestone for extractive purposes). The estimated annual production is 20,000 tonnes per annum. The estimated mine life is 171 years.
2.2 Processing	Following is a description of proposed processing: The lime sand resource appears to be in a condition that does not require any additional processing. A static ‘grizzly’ screen may be required to remove any rocky material from the sand. Should significant rocks be encountered during mining, a mobile screening plant may be incorporated into the mining process to separate out coarser material.

	Should harder limestone be encountered, mobile crushing and screening plant may be incorporated into the mining process to create products suitable for road base. Any processing will be undertaken within the staged mining area by a suitably qualified contractor. Product stockpiles will be maintained within the current staged mining area. An internal haul road will be maintained along the centre of the tenement and will allow for the haul truck to be loaded within the mining area and transport material off the western side of the tenement to the Site Access Point (refer **Attachment 2**). The road will progress with the stages of mining up to Stage 12, and then will be rehabilitated in sections from Stage 13 onwards.
2.3 Product transport	The estimated size of haulage trucks is: Product will be hauled using a 25-tonne truck with a 25-tonne trailer. The current truck weight rating on Lower White Hut Road only allows the 25-tonne truck to be used but it is understood that the road may be gazetted in the future to allow for the 25-tonne trailer to be added. Lower White Hut Road is already utilised for agricultural trucking and for transport of product from the PH8 Water Bottling Plant. The estimated truck movements per operational day is a maximum of six (6). As per the Location Plan (refer **Attachment 1**), Mine trucks are proposed to access the site via Lower White Hut Road. The majority of truck movements from the Site are likely to occur eastbound on Lower White hut Road towards Warooka.
2.4 Water use	The amount of water required for mining operations is estimated to be only what is required by staff as drinking water. No water is expected to be needed for any processing. Should internal haul road watering be required, water will be sourced from the PH8 spring water plant on the property. The plant is supplied by a groundwater bore on the property. It is estimated that no more than 20kL of water would be required for dust suppression per year. Water will be sourced from: The PH8 spring water plant on the property.

2.6 Mine staging and progressive rehabilitation

A staged mining plan showing how mining and progressive rehabilitation will occur over the life of the mine has been included as **Attachment 2.**

The plans and detail provided below demonstrate that there is a reasonable prospect that the land in respect of which the lease is sought could be effectively and efficiently mined.

The proposed final depth of mining below the surrounding ground level is not greater than 5 metres and the height of the sand dune or surface outcrop above the surrounding land not greater than 10 metres.

The proposed maximum area of un-rehabilitated land will be less than 3 hectares at any one time.

Following is a description of how mining will occur over the life of the mine using a staged approach:

Staged mining and rehabilitation plans
A 24-staged mining and rehabilitation plan has been developed for MC 4555. Each stage is approximately two (2) hectares in area, and only one stage will be open for mining at any one time.

The plans provided in **Attachment 2** show that mining will commence in Stage 1, expanding out from the pilot pit located at the western end of MC 4555. Mining will then continue from Stage 1 to Stage 2 and so on in the numbered sequence through to Stage 24.

Overburden
No overburden is present between the topsoil and lime sand resource.

Topsoil management
Topsoil is shallow at approximately 0.1 – 0.2 metres and does not differ significantly in visible appearance from the lime sand resource below it (refer **Plate 9 of Appendix 8**). To ensure enough growing medium is provided for the rehabilitated landform, the top 0.3m of the surface will be stripped as topsoil.

Topsoil from Stage 1 will be stripped and placed along the Stage 24 boundary ready for the final rehabilitation of the Site. Topsoil from Stage 2 will then be stripped and directly replaced over the final Stage 1 landform. Once topsoil respreading is completed, Stage 1 will be available for cropping during the following season.

Direct topsoil replacement will then continue (Stage 3 topsoil used for Stage 2 rehabilitation and so on). Stage 24 topsoil will be used for rehabilitation of Stage 23 and Stage 24 will be rehabilitated using the stockpiled topsoil from Stage 1.

Following is a description of the proposed post mining land use and landform:
The post-mining land use will be returning the land to agriculture (cropping).

The final pit design incorporates shallow batters of 1 vertical to 5 horizontal (1v:5h) to ensure the batters are not too steep for farming equipment to traverse safely. The final pit floor will be reduced to five (5) metres below the natural ground level at the tenement boundary. The natural ground level within the mining area is undulating, and as shown in **Attachment 3** and **Attachment 4**, mining operations will create a smoother landform sloping downwards from north to south with the natural landscape.

Native vegetation existing on the MC 4555 will be preserved. As shown in **Attachment 4**, a five (5) metre buffer will be maintained between the pit edge and the vegetation dripline. A 1v:5h batter will be established between the natural land surface where the vegetation is located and the pit floor consistent with the outer batters of the mining area.

Staged progressive rehabilitation is planned in the following sequence to achieve the post mining landform design and allow for the proposed land use:
Staged rehabilitation will occur in accordance with the staged mining and rehabilitation plans featured in **Attachment 2**.

The first stage of rehabilitation will occur with the completion of mining in Stage 1. This will involve the replacement of topsoil from Stage 2 of the final mining area and then sowing of the area for cropping in the following season.

Each stage of the mine plan is the same size at two (2) hectares. This will ensure that the amount of topsoil stripped ahead of mining for each stage will be sufficient for the rehabilitation of the previous stage.

Progressive rehabilitation will occur in numbered sequence as shown in the mining and rehabilitation plans in **Attachment 2**, and the success of the rehabilitation will be continuously reviewed following each cropping season to ensure the rehabilitation methods are effective. The first review is planned within 12-months of the rehabilitation of Stage 2 (review of Stage 1 and Stage 2 rehabilitation performance).

The final rehabilitation will involve the respreading of the stockpiled topsoil from Stage 1 across the Stage 24 area. The area will then be sown with crops in the following growing season. As progressive rehabilitation methods will have been refined over the previous 23 rehabilitation efforts, the tenement is expected to be ready for surrender shortly after the Stage 24 rehabilitation.

The continuous progressive rehabilitation will allow for any unsatisfactory early rehabilitation efforts to be rectified prior to mining being completed at the tenement.

2.7 Hours of operation	
☒ Regular/continuous/ongoing Mining will occur on a regular/ continuous/ ongoing basis with the following operating hours: Monday – Friday: 7am - 6pm Saturday: 7am - 3pm Sunday: No Mining Public holidays: No Mining	☐ Campaign Mining will occur on a campaign basis within the following operating hours: Monday – Friday: Not applicable. Saturday: Not applicable. Sunday: Not applicable. Public holidays: Not applicable.

Section 3: Consultation

3. Consultation	
3.1 Landowner consultation	☒ I, the applicant, am also the landowner or ☐ I, the applicant, am not the landowner **Appendix 1** provides details of landowner consultation.
3.2 Adjacent Landowner Consultation	☒ There are no residences located on property adjacent to the mineral claim or ☐ Residences are located on property adjacent to the mineral claim **Appendix 2** provides details of consultation with adjacent landowners.
3.3 Stakeholder Consultation	The following additional stakeholders were consulted: South Australian Research and Development Institute (SARDI). **Appendix 3** provides full details of additional stakeholder consultation.

Section 4: Management of defined environmental impacts

This section describes Environmental outcomes that are expected to occur and draft measurement criteria as outlined in the *Mining Act 1971*. Control and management strategies are also proposed to achieve the environmental outcomes.

4.1 Heritage	
Outcome No damage, disturbance or interference to Aboriginal or non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation.	**Measurement criteria** Production records and Mine Logbook will demonstrate that upon discovery within the tenement of any possible Aboriginal or Non-Aboriginal: - sites of significance - objects - remains that work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.
Control and management strategies **Mandatory strategies:** All contractors and employees operating with the tenement will understand their obligations in regards to the *Aboriginal Heritage Act 1988* with regards to the discovery of Aboriginal sites, objects or remains and the *Heritage Places Act 1993* with regards to the discovery of places or objects of significance. **Provide any additional strategies:** Nil.	

4.2 Traffic	
Outcome No traffic accidents involving members of the public and mine related traffic that could have been reasonably prevented by the Tenement Holder.	**Measurement criteria** All traffic accidents involving the public at mine access points are recorded in Mine Logbook. All accidents will be investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the accident could not have been reasonably prevented by the Tenement Holder.

Control and management strategies

Mandatory strategies:

All operators will be made aware of the dangers of mine machinery and mine vehicles entering public roads during the site induction.

Optional strategies:

Road signs will be displayed at mine entry and exit points, warning the public of the dangers of large trucks entering and exiting the tenement. ☐ Yes ☒ No

Vehicles and machinery will be parked inside the tenement, not along road verges. ☒ Yes ☐ No

Provide any additional strategies:

Nil.

4.3 Public safety (construction and operation of the mine)		
Outcome No public injuries and/or deaths resulting from unauthorised entry to the Land that could have been reasonably prevented.	**Measurement criteria** All public injuries and/or deaths resulting from unauthorised access to the mine site are recorded in Mine Logbook and investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder.	
Control and management strategies **Mandatory strategy:** Access to the Tenement will be controlled through fencing and gates will be locked when not operational. **Optional strategy:** Site is sign posted making the public aware of hazards associated with the mine. **Provide any additional strategies** The pit will not have any vertical batters during the operational stages to prevent any fall risks. Surveillance cameras are deployed on the PH8 Water Processing Plant buildings and monitor the internal access road leading to MC 4555.		☐ Yes ☒ No

4.3a Public safety (post mine completion)	
Outcome The risks to the health and safety of the public so far as it may be affected by mining operations, are as low as reasonably practicable.	**Measurement criteria** Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan.
Control and management strategies (post mine completion) **Mandatory strategies:** Mining operations will be progressively rehabilitated as per Mining Plan. All plant and equipment will be removed from the site. **Optional strategies:** All slopes will be battered to a slope ratio of at least 1:3 (18.4 Degrees). **Provide any additional strategies** Nil.	☒ Yes ☐ No

4.4 Weeds and pests	
Outcome No introduction of new species of weeds, or pests (including feral animals), nor increase in abundance of existing weed or pest species on the Land.	**Measurement Criteria** Mine Logbook records of annual inspections (in Spring) by the Tenement Holder will demonstrate no introduction of new weeds or pests and no increased abundance of existing weeds and/or pests.
Control and Management Strategies (Post Mine Completion) **Mandatory Strategy:** Weed spraying and pest animal control will be conducted by a suitably experienced person as required. **Provide any additional Strategies:** Progressively rehabilitated areas will be returned to cropping which will incorporate weed control activities. Topsoil is stripped to a depth of 0.3m and remains on the property. A buffer of 5-metres is left between the stripped topsoil area and the mining area. Vehicles used in topsoil stripping and rehabilitation are thoroughly washed at the completion of the activities. Mining equipment and haul trucks use well defined access tracks to avoid entering areas where snails may be present. Regular inspections of the product stockpiles will be undertaken to ensure snails are not present. Any affected stockpiles/areas will be used for rehabilitation. Operations will follow the Snail Management Plan that will be prepared in consultation with SARDI for the PEPR.	

4.5 Soil	
Outcome The existing (pre-mining) soil quality and quantity is maintained.	**Measurement Criteria** Annual inspection records in the Mine Logbook of all soil stockpiles will demonstrate that all stockpiles are less than 2 metres high and are maintained at the height when established. Mine Logbook records will demonstrate that effective measures were undertaken to prevent snails from being transported off the tenement within products related to mining operations.

Control and Management Strategies (Post Mine Completion)	
Mandatory Strategies:	
Soil stockpiled to a maximum of 2m in height to preserve seed stock and micro-organism function.	
Soil stockpiles vegetated to prevent erosion and retain soil quality.	
Optional Strategies:	
Prior to mining, the amount of soil required for successful rehabilitation will be calculated.	☒ Yes ☐ No
Machinery will only be refuelled in a bunded area in accordance with EPA requirements.	☒ Yes ☐ No
Provide any additional Strategies	
The staged mining and rehabilitation plan includes direct replacement of topsoil and only topsoil from the Stage 1 will require stockpiling.	

4.6 Waste	
Outcome All commercial, industrial and domestic waste is disposed of in accordance with relevant legislation.	**Measurement Criteria** Waste disposal receipts demonstrate that all commercial, industrial (including contaminated soil) and domestic waste within the tenement was disposed of offsite in accordance with *Environment Protection Act 1993* requirements.
Control and Management Strategies **Mandatory Strategy:** Any general rubbish brought onto the tenement by workers or contractors will be removed on a daily basis or will be stored in rubbish bins and disposed of offsite at an EPA licensed waste facility. **Provide any additional Strategies:** The property is locked when unattended and has video surveillance to protect against illegal dumping.	

4.7 Noise		
Outcome No public nuisance impacts from noise as a result of mining operations.	**Measurement Criteria** Records from Mine Logbook will demonstrate that any noise complaints received were resolved with the complainant within 48 hours (or other time as agreed with Mining Regulator). If complaints are not resolved the Tenement Holder will conduct noise monitoring at the sensitive receptor to demonstrate noise levels comply with the *Environment Protection (Noise) Policy 2007*.	
Control and Management Strategies **Optional Strategies:** Mining operations will only be carried out between the hours of 7am and 6pm Monday to Saturday Trucks will be advised to avoid using air brakes in built up areas. **Provide any additional Strategies:** Nil.		☒ Yes ☐ No ☒ Yes ☐ No

4.8 Air quality	
Outcome No public health and/or nuisance impacts from dust generated by mining operations.	**Measurement Criteria** Records from Mine Logbook will demonstrate that any dust complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator). If complaints are not resolved to the satisfaction of Mining Regulation, air quality monitoring is to occur at locations, and using methods, as agreed with the Mining Regulator, to demonstrate: • PM10* ground level concentrations leaving the tenement when measured over a 24-hour period (midnight to midnight) comply with the *Environment Protection (Air Quality) Policy 2016,* **and/or** • dust deposition leaving the tenement does not exceed 4g/m^2/month. *Particulate matter with an aerodynamic diameter of ten micrometres of less

Control and Management Strategies

Mandatory Strategies:

Rehabilitation will occur progressively in accordance with the Mining Plan.

All loaded trucks leaving the Tenement will be covered.

Mining will not occur during extreme wind days (i.e. dry conditions and wind speeds over 50km/hr)

Haul roads will be watered when required to control dust.

Provide any additional Strategies:

Nil.

4.9 Surface water	
Outcome No adverse impact to surface water quality and water dependent ecosystems on or off the Land as a result of contamination and sedimentation caused by mining operations.	**Measurement criteria** Photographic records in the Mine Logbook, following rainfall events resulting in run-off, will demonstrate that surface water coming into contact with mining operations is retained within the tenement.

Control and management strategies	
Mandatory strategies:	
Rehabilitation will occur progressively in accordance with the Mining Plan.	
Any material amount of surface water impacted by mining operations will be captured and retained within the tenement.	
Optional strategies:	
Mining operations will not capture or retain any material amounts of surface water which would require management.	☒ Yes ☐ No
Clean surface water runoff will be diverted around the working area	☐ Yes ☒ No
A sump will be created to capture and hold surface water within the pit.	☐ Yes ☒ No
Provide any additional strategies:	
Due to the high permeability of the lime sand, surface water is expected to infiltrate into the ground and in-pit surface water management is not anticipated to be required.	

4.10 Visual amenity	
Outcome The form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.	**Measurement Criteria** Annual site inspection records in the Mine Logbook demonstrate that: • the maximum area of un-rehabilitated land at any one time is 3 hectares; and • progressive and final rehabilitation has been completed in accordance with the approved Mining Plan.
Control and Management Strategies **Mandatory Strategies:** Mining operations will be progressively rehabilitated as per the Mining Plan. The maximum area of un-rehabilitated land will be less than 3 hectares at any one time. **Provide any additional Strategies:** The majority of the MC 4555 area is effectively screened by the roadside vegetation from Lower White Hut Road.	

4.11 Post mining land use	
Outcome All land disturbed by mining operations is rehabilitated to achieve the post mining land use.	**Measurement Criteria** Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan to achieve the approved post mining land use.

Control and Management Strategies

Mandatory Strategies:

Mining operations will be progressively rehabilitated to achieve post mining land use as per Mining Plan.

Optional Strategies:

The land will be revegetated with:

• native vegetation	☐ Yes ☒ No
• crops	☒ Yes ☐ No
• pasture	☐ Yes ☒ No
• as agreed with the landowner *Not applicable* (please specify).	☐ Yes ☒ No

Provide any additional Strategies:

Progressive rehabilitation success will be evaluated 12-months after the completion of the rehabilitation of Stage 2 to ensure that the rehabilitation methods are effective in re-establishing cropping land.

4.12 Groundwater	
Outcome No adverse impact to groundwater caused by mining operations.	**Measurement Criteria** Annual inspection or survey (as agreed with Mining Regulator) of the pit floor recorded in the Mine Logbook will demonstrate that mining operations do not exceed the mine depth levels stated in the Mining Plan.
Control and Management Strategies **Mandatory Strategy:** No mining to be undertaken within 2 metres of the estimated highest seasonal groundwater level. **Provide any additional Strategies:** Mining operations to be undertaken in accordance with the Mining and Rehabilitation Plans.	

4.13 Protection of Third Party Property, Infrastructure and Adjacent Land		
Potential impacts from mining on third party property and Infrastructure, including adjacent land use, were identified as a concern during stakeholder consultation. ☐ Yes ☒ No (No further action required in this table)		
Outcome No unauthorised damage (including that caused by fire) to adjacent public or private property, infrastructure and adjacent land use.	**Measurement Criteria** Any complaints of unauthorised damage to adjacent public or private property, infrastructure or impact to adjacent land use from mining operations will be recorded in the Mine Logbook at time of complaint and investigated within 7 days (or other time as agreed with Mining Regulator) to show that the mine operator did not cause the damage or impact through mining operations.	
Control and Management Strategies **Mandatory Strategies:** Machinery will not be operated on the tenement during total fire ban days. **Optional Strategies:** A buffer of *Not applicable.* metres will be observed around any third party infrastructure within the Tenement. **Provide any additional Strategies:** Nil.		☐ Yes ☒ No

4.14 Caves	
The mineral claim is located in an area of known caves ☐ Yes ☒ No (No further action required in this table)	
Outcome No unauthorised damage to caves of significance as a result of mining operations. *<u>Note:</u> For the purposes of this outcome the term "cave" includes any underground opening or cavity with a cross sectional area greater than 0.25m^2, and a minor axis measurement greater than 0.4 metre.*	**Measurement Criteria** Mine Logbook records demonstrate that work ceased on discovery of a cave and a suitably qualified expert assessed the significance of the cave to the satisfaction of the Mining Regulator. If the assessment concludes that the cave is significant, then records must demonstrate that measures have been implemented to ensure the cave continues to be protected from further damage. Mine logbook records will demonstrate that work recommenced only after approval from Mining Regulation.
Control and Management Strategies **Mandatory Strategies:** All operators will be made aware of their obligations regarding caves. **Provide any additional Strategies:** Nil.	

4.15 Native Vegetation

Native vegetation is located within the mineral claim

☒ Yes ☐ No (No further action required in this table)

Outcome	**Measurement Criteria**
No loss of abundance and/or diversity of native vegetation on or off the tenement through; • clearance, • dust/contaminant deposition, • fire, • other damage, unless a significant environmental benefit (SEB) has been approved in accordance with the relevant legislation.	*If native vegetation is retained:* Annual site survey/photographic evidence (stored in the Mine Logbook) will show no clearance of native vegetation identified and shown in the Mining Plan. ~~**and/or**~~ ~~*If native vegetation is to be cleared:*~~ ~~Clearance will be undertaken in accordance with the attached Native Vegetation Management Plan.~~

Control and Management Strategies	
Optional Strategies:	
If native vegetation is retained: A buffer zone of a minimum 5m from the canopy drip line of native vegetation will be maintained and flagged during operations, where no excavation, stockpiling or other earthworks will be undertaken within this buffer zone.	☒ Yes ☐ No
~~**and/or**~~	
~~*If native vegetation is to be cleared:*~~ ~~Native vegetation areas for clearance will be identified and flagged as per the Native Vegetation Management Plan (NVMP) and all operators will be made aware of areas for clearance based on NVMP prior to commencement of mining.~~	☐ Yes ☒ No
Provide any additional Strategies:	
Vegetation buffer areas will be marked out when mining commences within the Stages (refer the Mining and Rehabilitation Plans) that the vegetation are located within.	

4.16 Blasting	
Blasting is proposed during mining operations ☐ Yes ☒ *No (No further action required in this table)* *Will explosives be stored on site?* ☐ *Yes* ☒ *No* Proposed frequency of blasting: Not applicable.	
Outcome No public health and/or nuisance impacts from air blast, vibrations or flyrock caused by blasting.	**Measurement criteria** Records from the Mine Logbook demonstrates that all blast related complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as approved by Mining Regulator) to the satisfaction of Mining Regulation. If complaints are not resolved to the satisfaction of Mining Regulation blast monitoring is to occur at locations, and using methods as agreed with the Mining Regulator to demonstrate that: - air blast and vibrations levels meet limits in the Australian Standards (AS 2187.2) - there are no incidents of fly rock leaving the tenement boundary.
Control and management strategies **Mandatory strategies:** All blasts are to be recorded in Mine Logbook detailing timing, size and number of drill holes. All blasting activities will be carried out by a fully licenced blasting contractor. All blasts undertaken in accordance with the Australian Standards (AS 2187.2). Notify the landowner and all adjacent receptors of a blast, 48 hours prior to a blast. **Provide any additional strategies:** Nil.	

Section 5: Records

Records related to measurement criteria will be kept on an electronic filing system. All records will be kept for the duration of the lease.

Section 6: Maps and plans

All maps and plans must be attached to this proposal when submitted.

6.1 Attachment 1 – Location plan

Scale and north point	☒ Yes
Tenement boundaries drawn on plan	☒ Yes
Infrastructure (houses, roads, railways, etc.)	☐ N/A ☒ Yes
Distance to residences or third party property and/or exempt land	☐ N/A ☒ Yes
Location plan labelled and attached to the proposal	☒ Yes
Proposed product transport route	☒ Yes
Sensitive areas in/adjacent to tenement (conservation areas, heritage sites etc.) If heritage areas separate plan attached ☐ Yes	☒ N/A ☐ Yes

6.2 Attachment 2 – Mining plan(s) (multiple plans can be included)

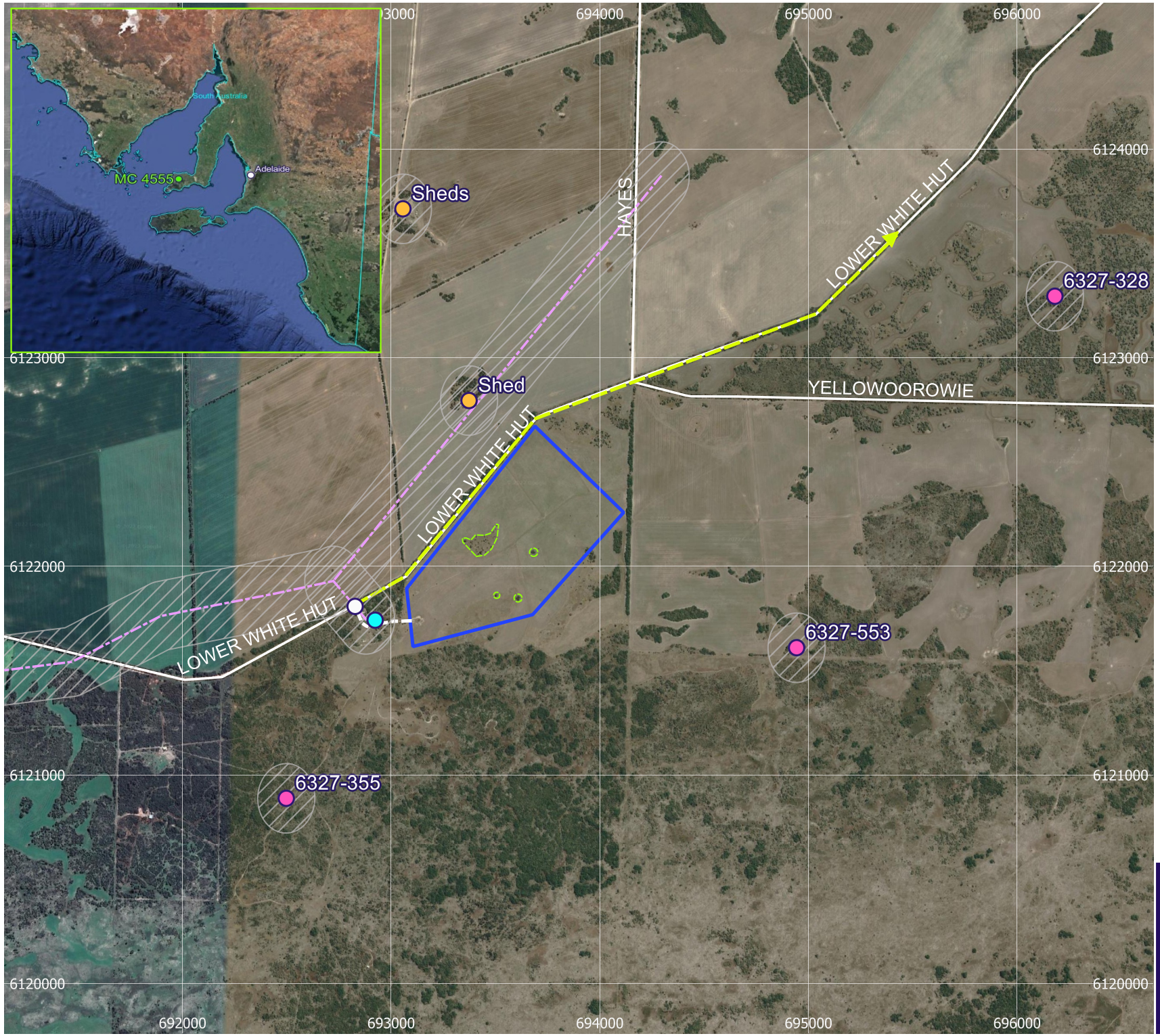
Scale and North Point	☒ Yes
Legend or key	☒ Yes
Tenement boundaries	☒ Yes
Identify any exempt land and distance from proposed mining operations	☒ N/A ☐ Yes
Access road(s) (proposed and existing road(s))	☒ Yes
Areas proposed to be mined	☒ Yes
Existing infrastructure (house, road, electricity pole, etc.)	☒ Yes
Proposed plant and equipment (crusher, plant, etc.)	☒ Yes
Proposed stockpiles location (overburden, topsoil and product)	☒ Yes
Direction of mining	☒ Yes
Stages of workings (showing less than 3ha open at one time)	☒ Yes
Direction of progressive rehabilitation	☒ Yes
Proposed native vegetation in accordance with the NVMP	☒ N/A ☐ Yes
Existing native vegetation that will not be cleared or impacted	☐ N/A ☒ Yes
Buffer(s) (native vegetation, infrastructure, etc.)	☐ N/A ☒ Yes
Visual screening measures (existing and proposed)	☐ N/A ☒ Yes
Surface water and/or groundwater features (drainage lines, surface water management structure, bore locations)	☐ N/A ☐ Yes
Previously disturbed areas	☐ N/A ☒ Yes
Mining plan(s) labelled and attached to the Proposal	☒ Yes

6.3 Attachment 3 – Proposed final landform plan

Scale and North Point	☒ Yes
Legend or key	☒ Yes
Tenement boundaries	☒ Yes
Location of all reshaped and rehabilitated areas	☒ Yes
Location of all revegetated areas (including native vegetation, if applicable)	☒ Yes
Final pit outline and batters	☒ Yes
Remaining (undisturbed) native vegetation	☐ N/A ☒ Yes
Location of drainage lines and watercourses	☒ N/A ☐ Yes
Remaining infrastructure	☐ N/A ☒ Yes
Final landform plan labelled and attached to the Proposal	☒ Yes

6.4 Attachment 4 – Cross-section plans

Scale (vertical and horizontal)	☒ Yes
North-south and east-west view	☒ Yes
Pre-mining natural surface	☒ Yes
Conceptual final rehabilitation surface	☒ Yes
Cross-section labelled and attached to the proposal	☒ Yes



Site location map

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Neighbours sheds
- Groundwater Wells
- PH8 Bottling Plant
- Site Access Point
- Powerlines
- Exempt land
- Proposed transport route
- Internal access road
- Trees on tenement

Roads_GDA94

- ROAD
- MC 4555 boundary

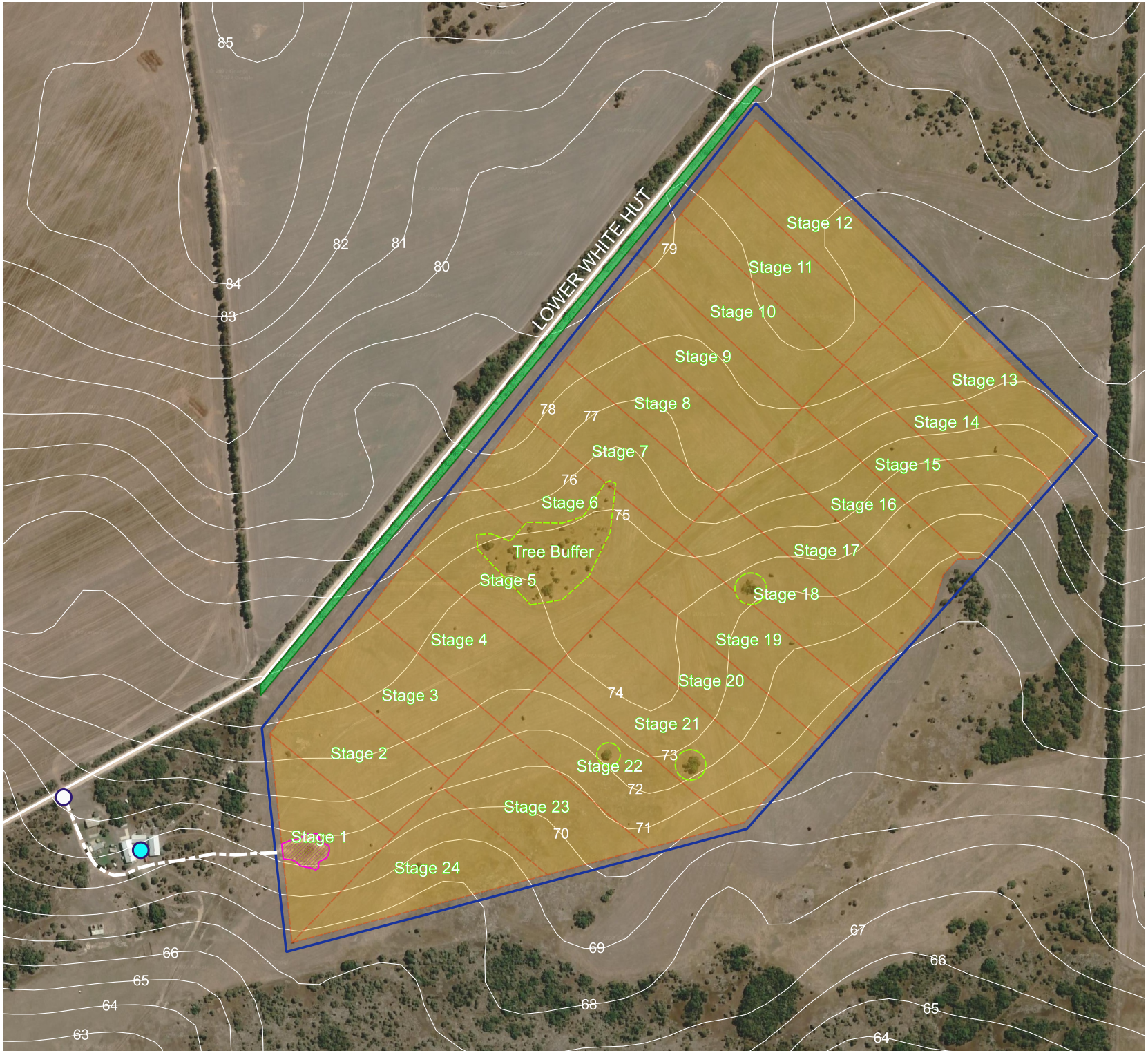
Google imagery

WGS 84 / UTM zone 53S

N

0 400 800 1,200 m

MACRO ENVIRONMENTAL SOLUTIONS



Staged mining and rehabilitation plan (pre-mining)

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Vegetation screen
- PH8 water bottling plant
- Site access point
- Internal access road
- Pilot pit
- Tree Buffers
- Contours (1-metre)

YP LS Mining Stages (pre-mining)

- Future mining (Stage 1 - 24)
- MC 4555 boundary

Google

WGS 84 / UTM zone 53S

N

0 100 200 300 m

MACRO ENVIRONMENTAL SOLUTIONS

Staged mining and rehabilitation plan (mining in Stage 8)

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Vegetation screen
- PH8 water bottling plant
- Site access point
- Internal access road
- Tree Buffers
- Topsoil stockpile

Mining Stages (mining in Stage 8)

- Rehabilitated (Stage 1 - 7)
- Current mining (Stage 8)
- Future mining (Stage 9 - 24)
- MC 4555 boundary

Google

WGS 84 / UTM zone 53S

N

0 100 200 300 m

MACRO ENVIRONMENTAL SOLUTIONS

Staged mining and rehabilitation plan (mining in Stage 16)

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Vegetation screen
- PH8 water bottling plant
- Site access point
- Internal access road
- Tree Buffers
- Topsoil stockpile

Mining Stages (mining in Stage 16)

- Rehabilitated (Stage 1 - 15)
- Current mining (Stage 16)
- Future mining (Stage 17 - 24)
- MC 4555 boundary

Google

WGS 84 / UTM zone 53S

N

0 100 200 300 m

MACRO ENVIRONMENTAL SOLUTIONS

Staged mining and rehabilitation plan (mining in Stage 24)

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Vegetation screen
- PH8 water bottling plant
- Site access point
- Internal access road
- Tree Buffers
- Topsoil stockpile

Mining Stages (mining in Stage 24)

- Rehabilitated (Stage 1 - 23)
- Current mining (Stage 24)
- MC 4555 boundary

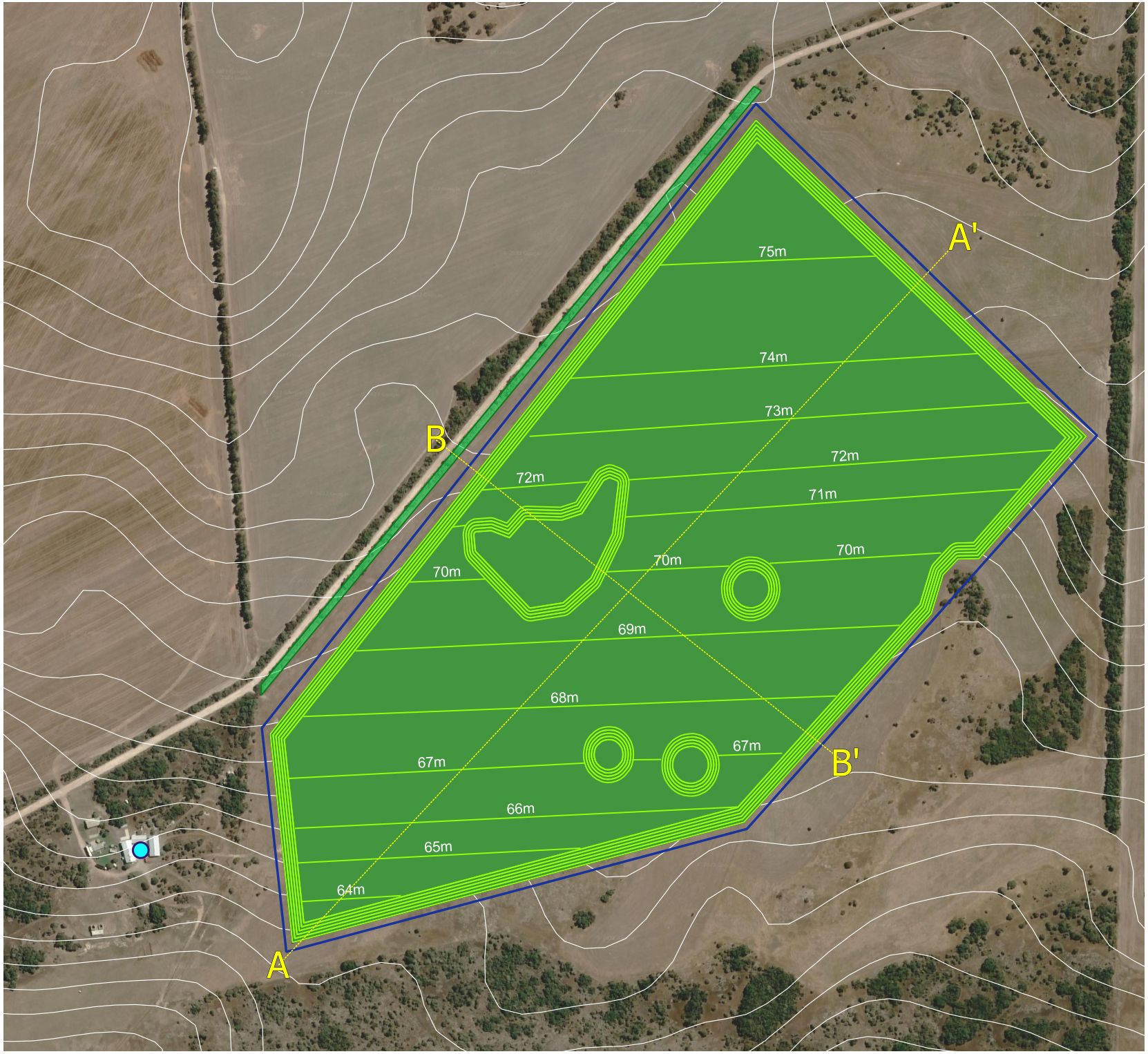
Google

WGS 84 / UTM zone 53S

N

0 100 200 300 m

MACRO ENVIRONMENTAL SOLUTIONS



Final landform

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

Legend

- Vegetation screen
- PH8 water bottling plant
- Off tenement contours
- Final tenement contours (1m)
- MC 4555 boundary

Google

WGS 84 / UTM zone 53S

N

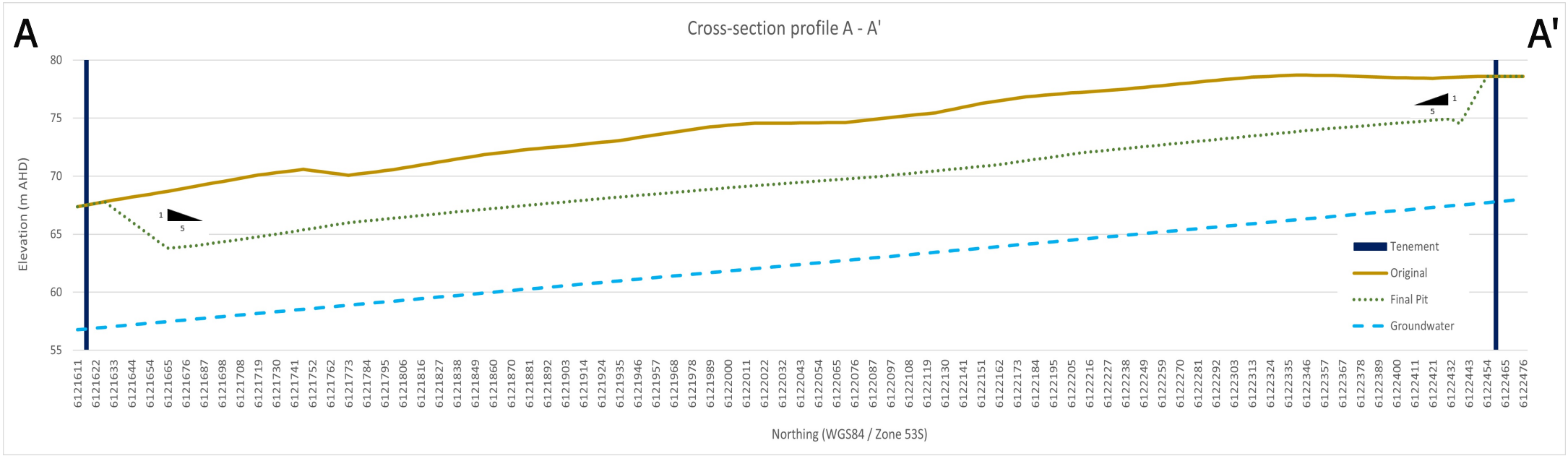
0 100 200 300 m

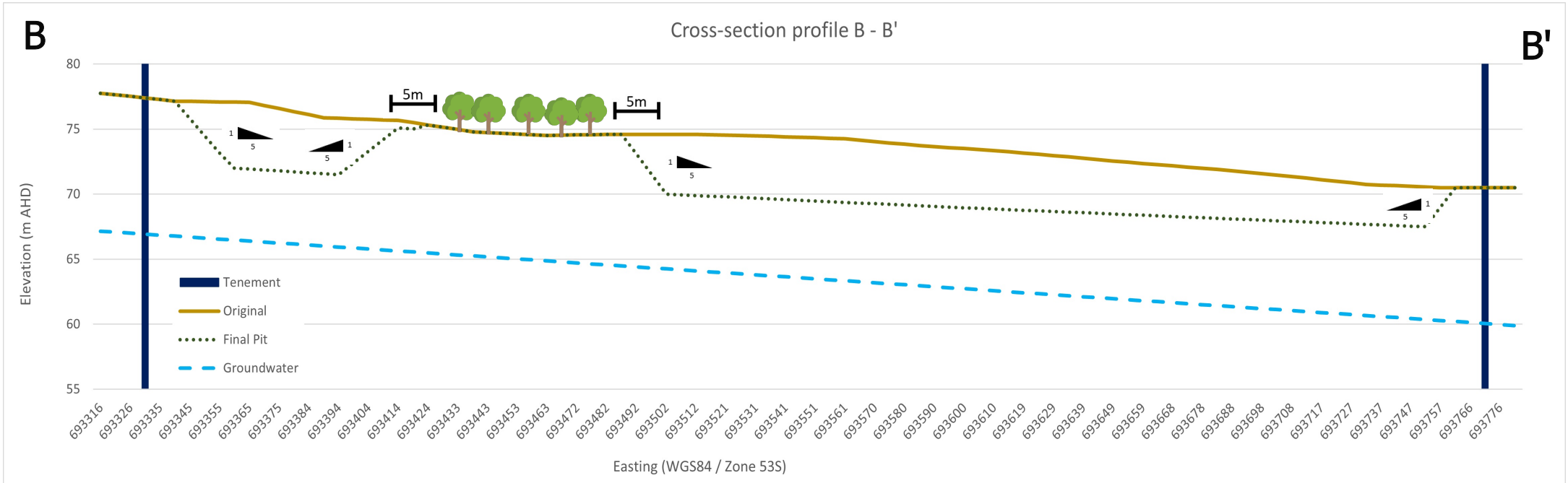
MACRO ENVIRONMENTAL SOLUTIONS

Cross-section profiles

Yorke Peninsula Lime Sand Mine
Mineral Claim 4555
PH8 Landholdings Pty Ltd

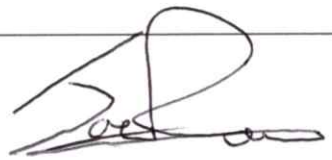
MACRO ENVIRONMENTAL SOLUTIONS





Section 7: Applicant declaration

☒	I have taken reasonable steps to review the information to ensure its accuracy and all statements made and information given in this application is true and correct.
☒	I declare that the resource or reserve (or both) has been appropriately identified and estimated
☒	Based on the control strategies provided I consider that the environmental outcomes will be able to be achieved.

Signature: 

Print name: Joe Rossi

Date: 12 January 2023

Position: Director

Section 8: Operator capability and compliance history

I have the following technical, operational and financial capabilities and resources available for carrying out proposed mining operations:

- PH8 Landholdings are a well-funded business that owns the property that the proposed mining lease is located on. As the landholder, PH8 Landholdings will ensure that the disturbed areas are rehabilitated to a productive cropping land at the completion of mining.
- PH8 will engage suitably qualified and experienced employees and contractors to undertake mining and rehabilitation operations at the Site. Transportation will be supplied by a PH8 Landholdings employee with suitable qualifications and licences and using road compliant vehicles.
- PH8 Landholdings is aware of their environmental management obligations under the *Mining Act 1971* and will closely manage the site to ensure that contractors are properly inducted and operating in compliance with the lease conditions and PEPR.
- Where required, PH8 Landholdings will engage the services of technical experts to facilitate efficient and responsible mining practices, and/or to resolve technical issues that may be encountered through the life of the mine.

In the last 5 years, a related body corporate or I have failed to comply with a provision of a corresponding Australian law or designated Australian Act in connection with authorised operations that resulted in:

☐ Yes	☒ No	The revocation or suspension of an authority to carry out authorised operations; or
☐ Yes	☒ No	A prosecution for an offence; or
☐ Yes	☒ No	The imposition of a penalty by a court; or
☐ Yes	☒ No	The issuing of a notice, direction or order that required the suspension or discontinuance of any authorised operations or
☐ Yes	☒ No	the rectification of any harm to the environment or the rehabilitation of any land, place or other aspect of the environment

Further detail on noncompliance if relevant:

Not applicable.

Appendix 1: Landowner consultation

The following information was discussed with the landowner to ensure that the landowner is fully aware of the proposed mining operations and to reduce potential issues arising once mining has commenced.

If there is more than one landowner, copy as required (not applicable).

Proposed location of mining operations	☐ Yes
Exempt land and any required waivers of exemption	☐ Yes
Method of mining	☐ Yes
Duration of mining operations	☐ Yes
Operating hours	☐ Yes
Sequence and staging of mining and rehabilitation	☐ Yes
Communication plan, including notification of blasting (if relevant) and follow up meetings	☐ Yes
Rehabilitation outcomes including conceptual final landform and land use	☐ Yes
Access to tenement	☐ Yes
Timing and nature of significant agricultural programs in relation to mining plan	☐ Yes
Infrastructure construction and/or maintenance (during and post mining)	☐ Yes
Weeds and pests (feral animal) management (during and post mining)	☐ Yes
Protection of infrastructure and/or sensitive areas within the tenement	☐ Yes
Use of landowner services and utilities	☐ Yes
Impact on visual amenity	☐ Yes
Other? Please specify: Click to enter text.	☐ Yes

Did the landowner raise any matters in relation to the information discussed above?	☐ Yes ☐ No

If you answered 'Yes' please provide details below:	
Matter(s) raised	Click to enter text.
Resolution(s) proposed	Click to enter text.

LANDOWNER SIGNATURE

☐ I have read this document and have been consulted on the matters listed above.			
SIGNATURE:	……		
PRINT NAME:	Click to enter text.	DATE:	Click to select a date.

Appendix 2: Adjacent landowner consultation

The following information was discussed with residents that live adjacent to the mineral claim to ensure that they are fully aware of the proposed mining operations and to reduce potential issues arising once mining has commenced (not applicable).

(If there is more than 1 adjacent landowner, copy as required.)

Proposed location of mining operations	☒ Yes
Exempt land and any required waivers of exemption	☐ Yes
Method of mining	☒ Yes
Duration of mining operations	☐ Yes
Operating hours	☒ Yes
Sequence and staging of mining and rehabilitation	☒ Yes
Communication plan, including notification of blasting (if relevant) and follow up meetings	☐ Yes
Rehabilitation outcomes including conceptual final landform and land use	☒ Yes
Access to tenement	☒ Yes
Timing and nature of significant agricultural programs in relation to mining plan	☐ Yes
Infrastructure construction and/or maintenance (during and post mining)	☐ Yes
Weeds and pests (feral animal) management (during and post mining)	☒ Yes
Protection of infrastructure and/or sensitive areas within the tenement	☒ Yes
Use of services and utilities	☒ Yes
Visual amenity	☒ Yes
Other? Please specify: Click to enter text.	☐ Yes

Did the adjacent landowner raise any matters in relation to the information discussed above?	☐ Yes ☒ No
If you answered 'Yes' please provide details below:	
Matter(s) raised	Consultation with neighbouring landholders was undertaken on 6 January 2023. No negative feedback was received from the four adjacent landholders consulted.
Resolution(s) proposed	None required.

LANDOWNER SIGNATURE

☐ I have read this document and have been consulted on the matters listed above.			
SIGNATURE:	***Landholder names and signatures provided to DEM separately.***		
PRINT NAME:		DATE:	

Appendix 3: Stakeholder consultation

Stakeholder name: SARDI.

Date of consultation: 17 November 2022, 24 November 2022, 28 November 2022.

Matter(s) raised:

Potential spread of snails that are present on the lower Yorke Peninsula.

Resolution(s) proposed:

- Scalping the area to remove any snails and snail eggs on the surface (topsoil stripped to 0.3m).
- Removing weeds and vegetation around the perimeter (5-metre buffer)
- Washing down vehicles and machinery.
- Mining vehicles only to drive on well defined access tracks and not over any topsoiled areas.
- Preparation of a Snail Management Plan to be attached to the PEPR.

Note that snail baiting was proposed as a control strategy by SARDI but would only be used as a last resort as the property is certified organic and control without the use of chemicals is preferred to maintain the certification. Further investigation will be undertaken to identify baiting options that do not impact on the organic certification.

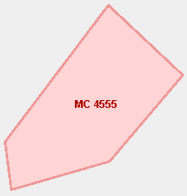
Appendix 4 – Eligibility criteria

Government of South Australia

Defined Impact (MP) eQuestionnaire: MC 4555

The Defined Impact Mining Proposal (MP) eQuestionnaire has been designed to evaluate whether you as an applicant are eligible for use of the Mining Proposal Template.

- The questionnaire consists of thirteen questions, to answer each question check the Yes or No option provided.
- On completion of eQuestionnaire please print a copy for your records using the print icon provided.



More Information & Guidelines:
Mineral Resources Website: Extractive Minerals

For enquires contact:

Resource Information Centre:
Customer Services
Phone: +61 8 8463 3000
email:
resources.customerservices@sa.gov.au

START QUESTIONNAIRE

1	Is the Mineral Claim located outside of the 'Evaluation Eligibility Critera' layers on the SARIG map?	(●) Yes ( ) No
2	Interaction with other tenements Will the tenement be operated (stockpile, store or process material) in conjunction with another lease or application area?	( ) Yes (●) No
3	Potential Impact Receptors ***Infrastructure*** Is mining proposed less than **50 metres** from any gas pipelines, overhead transmission lines, water pipeline or underground telecommunication lines? Note: infrastructure within 150 metres of proposed mining operations, may initiate the requirements of exempt land in accordance with Section 9 of the *Mining Act 1971*.	( ) Yes (●) No
4	***Surface Water*** Is mining proposed less than **25 metres** from a Watercourse?	( ) Yes (●) No
5	***Groundwater***	

	Is mining proposed to stay **two metres** above known groundwater levels?	◉ Yes ○ No
6	Potential Sources of Impact Is continuous 24 hour mining operations?	○ Yes ◉ No
7	Is the rock to be mined likely to contain hazardous minerals? E.g. sulphides, asbestos and/or radioactive minerals.	○ Yes ◉ No
8	Will proposed mining involve any wet processing?	○ Yes ◉ No
9	Will the maximum area of land disturbed by mining (including stockpiles) be greater than **3 hectares** at any one time?	○ Yes ◉ No
10	Will proposed mining operations occur to a depth less than **5 metres** from ground level?	◉ Yes ○ No
11	Will proposed mining operations require blasting? Note: if the applicant does not meet this criteria but believes the risk profile of the application will meet other criteria please call Mining Regulation to discuss.	○ Yes ◉ No
13	Will proposed mining be conducted on a sand dune or a surface outcrop less than **10m** in height?	◉ Yes ○ No

This application **has met** the eligibility criteria for the Defined Impact Mining Proposal (MP) eQuestionnaire to proceed with your application: Defined Impact Mining Proposal (MP) DOC Template 2021.docx

Appendix 5: Native vegetation assessment and native vegetation management plan

Not applicable – no native vegetation clearance proposed.

Appendix 6: EPBC Act protected matters search

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Nov-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	14
Listed Migratory Species:	13

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Drooping sheoak grassy woodland on calcrete of the Eyre Yorke Block Bioregion	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pedionomus torquatus		
Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Psophodes leucogaster leucogaster		
Mallee Whipbird [81025]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
PLANT		
Caladenia brumalis		
Winter Spider-orchid [54993]	Vulnerable	Species or species habitat may occur within area
Caladenia tensa		
Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area
Euphrasia collina subsp. osbornii		
Osborn's Eyebright [3684]	Endangered	Species or species habitat may occur within area
Senecio macrocarpus		
Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Walk the Yorke Leisure Trail Project, Yorke Peninsula, SA	2013/7059	Not Controlled Action	Completed
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 7: Search of the Register of Aboriginal Sites and Objects

Government of South Australia

Terry Menadue
Macro Environmental Solutions
2A Austin Avenue
Athelstone 5076 South Australia

Dear Terry

Thank you for the search request dated 10 Nov 2022. The search was based on the title details - Title Type: CT, Volume: 6057, Folio: 876. The address for this parcel is: 950 LOWER WHITE HUT RD WHITE HUT SA 5575. Your reference is 4186.

I advise that the central archive, which includes the Register of Aboriginal Sites and Objects (the Register), administered by Aboriginal Affairs and Reconciliation (AAR), has no entries for Aboriginal sites within 500m of this location.

The applicant is advised that sites or objects may exist in the proposed development area, even though the Register does not identify them. All Aboriginal sites and objects are protected under the *Aboriginal Heritage Act 1988* (the Act), whether they are listed in the central archive or not. Land within 200 metres of a watercourse (for example the River Murray and its overflow areas) in particular, may contain Aboriginal sites and objects.

Pursuant to the Act, it is an offence to damage, disturb or interfere with any Aboriginal site, object or remains (registered or not) without the authority of the Premier. If the planned activity is likely to damage, disturb or interfere with a site, object or remains, authorisation of the activity must be first obtained from the Premier under Section 23 of the Act. Section 20 of the Act requires that any Aboriginal sites, objects or remains, discovered on the land, need to be reported to the Premier. Penalties apply for failure to comply with the Act. It should be noted that this Aboriginal heritage advice has not addressed any relevant obligations pursuant to the *Native Title Act 1993*.

Please be aware in this area there are Aboriginal groups/organisations/traditional owners that may have an interest. These may include:

Narungga Nations Aboriginal Corporation
Chairperson: Ann Newchurch
Address: C/- South Australian Native Title Services Level 4 345 King William Street ADELAIDE SA 5000
Telephone: 0458440313
Email: annewchurch@hotmail.com
Contact Officer: Tim Graham
Telephone: 0459868558
Email: TimG@nativetitlesa.org info@nativetitlesa.org

If you require further information, please contact the Aboriginal Heritage Team on telephone (08) 8303 0738 or send to our generic email address AAR.HeritageSites@sa.gov.au

Yours sincerely,

HERITAGE INFORMATION TEAM
ABORIGINAL AFFAIRS & RECONCILIATION

12 December 2022

Appendix 8: Photo plates

Plate 1 – Onion weed (Asphodelus fistulosus)

Plate 2 – Horehound (Marrubium vulgare)

Plate 3 – African boxthorn (Lycium ferocissimum)

Plate 4 – Stand of Tea Tree species within the Stage 5 and Stage 6 mining areas

Plate 5 – Eucalyptus tree species 1 (53H 693680mE 6122064mS)

Plate 6 – Eucalyptus tree species 2 (53H 693606mE 6121842mS) and 3 (53H 693500mE 6121854mS)

Plate 7 – Lime sand pilot pit

Plate 8 – Lime sand pilot pit

Plate 9 – Topsoil within pilot pit