


**EXPLORATION PROGRAM FOR ENVIRONMENT PROTECTION  
AND REHABILITATION**
**USE THIS FORM  
WHEN:**

Applying to conduct mineral exploration drilling programs in accordance with Section 15 of the Mining Act 1971.

**SECTION A - GENERAL DETAILS**

Authorisation Details	The area designated as 'Area C' under Section 15 of the <i>Mining Act 1971</i> , as published in the South Australian Government Gazette 7 <sup>th</sup> May 2015. File Reference MER F2014/000909.			
Holder of Authorisation	Director of Mines			
Operator	Department of State Development, Geological Survey Branch			
Project Supervisor/contact person(s)	John Brennan, Mineral Systems Drilling Coordinator, Geological Survey Branch, Department of State Development (08 8226 3200). Project Supervisor has a B.App.Sc(Geol); over 15 years' experience in the exploration and mining industry; and extensive experience managing large-scale, complex drilling programs (and associated contractors) in both remote and environmentally sensitive areas.			
1:250,000 Mapsheet	PORT AUGUSTA (1:100,000 Mapsheets – Augusta and Cariewerloo)			
Project Description	<p>The exploration activities detailed herein form a part of the broader 2015 Mineral Systems Drilling Program (MSDP), which is being conducted by the Geological Survey Branch of the Department of State Development (DSD).</p> <p>The MSDP is a collaborative project between Government, research organisations (including the Deep Exploration Technologies Cooperative Research Centre (DET CRC)), and select mineral exploration companies (Kingston Resources Ltd and Minotaur Exploration Ltd).</p> <p>The MSDP aims to identify regional alteration signatures of mineral systems, and using the available technologies, provide near real-time data collection to allow anomalies to be rapidly identified, and drill plans to be refined and modified during the drilling campaign.</p> <p>The potential for a range of different styles of mineralisation will be investigated, including IOCG, porphyry and epithermal systems.</p> <p>The MSDP will see various technologies that have been developed through the DET CRC being deployed in the drilling program across the northern Eyre Peninsula. Such technologies comprise both surface and down-hole sensing systems, including Lab-at-Rig<sup>®</sup> and AutoSonde<sup>™</sup>.</p> <p>The DSD will be contributing ~\$2m toward the cost of the MSDP, through the PACE Frontiers initiative. In total, approximately 16 to 20 diamond-cored drill holes will be completed for ~7,000m, across the full MSDP.</p>			
Proposed Project Schedule	<i>Start date</i>	01/05/2015	<i>End date</i>	30/04/2016

**DECLARATION**

The information contained in this application is to the best of my knowledge true and accurate.

Name	John Brennan
Position	Mineral Systems Drilling Coordinator
Email	john.brennan@sa.gov.au
Phone	08 8463 3064 or 0412 182 136
Date	28 <sup>th</sup> March 2015

I agree



# EXPLORATION PEPR APPLICATION

## SECTION B – PROGRAM PREPARATION AND ACCESS TO LAND

### Work undertaken in preparing the proposal

Summarise the research and field work undertaken in preparing the proposal including:

- Desktop reviews of existing information.
- Field visits for reconnaissance and landholder consultation purposes.
- Contractor consultation, i.e. equipment scale and type.
- Other information used when planning the proposed program.

Drill targets have been selected in consultation with the relevant Exploration Licence holders (Kingston Resources Limited), based on: detailed analysis of past exploration activities in the area; available geological and geophysical datasets; and key program objectives.

Information stored within various SA Government GIS databases has been interrogated as a part of the desktop review of the proposed drilling program, and more specifically, the location of individual drill sites.

Two separate reconnaissance field trips were conducted by staff from the Geological Survey, the first being held from 25-28<sup>th</sup> February 2015, and the second during the period 24-27<sup>th</sup> March 2015. During these field trips, all of the proposed drill sites were visited and pegged. Observations were made with regard to: topographical and drainage features; vegetation type and density; and pastoral lease infrastructure (e.g. existing tracks, fencelines, stock watering points, etc). Recommendations for changing the location of some sites were made and have been factored into final drill site selection.

Discussions have been held with the Pastoral Lease holders who will be directly involved with the drill program (i.e. Cariewerloo and Pandurra Stations). Initial phone conversations have been followed up with face-to face meetings during the aforementioned field trips. Feedback on the proposed program has been positive and discussions will continue to be held to see how the Pastoral Lease holders may be able to assist with supplying some logistical support to the program.

Discussions have also been held with potential earthmoving operators and drilling contractors regarding necessary equipment for drill site preparation, rehabilitation and drilling operations. At this stage, no final decisions have been made and no commercial contracts have been signed for the provision of these services.

### Land use and tenure

Select below, the land tenure and land use that the proposed exploration activities will occur in. Include additional information where prompted.

Land Tenure	Applicable	Land Use	Applicable
Freehold	<input type="checkbox"/>	Grazing	<input checked="" type="checkbox"/>
Pastoral Lease	<input checked="" type="checkbox"/>	Cereal/cropping	<input type="checkbox"/>
Perpetual Lease	<input type="checkbox"/>	Residential	<input type="checkbox"/>
Crown Land	<input type="checkbox"/>	Township	<input type="checkbox"/>
Mining Reserve	<input type="checkbox"/>	Industrial	<input type="checkbox"/>
Aboriginal Freehold and Leasehold (APY Lands, MT Lands, etc.)	<input type="checkbox"/>	Tourism	<input type="checkbox"/>
Forestry Reserve	<input type="checkbox"/>	Conservation	<input type="checkbox"/>
Marine Reserve	<input type="checkbox"/>	Defence - Woomera Prohibited Area	<input type="checkbox"/>
* (National parks, conservation parks, conservation reserves, regional reserves)	<input type="checkbox"/>	Defence - Cultana	<input type="checkbox"/>
* If National Parks is selected, please provide the name of the park here		Road reserve	<input type="checkbox"/>
* Other	<input type="checkbox"/>	* NVHAs	<input type="checkbox"/>
If other is selected, describe the land tenure here		* Provide the name of the area here	
		Orchard/vineyard	<input type="checkbox"/>
		European Heritage Sites	<input type="checkbox"/>
		Provide the name of the site here	
		Sites of Scientific significance (geological monuments, fossil reserves etc.)	<input type="checkbox"/>
		Provide the name of the site here	
		Other (e.g. historic mining)	<input type="checkbox"/>
		Provide the name of the site here	

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Provide any additional information if required.

N/A

### Landowner Details and Consultation (Regulation 65(1)(c))

Provide a detailed plan describing how applicable landowners and other stakeholders will be engaged. The plan must demonstrate how the following requirements will be identified and achieved:

- Individual or groups of similarly affected persons.
- The type of interested or affected party (resident, council, government agency, etc.).
- Concerns/issues raised by stakeholders.

There are five proposed drillholes to be completed during this phase of the Mineral Systems Drilling Program. Three drillholes fall upon the Cariewerloo pastoral lease; one is situated on the Illeroo pastoral lease (which is also held by the same party that holds Cariewerloo); while the final hole is situated on the Myall Creek pastoral lease, which has been amalgamated into the adjacent Pandurra pastoral lease.

The value of early and open consultation is recognised by the GSSA. In this regard, and as detailed above, introductory phone discussions and face-to-face meetings have already commenced with the holders of the relevant pastoral leases. All pastoral lease holders will also be formally advised in writing of the scope of field activities (including drilling) in advance (>14 days) of the activities commencing.

Communication with the pastoral lease holders will be ongoing throughout the program and they will be provided with the contact details for the Drilling Program Coordinator, who will act as a central key contact point (i.e. Liaison Officer).

Initial meetings with the pastoral lease holders during the reconnaissance and planning stages are being used to determine any key issues as they perceive them, prior to exploration activities commencing. Existing and planned control measures surrounding those areas of concern will then be discussed. Depending on the nature of the concerns, additional control measures may be put in place to address any specific or additional items.

It is envisaged that follow-up meetings with the pastoral lease holders will occur on a basis of not less than once every month, or as otherwise mutually agreed, until the program is completed. This, coupled with the provision of contact details for the Drilling Program Coordinator, will ensure that any concerns/issues can be promptly raised by the pastoral lease holders with the relevant GSSA personnel, and be actioned.

It is important to recognise that the pastoral lease holders are running a business operation. In this regard, every effort will be made to minimise impact of the drilling operation on their business – e.g. drill sites will be positioned a minimum of 500m from stock watering points, and measures will be put in place to ensure maintenance is carried out on station tracks impacted by increased vehicle movement.

In order to provide benefit to local communities and those directly affected by the proposed exploration activities, it is also intended that, where possible, the opportunity to provide support services to the program (e.g. earthmoving, water provision, accommodation, etc) will be offered to the pastoral station owners (assuming agreeable commercial terms can be reached).

As the MSDP is being undertaken by the GSSA solely for the purposes of geoscientific research, pursuant to Section 15 of the Mining Act, a Native Title Agreement is not required per Part B of the Act. Notwithstanding this, consultation has begun with the relevant Native Title claimant groups. Initial written correspondence was sent to the claimant groups in early December 2014, to make them aware of the proposed MSDP and to provide some context regarding the program. In order to progress the process for Aboriginal Heritage clearance surveys ahead of land disturbance, further written correspondence was sent to the relevant claimant groups in late April 2015, detailing proposed hole locations and seeking to initiate formal meetings.

It should be noted that consultation and engagement with the Native Title claimant groups will be ongoing throughout the process of preparing for, and conducting, the Heritage clearance surveys.

Both the Pastoral Lease holders, and the Native Title parties, will be provided with a copy of this PEPR document once it has been approved.

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## SECTION C – DESCRIPTION OF THE ENVIRONMENT

*The following elements of the existing environment need only be described to the extent that they may be considered in assessing the potential impacts of the proposed operations. If an element is unlikely to be affected by the operation, include a statement to that effect.*

*Where possible photographs and other relevant information obtained during site visits should be attached to help describe relevant environmental aspects.*

### Proximity to Infrastructure and Housing

Information is required to determine if existing infrastructure (both public and private) may be affected by the program, and to determine the extent of impact on the public from noise, dust, etc. The following information must be included:

- Settlements - Indicate the name and distance of the nearest town, and distance to houses and homesteads from the proposed exploration activity.
- Roads and tracks - indicate existing fence lines, roads and tracks, including those which are to be used in the exploration program.
- List other human infrastructure such as schools, hospitals, commercial or industrial sites, roads, sheds, bores, dams, ruins, pumps, scenic lookouts, railway lines, transmission lines, gas and water pipelines, communication lines (e.g. fibre optic cables), etc. should be considered if these may be impacted by the exploration activity.
- Where possible provide this information on a locality plan.

The closest township to the proposed drilling area is Port Augusta, which lies approx. 17km east of the nearest proposed drill site. Several different homesteads lie in the area surrounding the proposed drill sites, the closest of which are 'Illeroo' (approx. 6km to the south), 'Myall Creek' (approx. 2km to the south (unoccupied)), and 'Carriewerloo' (approx. 8km to the west).

Wherever possible, access to proposed drill sites will utilise the network of existing station tracks. Tracks will be maintained as required (in consultation with the pastoral lease holders), to ensure minimal disruption to station activities.

Drill sites will not be positioned within 500m of stock watering points.

Refer to Plan 1 – MSDP Drillhole Location Plan, for the location of proposed drill sites, station infrastructure and homestead locations.

### Landform and Topography

Describe the topography of the general area affected by the exploration program. Include the susceptibility to erosion and visual attributes (steep or undulating slopes, plains, rocky outcrops, dunes, salt pans, clay pans, etc.).

Reconnaissance field trips conducted in February and March 2015 reveal the topography in the area of the proposed drill sites to be generally flat, to mildly undulating. Flatter low-lying areas are dominated by sparse to moderately vegetated plains (see Photo 1). Mildly undulating areas are more rocky in nature (see Photo 2). Further afield in the general area, there are some prominent, steep, rocky ridgelines. It should be noted, however, that these ridges will not be impacted by proposed drilling activities.

In areas where ground surfaces are mildly undulating, efforts will be made to relocate proposed drill sites to flatter ground, thus minimising the need for drill pad earthworks. The ability to relocate drill sites will, however, be constrained to a certain degree by geological factors.

Given the very low gradient of the areas to be disturbed, it is expected that there will be very low susceptibility to erosion. Extremely heavy rainfall in a short period (e.g. a storm event) may produce a sheetwash effect in the general area, however, any erosional effects on areas impacted by drilling activities are likely to be localised.

### Soil and Surface Cover

Describe soil types and soil surface cover (for example – gibber, rocky, etc.) in the general area affected by the exploration program. Include details on the susceptibility to compaction, erosion, dust, runoff and any other aspects that may be an issue for disturbance and rehabilitation.

As described above, flatter low-lying areas are dominated by moderately vegetated plains covered with material ranging from silty sheetwash sediments to more gravel and gibber dominated accumulations. Mildly undulating areas are typically more sparsely vegetated, and are more rocky in nature, with negligible soil profile having been developed from the underlying bedrock.

Whilst existing tracks will be utilised where possible for vehicle movement, it is likely that new tracks developed over the flatter, silt dominated plains will lead to compaction, become powdery, and generate localised dust in dry weather.

Given that the drilling program will be occurring during the late-Autumn/Winter period, it is anticipated that any dust issues will be minimal and not require ongoing intervention (e.g. dust suppression).

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### Hydrology

Will the proposed program interfere with natural drainage (e.g. drainage lines, creeks, floodplains)? If Yes, describe the potential interference.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
There are few distinct water courses in the proposed drilling areas, and those that do exist are minor and ephemeral in nature. Wherever possible, existing tracks will be used to cross such water courses. Where this is not possible, new track routes will be selected to divert around natural drainage features wherever practicable.		
Minor modifications may need to be made to three existing small water course crossings (all less than 5m wide) to facilitate heavy vehicle movement to drill site 15DDSM003. These modifications will not affect native vegetation and will be carried out in a manner such that they will not restrict any water flow. It should also be noted that surface evidence suggests that these creek crossings rarely experience any water flow events.		
If any new water course crossings need to be developed, care will be taken to: avoid native vegetation; minimise the potential for increased erosion; and avoid obstruction of the watercourse by creating windrows across the water flow direction.		
During the rehabilitation phase, any modified creek crossings will be returned to their previous form.		
Is the program area located within water protection areas defined under the River Murray Act 2003? If Yes, provide the name(s).	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		
Is the program area located within any Prescribed Watercourses or Prescribed Surface Water Areas under the Natural Resources Management Act, 2004 (NRM Act)? If Yes, provide the name(s).	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		

### Groundwater

Is groundwater likely to be intersected when conducting the exploration program? If Yes, use the table below to describe the expected hydrogeological conditions, and identify groundwater aquifers in the exploration area(s) that may be affected. Copy and paste a new a new table for each area where different groundwater conditions may be encountered.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Description of the locality/area where different groundwater conditions may be encountered					
Six Mile Hill East (Proposed hole ID 15DDSM003)					
Formation age and/or stratigraphy unit	Stratigraphic intervals (depth range (m))	Aquifer formation name	Aquifer interval/thickness (from-to) (m)	Type of aquifer(s) Intersected (e.g. unconfined, confined or artesian)	Provide aquifer salinity, depth to water level and any other relevant comments
Tent Hill Formation - Neoproterozoic	0-80m	N/A	0-80m	Fractured rock, unconfined	SWL varies from 2.55m to 15m.
Description of the locality/area where different groundwater conditions may be encountered					
Six Mile Hill West (Proposed hole ID's 15DDSM001,002,004,005)					
Formation age and/or stratigraphy unit	Stratigraphic intervals (depth range (m))	Aquifer formation name	Aquifer interval/thickness (from-to) (m)	Type of aquifer(s) Intersected (e.g. unconfined, confined or artesian)	Provide aquifer salinity, depth to water level and any other relevant comments
Whyalla Sandstone - Neoproterozoic	0-80m	N/A	0-80m	Fractured rock, unconfined	No data available
Gawler Range Volcanics – Mesoproterozoic	0-100m	N/A	Unknown	Fractured rock, unconfined	No data available

Is the proposed program located within a Prescribed Wells Area or Prescribed Water Resource Area? If Yes, provide the name of the area.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		

Provide any additional information if required.

N/A
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### Native Vegetation

Will you be working within areas of native vegetation? If Yes, provide the following information: <ul style="list-style-type: none"> <li>• Description of the formation and structure of vegetation in the area (for example: woodland, shrubland, grassland, etc.).</li> <li>• List of the dominant species.</li> </ul>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
As the work areas relevant to this drilling program fall on actively grazed pastoral stations, in a relatively arid environment, vegetation is typically quite sparse, and has been degraded to varying extents. Vegetation is dominated by chenopod shrubland, comprising: bladder saltbush ( <i>Atriplex vesicaria</i> ) and glasswort ( <i>Sclerostegia tenuis</i> ), with isolated patches of black bush ( <i>Maireana pyramidata</i> ), low bluebush ( <i>Maireana astrotricha</i> ) and pearl bluebush ( <i>Maireana sedifolia</i> ), with an understory of copperburrs ( <i>Sclerolaena</i> sp), bush minuria ( <i>Minuria cunninghamii</i> ) and speargrass. Black oak ( <i>Casuarina pauper</i> ) and western myall ( <i>Acacia papyrocarpa</i> ) trees are found in small, often linear, clusters, especially along sections of ephemeral watercourses in the low lying areas. Some of the lower lying areas contain crab hole country (gilgais) and minor watercourses which tend to support samphire/glasswort ( <i>Sclerostegia tenuis</i> ) and cotton bush ( <i>Maireana aphylla</i> ). Refer to Photos 1-3.		

### Significant Habitats and Flora

If you are working within areas of native vegetation, use the below table to list any significant habitats and any rare or endangered flora species located or reported to have been in the area that may be impacted by the proposed program. Include known sightings of listed species on a locality plan/map.

Species/Habitat	Common Name	NPW Act rating	EPBC Act rating
Citrus glauca	Desert Lime	Vulnerable	N/A
Gratwickia monochaeta	N/A	Rare	N/A
Leptorhynchos scaber	Annual Buttons	Rare	N/A
Santalum spicatum	Sandalwood	Vulnerable	N/A
Ceratogyne obionoides	Wingwort	Rare	N/A

Note: NPWSA Act conservation status includes – extinct, endangered, vulnerable, threatened and rare. EPBC Act listings include – extinct in the wild, critically endangered, endangered and vulnerable.

### Weeds, Plants and Pathogens

Provide information of the extent the area is affected or potentially affected by pathogens and weeds (e.g. *Phytophthora*, Buffel grass).

A review of GIS information available on the DEWNR website does not reveal any documented occurrences of Weeds of National Significance, or buffel grass, in the areas relevant to the drilling program. Buffel grass is, however, documented as occurring in the immediate vicinity of the Stuart Highway, approximately 14km east of the drilling areas. In this area, where the main Cariewerloo Station access track joins the Stuart Highway, vehicle traffic entering and leaving, will be confined to the bitumen highway, and sheeted gravel road. For this reason, the likelihood of the transfer of buffel grass from the roadside, further westward on to the station country by vehicles is considered negligible. Wards weed is expected to have a sporadic presence in the drilling area. Sporadic, patchy occurrences of horehound ( <i>Marrubium vulgare</i> ) and saffron thistle ( <i>Carthamus lanatus</i> ) have been noted as being present on the stations, particularly along the edges of existing tracks.
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### Fauna

Describe the native and feral fauna that may be present in the application area, including feral species.

The reconnaissance field trips to the proposed drilling areas in February and March 2015, revealed fauna to be dominated by the red kangaroo ( <i>Macropus rufus</i> ), with lesser emu ( <i>Dromaius novaehollandiae</i> ) and wedge-tailed eagle ( <i>Aquila audax</i> ) occurrences. Although not sighted, snake and lizard occurrences are likely to include: shingleback lizards ( <i>Tiliqua rugosa asper</i> ); blue tongued skinks ( <i>Tiliqua scincoides</i> ); eastern brown snake ( <i>Pseudonaja textilis</i> ). Feral fauna inhabiting the area include herds of goats, occasional foxes and rabbits.
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### Significant Fauna

Using the table below list any rare or endangered fauna species located or reported to have been in the area that may be impacted by the proposed program where possible. Include known sightings of listed species on a locality plan/map.

Species	Common Name	NPW Act rating	EPBC Act rating
Northiella haematogaster	Bluebonnet	Rated at ssp level	N/A
Amytornis textilis	Tick-billed Grasswren	N/A	Rated at ssp level
Neophema elegans	Elegant Parrot	Rare	N/A
Cacatua leadbeateri	Major Mitchell's Cockatoo	Rare	N/A
Melanodryas cucullata	Hooded Robin	Rated at ssp level	N/A
Neophema chrysostoma	Blue-winged Parrot	Vulnerable	N/A

Note: NPWSA Act conservation status includes – extinct, endangered, vulnerable, threatened and rare.  
EPBC Act listings include – extinct in the wild, critically endangered, endangered and vulnerable.

### Environmentally Sensitive Locations

Are there any environmentally sensitive locations within or close to the proposed exploration area (e.g. areas having particular ecological, cultural, scientific, aesthetic or conservation value)? If Yes, provide a description of identified environmentally sensitive location(s). Mark these areas on a locality plan to identify any areas of conflict so that access roads or other activities can be planned and located effectively.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		
Are you likely to impact on the environmentally sensitive area? If Yes, detail the likely effects the proposed program may have.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		

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### SECTION D – DESCRIPTION OF PROPOSED EXPLORATION OPERATIONS

#### Equipment and personnel requirements

Using the table below, describe the equipment, size and composition of field crews, and proposed working hours/days required to conduct the proposed program.

Type of Personnel	Number	Name of Contractor (if applicable)	
Geologists	1-2	GSSA/Kingston Resources	
Land Access/Environmental	1	(MSDP Coordinator will assume role of Liaison Officer)	
Field Assistants/Technicians	2	To be determined	
Drilling Crew	3-4	To be determined	
Site Preparation and Rehabilitation (earthmoving)	1-2	To be determined	
Other (provide details)	2-4	<i>Staff from various Research Organisations (periodic)</i>	
Shifts worked per Day	Hours worked per day	Days worked per week	
First 6-8 weeks will be single shift, then double shift thereafter.	Typically 12 hours per shift	Seven	
Equipment	Owner/Operator	Description/Capacity	Activity/Purpose
Grader	To be Determined (TBD)	<i>Likely Cat12H or smaller</i>	<i>May be required to refurbish access tracks and establish drill pads.</i>
Front-end Loader	TBD	<i>Likely Cat908H or similar size (approx. 1m<sup>3</sup> bucket)</i>	<i>May be required to refurbish access tracks and establish drill pads.</i>
Drilling Rig – Diamond Coring	Boart Longyear	<i>Likely to be an 8 wheel drive, truck mounted UDR1000.</i>	<i>To provide diamond drill core samples.</i>
Drill Rod Truck	Boart Longyear	<i>Likely 6 or 8 wheel drive, flat-bed support truck.</i>	<i>Carrying additional drill rods/supplies.</i>
Support Truck	Boart Longyear	<i>Likely 6 or 8 wheel drive, flat-bed support truck.</i>	<i>Carrying fuel/water/supplies/consumables</i>
Drillers Light Truck	Boart Longyear	<i>Likely an Isuzu 4WD, dual cab light truck.</i>	<i>Facilitate drill crew commute and carry light supplies daily.</i>
Lab-at-Rig®	Reflex (Imdex Limited)	<i>A self-contained, trailer-mounted unit, towed by 4WD.</i>	<i>Providing XRF and XRD analysis in the field.</i>
Solids Recovery Unit (SRU)	AMC (Imdex Limited)	<i>A self-contained, trailer-mounted unit, towed by 4WD, or skid-mounted unit.</i>	<i>Used to minimise the environmental footprint of DD drilling operations. It will re-circulate drilling water and provide sample for the Lab-at-Rig.</i>
Forklift	DSD	<i>Rubber tyred, small forklift.</i>	<i>Will be based at the laydown yard to assist with movement of bulk consumables and core trays.</i>

Provide any additional information if required.

Numerous 4WD vehicles will be involved in field activities for the full duration of the program (i.e. from initial reconnaissance trips, through drilling, and up to rehabilitation stage). All vehicles associated with the drill program will be required to limit movements to existing tracks and those tracks/pads approved for creation under this PEPR (i.e. any off-road/track vehicular travel will need to be approved by the MSDP Coordinator under the proviso of special circumstances).

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## Low Impact Exploration Activities

Will low impact exploration activities be conducted that are not covered by the Generic PEPR for Low Impact Exploration Activities in South Australia ( <a href="http://minerals.dmitre.sa.gov.au/publications_and_information/ministerial_determinations">http://minerals.dmitre.sa.gov.au/publications_and_information/ministerial_determinations</a> )? If Yes, describe each low impact activity.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
As part of the DET CRC technology deployment for the Mineral Systems Drilling Program, several low impact seismic surveys are planned. Firstly, a short (1-2km length) surface reflection/refraction seismic profile. Secondly, a vertical seismic profile (VSP) acquired down 1-2 completed drill holes from the MSDP. The majority of activity will be on existing station tracks or access tracks to drill sites.		
Limited additional vehicle movement off tracks may be required and will involve a light vehicle and skid steer loader (without bucket or digging attachments), driving portions of the 1-2km seismic line. In this situation, vehicles will drive over the top of in-situ low shrubs such as salt bush and blue bush, in the most direct and practicable route. Vehicles will then be required to re-use the same tracks on exit, to avoid the unnecessary creation of multiple tracks. Any off-track vehicle movements will be designed to: avoid water courses; avoid stands of more significant or established vegetation; and minimise potential for erosion.		
<u>Surface Seismic Profile</u> The program will initially involve both a long offset and short offset druggable geophone layout, using an accelerated weight drop (45kg) from a hitch-mounted hoist on a light vehicle. An additional test will involve using a skid steer-mounted 375kg weight drop. Receivers will then be used to compare depth to basement estimations using reflection versus sparse refraction methods.		
<u>Vertical Seismic Profile (VSP)</u> VSP is to be collected down 1-2 drill holes to provide calibration and velocity data for processing surface seismic profiles. The seismic source will be a weight drop mounted to a skid-steer loader.		
Location: Surface seismic profiles and VSP will be acquired at, and close to, drillholes 15DDSM001-003. Geophones may be laid out up to 2km from each of these drill holes, as detailed above.		

## Drilling Activities

Will exploration drilling activities be conducted? If yes, fill out the below table	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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EL	Drilling type	Drill hole size (mm)	Max. No. of drill holes	Max. drill hole depth (m)	Max. No. of sumps required at each site	Max. size of sumps (LxDxW m)	Average footprint of each drill pad (m <sup>2</sup> )	No. of sites requiring pad excavation	Average volume of material to be excavated (excluding sumps if applicable)
Section 15 - Area C	Diamond Core	NQ2 (75.7mm) HQ3 (96.0mm)	5	1,000m	1	5x2x3	(20x30m) =600m <sup>2</sup>	1	(20x30x0.5x0.2) =60m <sup>3</sup>
<b>TOTAL</b>			5	5,000m	5	150m <sup>3</sup>	3,000m <sup>2</sup>	1	60m <sup>3</sup>

## Drill site preparation

If exploration drilling activities are proposed, describe the methods used to prepare sites, including; vegetation clearance requirements, site levelling and digging of sumps.

In terms of siting the proposed drill collars, there will be some degree of flexibility on a localised scale, with the objectives of the drilling program still being able to be met. In this regard, it is intended that wherever feasible, drill collars will be placed on the flattest terrain possible, thereby minimising the need for excavation and levelling of terrain.

It is anticipated that all five proposed drill sites will be able to be prepared by simply using a grader and/or a front-end loader to scrape the sparse saltbush/bluebush vegetation from the surface. Any cleared vegetation/debris will be pushed to one end of the drill pad, so it can be easily salvaged and re-spread during the rehabilitation process.

Minimal topsoil will be removed during the pad preparation process. It is intended that plant rootstock will be left intact as much as possible to aid in later re-growth, however, it is also necessary to ensure the drill pad is free of objects (rocks/sticks/etc) that could pose a trip hazard to personnel, or damage to vehicle tyres. Drill pads will be prepared to the dimensions stated above, with earthworks supervised by a GSSA representative.

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As a contingency, one drill site has been listed in the table above as requiring some excavation (minor cut & fill), although it is not expected that this will be required. It is assumed that only half of the pad would require excavation, to an average depth of 0.2m – see calculation in above table.

As a solids recovery unit (SRU) will be utilised during the program, it is intended that in-ground sumps will not be used. However, as a contingency, provision has been made in this document for the excavation of one sump per drill site. In the event that these sumps are actually excavated, these will be backfilled as soon as practicable after drilling.

### Sample Management

Describe the size of samples collected (including drilling samples and bulk sampling), collection methods, materials used when collecting the sample, sample disposal methods (including removal of sample bags), safety management and any other sample management requirements at the exploration site (e.g. tarps or matting used to contain cuttings, etc.). Include requirements for on-site geological sample management (splitting of archive samples, bag farms, core processing and storage).

The drilling method is conventional diamond coring – core size will be a combination of HQ and NQ. Coring will occur from surface. Core will be placed into core trays and taken to a designated local core farm (likely at Cariewerloo shearer's yards) for logging, etc, before later being transported back to Adelaide. A solids recovery unit (SRU), as developed by Imdex/AMC will be utilised during the entire drilling process. The SRU represents an industry 'best-practice' approach in that it captures all drill cuttings and fluids at the hole collar, and recycles fluids for further use. Solids are captured in an above-ground tank, thereby avoiding the need for conventional in-ground sumps. Upon the completion of each drill hole, the remnant sludge in the SRU will be disposed of at an approved waste facility in Port Augusta. At this stage no on-site core cutting is planned.

### Access Routes to Work Areas

<i>Will access off existing tracks be required? If Yes, detail the method(s) for gaining access and if vegetation clearance is required. Include the total area of disturbance (includes drill traverses and seismic lines) required off existing tracks (i.e. length (km) and width (m) of new tracks).</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Existing station tracks will be utilised wherever possible (Refer Photos 4&amp;5). Where this is not possible, it is anticipated that a new track will be formed by having vehicles drive over the top of in-situ low shrubs such as salt bush and blue bush, in the most direct and practicable route. Vehicles will then be required to re-use the newly established access to drill sites, to avoid the unnecessary creation of multiple tracks.</p> <p>New track routes will be designed to (where possible): avoid water courses; avoid stands of more significant or established vegetation; and minimise potential for erosion. Where practical, entry and exit points will be dog-legged to reduce visibility and try to reduce possibility of third party access.</p> <p>The use of earthmoving equipment to establish new tracks will be minimal, and will be confined to tasks such as moving rocks or large fallen branches. As previously detailed above, a grader and/or loader will be required to modify three small existing watercourse crossings near site 15DDSM003, to facilitate heavy vehicle movement. Detail on this has been provided above.</p> <p>The estimated length of new track required is 1,500m. Maximum width will be 4m. Total area of disturbance is estimated to be 6,000m<sup>2</sup>. Refer to Plans 1&amp;2 for location of main section of planned new access track (used to access site 15DDSM002).</p>		
<i>Will existing tracks require upgrading and/or maintenance? If Yes, detail the work required to upgrade/maintain existing tracks.</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>It is not anticipated that existing station tracks will require a significant amount of upgrade works prior to the drilling program commencing. It is, however, anticipated that the track network will require periodic ongoing maintenance work, given the movement of heavy vehicles and the fact that drilling will be taking place during the late-Autumn/Winter months.</p> <p>Track maintenance work will initially be offered to the relevant pastoral lease holders. It is expected that maintenance work will largely be confined to re-grading activities.</p>		

NB. Indicate planned access routes on a locality plan and distinguish between existing and proposed new access tracks (including fence lines)

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### Camp Sites, Storage and Equipment Laydown Areas

Using the below tables, provide a description of camp sites and/or laydown areas required. Indicate the camp site and laydown area on a locality plan.

Camp Site Details		
Is a camp site required? If No, no further information is required.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
What is the maximum number of personnel the camp site will accommodate?	15	
What will be the total area of vegetation clearance for the camp site?	0 ha	
If vegetation clearance is required, describe the methods used to prepare the site?		
No vegetation will need to be cleared as accommodation will comprise established Shearers Quarters and additional caravans. These will be sited at already cleared locations such as the Cariewerloo Woolshed.		
What will be the total area of disturbance for the camp site(s)?	0 ha	
Will any excavations be required? If yes, describe the purpose of the excavation and the maximum volume of material to be excavated (m <sup>3</sup> )	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<Include text here>		
Will the proposed ablation facilities be endorsed/approved for use by the Department of Health or local council (where applicable)? If no, provide a reason?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
The proposed ablation facilities will be a combination of: already established facilities on Pastoral Leasehold land; and temporary, portable trailer-mounted facilities (e.g. 'portaloos').		
Proposed infrastructure (includes hydrocarbon and water storage requirements)	Quantity	Description/Capacity
Bulk diesel storage	1	Self-bunded tank, of less than 30,000L capacity
Bulk water storage	1	Tank to hold fresh water, of approx. 20,000L capacity
Caravans	2-3	Likely 4 berth caravans for drillers
Portable toilet	1	Supplement existing toilet facilities with a portaloos.
Provide a description and justification of the camp location (e.g. previously cleared areas etc.), and any other relevant information if required.		
It is anticipated that the existing facilities/infrastructure at the Cariewerloo Woolshed will be utilised as the camp/base for this phase of the MSDP. Facilities include: shearers quarters, ablation block, kitchen/dining areas and water tanks. Existing buildings may also be supplemented with portable accommodation and ablation facilities (caravans/portaloos). No earthworks or vegetation clearing are anticipated, as there is already a large, cleared area available.		

Laydown Area Details		
Will laydown areas be required? If No, no further information is required.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Will the laydown area(s) be located at the same location as the camp site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
What will be the total area of vegetation clearance for the camp site?	0 ha	
If vegetation clearance is required, describe the methods used to prepare the site?		
Existing flat, clear land in the vicinity of the Cariewerloo Woolshed will be used as a laydown area.		
What will be the maximum area of disturbance (ha) for the laydown area(s)?	0 ha	
Will any excavations be required? If yes, describe the purpose of the excavation and volume of material to be excavated (m <sup>3</sup> )	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Proposed infrastructure (includes hydrocarbon and water storage requirements)	Quantity	Description/Capacity
Core racks	6	Temporary core racking will be established to allow logging of drill core.
Provide a description and justification of the location (e.g. previously cleared areas etc.), and any other relevant information if required.		
Existing flat, clear land in the vicinity of the Cariewerloo Woolshed will be used as a laydown area.		

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### Other Exploration Methods and/or Ancillary Activities

<i>Are any other proposed exploration methods (e.g. seismic) and/or ancillary exploration activities required? If Yes, describe the activity(s), site preparation, vegetation clearance, and safety and maintenance requirements.</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>It is likely that various forms of conventional downhole wireline logging will be conducted on the completed drillholes. Timing for this has not yet been determined, but it may require the drillhole collars to remain accessible for some weeks after drilling.</p> <p>Additionally, it is intended that one of the completed drillholes will be cased and retained in the short term as a 'representative stratigraphic' drillhole, so that further downhole surveys and tool calibrations can be conducted. It is likely that a variety of downhole survey tools will be deployed on this representative drillhole, at different times, by different operators/researchers, and possibly on multiple occasions. This will allow a range of data to be collected, and comparisons to be completed over time. The exact timing of these surveys will be dependent on a range of factors including: availability of hardware; availability of personnel; and budgetary constraints.</p> <p>The collar for the representative drillhole will need to remain intact, but it would be sealed to prevent entry to any fauna. The decision on whether to partially or completely case the hole will be dependent on ground conditions and whether aquifers are intersected. If multiple and/or confined aquifers are intersected, the hole will be cased according to the relevant guidelines to prevent cross-flow contamination.</p> <p>The timeframe for retaining access to the representative stratigraphic hole will be 12 months from date of drilling completion. At this point, an assessment of the need to retain access to the hole for a further 12 months will be assessed. It is expected that the total maximum term for retaining access to the hole will not exceed 24 months. Once the representative hole no longer needs to be retained for geoscientific purposes, the site and any access track to it will be rehabilitated.</p> <p>The relevant pastoral lease holder will be consulted in regard to retaining the proposed representative drillhole for the duration as outlined above. Any concerns raised, will be addressed and management protocols will be put in place in conjunction with the pastoral lease holder, for aspects such as maintaining ongoing access to the site, and keeping the pastoral lease holders informed of any visiting parties.</p> <p>No additional site preparation or vegetation clearance will be required.</p>		

### Water Supply and Management

<i>Will camp and/or drilling water be required? If Yes, describe how and where camp or drilling water will be sourced (e.g. groundwater, surface water, mains, etc.), and provide details on the volume of water required and how waste water or runoff water will be managed.</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Water will be required for both camp and drilling purposes.</p> <p>Discussions have already been held with the Pastoral Lease holders – indications are that they will be happy to provide excess dam water for the program at an agreed rate. The quantity of water required will depend on drilling conditions, however, it is not expected to exceed 10,000L per day at a maximum. As the drilling area is relatively close to the town of Port Augusta, contingency water could also be obtained through the local council at an agreed rate.</p> <p>As previously discussed above, drilling water will be captured, recycled and managed at the rig via a solids recovery unit (SRU). This will help minimise water loss that would otherwise occur at the surface if in-ground sumps were used. A contingency of installing an in-ground sump has been factored into this proposal, in case excess ground water is encountered during drilling. Additionally, spare water tanks will be available at the rig for surface water collection.</p> <p>Waste water from camp ablution facilities will be managed via the on-site and portable infrastructure. If required, items such as portable toilets and septic tanks can be pumped out by local contractors.</p>		
<i>If surface water will be used as a water source and/or if mineral drill holes will be used as a water supply well, is a licence for water extraction/usage required (refer to relevant NRM Water Allocation Plan - <a href="http://www.environment.sa.gov.au/managing-natural-resources/water-use/water-planning/water-allocation-plans/">http://www.environment.sa.gov.au/managing-natural-resources/water-use/water-planning/water-allocation-plans/</a>)? If Yes, attach a copy of the licence. Where a licence has not been obtained, include a statement confirming a licence will be obtained before the extraction and/or usage of water.</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
N/A		

### Management of Hazardous Materials

<i>Will activities be conducted in areas of known Uranium and Thorium mineralisation? If Yes, attach a Radiation Management Plan and confirmation of endorsement of the plan by the Environment Protection Authority (EPA).</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<i>Will any other hazardous material be encountered when exploring in the area? If Yes, list the types of hazardous materials and provide a management plan on how these materials will be managed.</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
No hazardous materials are expected.		

SECTION F – MANAGEMENT OF ENVIRONMENTAL IMPACTS

Use the table below (instructions provided) to identify all of the environmental, social and economic potential impact events that are likely to occur as a result of the proposed exploration activities, and how each of the identified impacts will be managed. Identified potential impacts events should be developed based on the proposed operational details and description of the environment and must have corresponding outcomes, measurement criteria and a monitoring plan.

Environmental Management - potential impacts/events, outcomes, measurable criteria and monitoring plan

			Likelihood of consequence (LH)				
			1	2	3	4	5
			Rare	Unlikely	Possible	Likely	Almost Certain
Severity of consequence (CQ)	A	Insignificant	Low	Low	Low	Low	Low
	B	Minor	Low	Low	Moderate	Moderate	Moderate
	C	Moderate	Moderate	Moderate	High	High	High
	D	Major	High	High	Extreme	Extreme	Extreme
	E	Catastrophic	High	Extreme	Extreme	Extreme	Extreme

How to fill out the table

- Based on the description of the environment and exploration operations, indicate which potential impacts are applicable to the proposed program. Please note that some potential impacts are applicable to all programs.
- For each applicable Potential Impact (and corresponding receptor), describe control and rehabilitation strategies that will reduce the risk of the Potential Impact to an acceptable level, and achieve the corresponding Environmental Outcomes.
- Conduct an impact assessment to determine if the control and rehabilitation strategies address the potential impact (i.e. reduce the risk to an acceptable level). Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level.
- For each applicable Potential Impact the corresponding Outcome and Outcome Measurement Criteria are required.
- Based on the description of the environment and proposed exploration activities, determine if any other Potential Impacts are applicable. For each new Potential Impact, describe proposed control and rehabilitation strategies, conduct an impact assessment, and develop corresponding Outcomes and Outcome Measurement Criteria.

1. NB: Use the above matrix to conduct an impact assessment for each potential impact.

Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
Stakeholders: <ul style="list-style-type: none"> <li>Freehold land owners</li> <li>Perpetual Lease holders</li> <li>Pastoral Lease holders</li> <li>Aboriginal Land (APY or MT Lands)</li> <li>Department of Defence</li> <li>State Government Departments.</li> <li>Local Government (Councils)</li> <li>Federal Government</li> <li>Native Title Parties</li> </ul>	Interference to: <ul style="list-style-type: none"> <li>Existing or permissible land use (includes loss of income).</li> <li>Buildings, structures, existing tracks or other infrastructure.</li> <li>Aesthetic values of an area.</li> </ul> Non-compliance with legislative requirements.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>Commence early consultation (phone and face to face discussions) with Pastoral Lease holders to explain scope of program, and to ascertain areas of concern.</li> <li>Meet with Pastoral Lease holders at an agreed frequency, to discuss drill program progress/issues, once program is underway.</li> <li>Have one designated landholder liaison officer for resolution of any issues.</li> <li>Drill holes will be situated well away from infrastructure and stock watering points (i.e. &gt;500m).</li> <li>Site drill holes at least 1km from any residence.</li> <li>Water for drilling to only be sourced from sites and in quantities approved by Station owners.</li> <li>Use existing track networks wherever possible.</li> <li>Vehicle speed limits will be imposed to reflect local road conditions and the proximity to any infrastructure or stock.</li> <li>Planning and coordination will be used to minimise the number of individual vehicle movements.</li> <li>Rehabilitate any new tracks and pads at the end of the program.</li> <li>Have resources in place to conduct periodic maintenance on station tracks impacted by increased traffic flow.</li> </ul>	2	B	L	Stakeholders are fully informed and satisfied with the proposed methods used to conduct exploration activities on their land.	Provide the information requested within the 'Complaints' section of the Exploration Compliance Report demonstrating that all reasonable complaints from stakeholders are resolved to the satisfaction of both parties prior to and ongoing during the course of exploration program.

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Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
			<ul style="list-style-type: none"> <li>- The condition of existing tracks will be remediated to the satisfaction of the landowner upon completion of the program.</li> <li>- Conduct early engagement (phone and face to face discussions) with any determined Native Title holders, or Native Title claimants, as to proposed work plan and requirements for Heritage Clearances in areas to be disturbed.</li> </ul>					
Stakeholder: <ul style="list-style-type: none"> <li>• DEWNR</li> </ul>	Interference to: <ul style="list-style-type: none"> <li>• Existing or permissible land use.</li> <li>• Buildings, structures, existing tracks or other infrastructure.</li> <li>• Aesthetic values of an area.</li> </ul> Non-compliance with legislative requirements	No <i>Applicable to programs located adjacent to or within parks and reserves</i>	N/A				For activities located within or adjacent to Regional Reserves, National, Conservation & Marine Parks only: No unauthorised interference with park management activities.	Provide confirmation that: <ul style="list-style-type: none"> <li>• Park access notification forms were submitted to DEWNR and the Department of State Development at least 10 days prior to entry into Regional Reserves, National, Conservation and Marine Parks.</li> </ul>
Flora and fauna and their habitats; includes Commonwealth and State scheduled species.	Loss/modification of native vegetation and associated habitats through the clearance of vegetation.	Yes <i>Applicable to exploration programs located within or impacting on native vegetation</i>	<ul style="list-style-type: none"> <li>- Interrogate relevant SA Govt. GIS databases to become familiar with presence of significant flora and fauna species in drilling area.</li> <li>- Information on significant species in drilling area will be included in staff inductions.</li> <li>- Use existing station tracks wherever possible.</li> <li>- Initial planned drillhole locations to be inspected in the field during the reconnaissance phase – hole locations to be modified if site is located within dense vegetation (e.g. if within an isolated stand of trees, move to adjacent grassland).</li> <li>- Drill sites will be located in naturally cleared areas where possible.</li> <li>- New track construction to take most direct, practical routes.</li> <li>- Tracks will be planned to utilise naturally open areas to avoid trees and densely vegetated areas.</li> <li>- New tracks will be constructed by driving across unprepared ground to retain root stock and minimise potential for erosion.</li> <li>- Any vegetation clearing activities should attempt to leave rootstock intact in soil, to promote new</li> </ul>	2	B	L	No permanent loss/modification of native flora and fauna populations and their habitats through: <ul style="list-style-type: none"> <li>• clearance,</li> <li>• fire,</li> <li>• other,</li> </ul> unless prior approval under the relevant legislation is obtained.	Maintain before, during and after photographic evidence of all exploration sites (e.g. drill sites, new track exit/entry points off existing tracks, costeans, camp sites, etc.) demonstrating: <ul style="list-style-type: none"> <li>• That the area and method of disturbance is consistent with that described in the PEPR.</li> <li>• No <sup>1</sup>uncontrolled fires occurred as a result of exploration activities. .</li> </ul> Representative photos to be included within the Exploration Compliance Report.

<sup>1</sup> Uncontrolled = no fires escape outside of work area (e.g. drill site).

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Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
			<p>growth after rehabilitation.</p> <ul style="list-style-type: none"> <li>- All vegetation clearing must be pre-approved by the MSDP Coordinator, and supervised by DSD staff or delegate.</li> <li>- During drilling phase, all vehicle movements to be limited to already created tracks and pads.</li> <li>- All new tracks and pads are to be rehabilitated after the drilling program is complete.</li> <li>- Fires for warmth will only be approved in pre-designated locations (e.g. camp fireplace, or in contained vessels, such as drums). Adequate firefighting equipment will need to be at hand.</li> <li>- No fires to be lit on fire ban days.</li> <li>- Hot-work permit system to be used for activities such as welding, grinding, oxy cutting.</li> </ul>					
All flora, especially listed species.	Loss/modification of the environment (biological, social and economic) through the introduction of weeds and pathogens.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- Interrogate relevant SA Govt. GIS databases to determine presence and extent of current weed infestation.</li> <li>- Make observations of current weed presence and distribution during the reconnaissance phase.</li> <li>- Any new earthmoving equipment to be brought on site is to be thoroughly washed off-site first. A visual inspection for introduced mud/soil is to be made by DSD personnel, prior to machinery operation.</li> <li>- All new vehicles entering the program area, or vehicles re-entering the program area after travelling on other unsealed roads, are to be cleaned at Port Augusta first, and be visually inspected. (Personnel to be made aware of various vehicle washing facilities in Pt Augusta).</li> <li>- Risk of weed introduction to be discussed with all new personnel coming to site as a part of induction process.</li> <li>- Risk of weed introduction is to feature as a periodic topic at weekly toolbox safety meetings.</li> <li>- Rehabilitated sites are to be revisited periodically. If weed infestation or increase in abundance of pre-existing weeds is noticed, selective spraying is to occur.</li> </ul>	2	B	L	No introduction of new species of weeds and plant pathogens, nor increase in abundance of existing weeds species.	<p>Provide a statement within the 'Compliance with Approved Programs' section of the Exploration Compliance Report, confirming that:</p> <ul style="list-style-type: none"> <li>• Vehicle logs were kept during the exploration program, demonstrating that all vehicles are clean and free of plant and mud material prior to entering <sup>2</sup>properties within the exploration licence(s) areas, unless otherwise agreed to with the relevant landholders.</li> <li>• Photographic evidence before and during exploration operations and after rehabilitation of disturbed sites was captured, demonstrating that no new weeds and plant pathogens were introduced, nor an increase in abundance of existing weeds recorded.</li> </ul>

<sup>2</sup> Properties = Freehold (cropping and grazing land), Perpetual/Pastoral Lease land, Council land, Regional Reserves, National, Conservation & Marine Parks, Aboriginal Lands, Commonwealth Land, etc.

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Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
All flora and fauna	Entrapment of fauna through open drill holes and excavations.	Yes <i>Applicable to exploration programs that involve drilling and/or require excavations.</i>	<ul style="list-style-type: none"> <li>- The use of a Solids Recovery Unit (SRU) during drilling means that the need for excavated sumps is unlikely.</li> <li>- In the unlikely event that excavated sumps are required, small windrows will be placed around edges, and plastic barricade fencing will be erected. The fencing will remain in place until the rehabilitation is complete.</li> <li>- Any sumps will be backfilled as soon as they are dry, and stockpiled topsoil will be replaced in the correct order.</li> <li>- PVC collars will be installed at all drillholes before the rig moves off the pad. All collars will have concrete plugs inserted immediately after drilling.</li> <li>- All drillhole collars that are no longer required for geoscientific purposes will be cut, plugged and buried as per rehabilitation guidelines.</li> </ul>	1	A	L	No fauna traps created as a result of exploration activities.	<p>Maintain before, during and after photographic evidence of all drill holes and and/or excavations demonstrating that:</p> <ul style="list-style-type: none"> <li>• All drill holes were permanently or temporarily capped/plugged immediately upon completion.</li> <li>• No fauna and livestock became trapped in drill holes and/or excavations throughout the duration of the program.</li> <li>• All rehabilitation is completed within 3 months of expiry of the E-PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period) unless otherwise authorised.</li> </ul> <p>Representative photos are to be included within the within the Exploration Compliance Report.</p> <p>Provide the information requested within the 'Rehabilitation' section of the Exploration Compliance Report.</p>
Aboriginal heritage sites	Disturbance to Aboriginal heritage.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- All vehicle movements are to be limited to existing station tracks where possible.</li> <li>- Where new tracks and drill pads are required, a Heritage Clearance Survey will need to be completed before any ground-disturbing activities can occur.</li> <li>- All personnel will be reminded of the possibility of Heritage sites existing, and the importance of not disturbing any such sites, during the induction process.</li> <li>- Heritage sites identified during the clearance survey process will be flagged in the field and avoided. Personnel will be notified of any heritage sites during the induction process, on maps, and at toolbox meetings, etc.</li> <li>- Any heritage sites identified during the surveys will be recorded on appropriate registers and reported to appropriate authorities.</li> <li>- Excavation activities will be avoided through use of an SRU at the drilling site.</li> </ul>	1	B	L	No disturbance to Aboriginal artefacts or sites of significance unless prior approval under the relevant legislation is obtained.	<p>Maintain a database and provide a statement within the 'Compliance with Approved Programs' section of the Exploration Compliance Report demonstrating that:</p> <ul style="list-style-type: none"> <li>• Heritage sites were not impacted during the conduct of the exploration program, unless prior approval has been obtained under the appropriate legislation.</li> <li>• Work ceased on discovery of a significant site and recommenced only after authorisation.</li> <li>• Aboriginal Heritage sites identified during the exploration program were appropriately recorded and reported to authorities if not previously known.</li> </ul>

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Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
European heritage sites and sites of scientific and environmental significance	Disturbance to European heritage sites and sites of scientific and environmental significance (e.g. geological monuments, fossil reserves).	No <i>Applicable to exploration programs located close to or within European heritage sites and sites of scientific and environmental significance</i>	N/A				No disturbance to European heritage sites and to sites of scientific and environmental significance unless prior approval under the relevant legislation is obtained.	Demonstrate no impact to heritage sites and sites of scientific and environmental significance by: <ul style="list-style-type: none"> <li>Maintaining evidence, including detailed maps showing sites compared to the location of exploration activities and photographic evidence of sites before and after the conduct of the exploration program.</li> <li>Providing a statement within the Exploration Compliance Report confirming sites were not impacted during the conduct of the exploration program.</li> </ul>
Soils/vegetation	Soil/vegetation contamination (e.g. hydrocarbons, rubbish, drill samples/cuttings, ablutions, other sources, etc.).	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>All bulk diesel or other hydrocarbon/chemical storage is to be banded in accordance with EPA guidelines.</li> <li>Designated refuelling areas are to be appropriately banded.</li> <li>At least one large spill kit to be present at the drill rig, and another at any bulk diesel storage.</li> <li>All personnel to be reminded in the induction of the need to clean up any small hydrocarbon spills, using shovels and green plastic bags.</li> <li>Any hydrocarbon spills &gt;5L are to be reported.</li> <li>All rubbish to be securely placed in bins or bags and disposed of at approved waste facility.</li> <li>Rubbish is not to be left in areas accessible to wildlife or vermin.</li> <li>Compliance with zero-rubbish policy is to be measured daily through workplace inspections.</li> <li>A port-a-loo will generally be available for use at each drill site.</li> <li>Ablution facilities will be available at all camp sites (either already established facilities, or portable facilities).</li> <li>Any excess drill cuttings from the SRU will be disposed of at an approved waste facility, be returned back down the drillhole, or be buried in sumps.</li> </ul>	2	B	L	No contamination of soil and vegetation as a result of exploration activities.	<p>Demonstrate that all domestic or industrial waste (includes general rubbish and hydrocarbons) is disposed of in accordance with the Environment Protection Act within 3 months after completion of the program, and that all fuel and chemicals are stored in accordance with EPA requirements, by providing:</p> <ul style="list-style-type: none"> <li>The name, location and contact details of the authorised waste disposal facility.</li> <li>A statement within the 'Compliance with Approved Programs' section of the annual Exploration Compliance Report confirming domestic and industrial waste was removed from all exploration sites and disposed of at an authorised waste disposal facility.</li> <li>Photographic evidence within the Exploration Compliance Report that all fuel and chemical storage facilities were managed in accordance with EPA requirements.</li> </ul> <p>Maintain photographs of all exploration sites and provide representative photos within the Exploration Compliance Report demonstrating that drill cuttings are either;</p> <ul style="list-style-type: none"> <li>removed from site and disposed of at a licensed facility, buried under a minimum of 30cm of soil, or in accordance with EPA Radiation Management Guidelines, and/or backfilled down the drill hole, within 3 months of completion of the program.</li> </ul> <p>Provide the information requested within the 'Rehabilitation' section of the Exploration Compliance Report.</p>

**EXPLORATION PEPR APPLICATION**

Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
Soils	Disturbance to the soil profile and topography and accelerated soil erosion caused by exploration activities (e.g. construction of sumps, new tracks and drill pads; ground compaction at laydown areas and camps, etc.).	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- Use existing tracks where possible.</li> <li>- Minimise potential for erosion on new tracks by not clearing low shrubby vegetation, before driving over it.</li> <li>- All vehicles to stick to established pads and tracks during the drilling phase.</li> <li>- Avoid tight bends on tracks and impose speed restrictions.</li> <li>- Utilise existing cleared and well trafficked areas for camp and laydown yards.</li> <li>- Use SRU to minimise need for excavation of sumps.</li> <li>- Site drillholes on flattest ground possible, to avoid cut/fill excavation.</li> <li>- Complete rehabilitation of new tracks and pads as per best-practice model – e.g. removing windrows, restoring original contours, lightly scarify where appropriate; replace topsoil and stockpiled vegetation.</li> </ul>	3	A	L	<p>Where soil disturbance occurs as a result of exploration activities, ensure that;</p> <ul style="list-style-type: none"> <li>• top soil quality and quantity is maintained</li> <li>• the soil profile and topography is reinstated to original conditions, and</li> <li>• there is no accelerated soil erosion.</li> </ul>	<p>Maintain before, during and after photographic evidence of all excavations, drill sites, camps, laydown areas and new tracks demonstrating that:</p> <ul style="list-style-type: none"> <li>• The soil profile and topography is reinstated to original conditions and is consistent with natural surroundings 3 months after completion of the program.</li> <li>• Where required, sufficient top soil is removed (depending on soil profile), stored separately from sub soil and reinstated (in the correct order) 3 months after completion of the program</li> <li>• There are no signs of accelerated soil erosion during and post rehabilitation of disturbed sites.</li> <li>• Representative photos to be included within the Exploration Compliance Report.</li> </ul> <p>Provide the information requested within the 'Rehabilitation' section of the Exploration Compliance Report.</p>
Surface hydrology	Alteration to surface hydrology - interference to surface drainage.	Yes <i>Applicable to exploration programs that are likely to impact on surface drainage channels.</i>	<ul style="list-style-type: none"> <li>- Use existing tracks where possible.</li> <li>- Where existing tracks need to be modified/improved at watercourses, use the minimum amount of earthworks to allow safe passage of vehicles.</li> <li>- Avoid any activities which could result in increased risk of erosion.</li> <li>- Avoid any infilling of watercourses.</li> <li>- Avoid creating windrows which could potentially block water flow.</li> <li>- Rehabilitate any modification made to watercourse banks upon completion of program.</li> </ul>	3	A	L	<p>No permanent modification to hydrological features caused by exploration activities without obtaining a water affecting permit from the relevant Natural Resource Management Board.</p>	<p>Provide before, during and after photographic evidence within the Exploration Compliance Report demonstrating that original drainage contours (water courses, and lakes) are consistent with the natural relief post rehabilitation within 3 months of completion of the program</p> <p>Alternatively, provide copies of water affecting permits within the Exploration Compliance Report.</p>
Groundwater/aquifer	Groundwater contamination: <ul style="list-style-type: none"> <li>• Contamination of aquifers through entry of pollutants from the surface.</li> <li>• Interconnection between aquifers.</li> <li>• Degradation of natural hydrostatic conditions (maintain pre-drilling pressures).</li> </ul>	Yes <i>Applicable to all exploration programs that may intersect groundwater</i>	<ul style="list-style-type: none"> <li>- Establish expected groundwater conditions in the area prior to drilling.</li> <li>- Alert drillers to the requirement to observe changing groundwater conditions during drilling.</li> <li>- Record pertinent details of any aquifers intersected.</li> <li>- Ensure only approved drilling products are used downhole (e.g. bio-degradable rod grease).</li> <li>- Ensure drillholes are not used for disposal of any unwanted hydrocarbons or chemicals.</li> <li>- Abandon drillholes in accordance with relevant M21 Regulatory Guidelines where aquifers have been intersected. For holes intersecting unconfined fractured rock aquifers, as expected,</li> </ul>	1	B	L	<p>Drill holes restored to controlling geological conditions that existed before the hole was drilled or where it is intended to re-enter the hole, the hole must completed with casing of adequate strength and the casing cemented so that all aquifers are isolated to prevent the movement of any fluids behind the casing.</p>	<p>Maintain evidence demonstrating that drill holes are decommissioned in accordance with the Department of State Development's M21 guidelines and/or specific conditions from DEWNR (Groundwater) within 3 months of completion of the program.</p> <p>Provide the information requested within the 'Groundwater' section of the Exploration Compliance Report.</p>

**EXPLORATION PEPR APPLICATION**

Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
			the hole will be backfilled with drill cuttings or cement; the PVC collar will be removed or cut below ground level; the hole will be suitably plugged; and topsoil minimum 30cm deep mounded over the hole location. - Ensure necessary casing and grout is either on site or readily available, in the unlikely event that confined or multiple aquifers are intersected.					
Soil/vegetation	Discharge of groundwater into the surrounding environment.	Yes <i>Applicable to all exploration programs that may intersect groundwater or where activities require the discharge of groundwater into the surrounding environment.</i>	<ul style="list-style-type: none"> <li>- All water used during the diamond coring process will be captured at the drill collar using the SRU.</li> <li>- Additional above-ground poly tanks will be on site to hold water in excess of the SRU's capacity.</li> <li>- Provision has been made for one additional in-ground sump at each drill site in case excess water is intersected.</li> <li>- Any further excess water will be disposed of via an approved off-site facility.</li> <li>- If required, drilling operations will cease to ensure that no groundwater runs beyond the drill pad.</li> </ul>	2	B	L	No discharge of groundwater outside of the exploration site (e.g. drill site) into the surrounding environment and no discharge of water into a watercourse unless prior approval under the relevant legislation is obtained.	Maintain photographic evidence of all drill sites demonstrating that groundwater was not discharged into the surrounding environment, unless water affecting activity permits were obtained allowing the discharge of groundwater into watercourses and/or lakes.  Representative photos and water affecting activity permits (where applicable) to be included within the Exploration Compliance Report.
Groundwater users	Interference to existing water users when extracting water from existing dams, water bores or mineral drill holes.	Yes <i>Applicable to all exploration programs that may require the use of water from existing dams, water bores or mineral drill holes.</i>	<ul style="list-style-type: none"> <li>- Water will only be sourced from the pastoral stations (either from dams or bores), after approval from the pastoral lease holders.</li> <li>- Provision will be made to source any required additional water from other approved sources – e.g. purchase water form council standpipes.</li> </ul>	1	A	L	No public nuisance impacts resulting from the extraction of water for exploration purposes unless prior approval under the relevant legislation is obtained.	Provide the information requested within the 'Complaints' section of the annual Exploration Compliance Report demonstrating that all reasonable complaints from stakeholders were resolved to the satisfaction of both parties, prior to and ongoing during the course of the exploration program. Where permits are required for the extraction and/or usage of groundwater, provide copies of the license or permit within the Exploration Compliance Report.
Community /Landholders	Noise, dust and other emissions (i.e. light and odour) emanating from exploration activities.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- All proposed drill sites occur in a rural environment, on expansive pastoral leases, with distant neighbours.</li> <li>- Consultation with affected lease holders has been ongoing and will continue, with appropriate channels in place to resolve any concerns that may arise.</li> <li>- All drill sites are situated at least 2km from the nearest occupied residences.</li> <li>- Minimal dust will be generated from drilling activities, as diamond coring will be used.</li> <li>- Night time vehicle movements will be minimal.</li> <li>- Vehicles may have various speed limits imposed in different areas, to limit dust generation from dirt roads, for example 25kph when driving past homesteads.</li> </ul>	2	A	L	No public nuisance impacts from noise, dust and other emissions emanating from exploration activities.	Provide the information requested within the 'Complaints' section of the Exploration Compliance Report demonstrating that appropriate action was taken to resolve reasonable landowner/community complaints, prior to and ongoing during the exploration program.

**EXPLORATION PEPR APPLICATION**

Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
The environment	Degradation of rehabilitated access tracks caused by third party access (includes previously closed and rehabilitated access tracks).	Yes <i>Applicable to exploration programs that create new access tracks</i>	<ul style="list-style-type: none"> <li>- Degradation of rehabilitated access tracks is unlikely to occur, given that drilling is occurring on privately owned pastoral leases (i.e. minimal through traffic).</li> <li>- Once rehabilitation is complete, access to tracks will be blocked and disguised with obstacles such as fallen tree trunks or branches.</li> <li>- New tracks will be doglegged off existing tracks.</li> </ul>	2	A	L	Rehabilitated access tracks remain permanently closed unless prior approval under the relevant legislation is obtained.	<p>Maintain before and after photographic evidence demonstrating that all tracks are closed and rehabilitated within 3 months of completion of the program.</p> <p>Representative photos are to be included within the Exploration Compliance Report.</p> <p>Provide the information requested within the 'Rehabilitation' section of the Exploration Compliance Report.</p>
The environment	Damage to infrastructure and loss of income through fire.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- Fires not permitted on fire ban days.</li> <li>- Hot works permits (internal management tool) will be required for activities such as welding, grinding, oxy cutting – i.e. firefighting provisions need to be in place.</li> <li>- All vehicles will be fitted with fire extinguishers.</li> <li>- Fire suppression units will be fitted to large plant such as the rig.</li> <li>- Fires for warmth/cooking will only be authorised in designated places, with firefighting tools at hand.</li> </ul>	1	B	L	No loss of infrastructure or income through fire as a result of exploration activities.	<p>Provide a statement within the 'Compliance with Approved Programs' section of the Exploration Compliance Report confirming that no <sup>3</sup>uncontrolled fires occurred.</p> <p>Alternatively, provide a report on the independent investigation of all <sup>3</sup>uncontrolled fires demonstrating that the operator could not have reasonably prevented the fire through the implementation of precautionary measures.</p>
Public safety	Injury or death to members of the public as a result of exploration activities.	Yes <i>(applicable to all programs)</i>	<ul style="list-style-type: none"> <li>- Given the drilling program is occurring on private pastoral leases, the likelihood of stray members of the public being present is reduced.</li> <li>- Only inducted personnel who have direct need to be in the work area of the rig will be permitted in close proximity to operations.</li> <li>- At drill sites near more major access tracks on to the stations, a physical barrier (e.g. safety fencing, bunting or line of cones) will be established around the entire site.</li> <li>- Any visitors to the drilling operations will undergo a visitors induction and will be required to be accompanied by a fully inducted staff member.</li> <li>- Warning signs, highlighting the hazards of drilling operations will be erected around the drill site.</li> <li>- Note that whilst the likelihood of such an incident occurring is rated as rare, the consequence has been rated as moderate, producing a risk ranking of 'Moderate'. This is deemed acceptable, given the highly unlikely likelihood, and the <u>safety measures</u> and <u>level of supervision</u> that will be present at the rig.</li> </ul>	1	D	M	No accidents involving the public that could have been reasonably prevented by the licensee.	<p>Provide a statement within the 'Compliance with Approved Programs' section of the Exploration Compliance Report confirming no accidents occurred involving the public during and after the exploration program.</p> <p>If an accident involving the public did occur, provide a copy of the independent investigation report within the Exploration Compliance Report demonstrating that the operator could not have reasonably prevented the accident through the implementation of precautionary measures.</p>

<sup>3</sup> Uncontrolled = fires that escape outside of the work area (e.g. drill site).

**EXPLORATION PEPR APPLICATION**

Receptor <i>Note: Lists are not exhaustive.</i>	Potential Impacts <i>Note: Lists are not exhaustive</i>	Is the Potential Impact Applicable (Yes or No)  <i>Note: some potential are applicable to all programs</i>	Control and rehabilitation strategies  <i>Note: Where the risk is not considered low after implementing control and rehabilitation strategies, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level (refer to MG22 Guidelines for more information)).</i>	Impact Assessment			Outcomes	Outcome Measurement Criteria (includes Monitoring Plan)
				LH	CQ	Risk		
Public safety, employees, contractors and the environment	Contamination of the environment when exploring for known uranium and thorium deposits  Public and employee/contractor exposure to low level radiation.	No <i>Applicable to exploration programs located within known uranium or thorium deposits.</i>	N/A				No increase in background radiation levels and employee/contractor exposure levels during the exploration program are within safe limits.	Maintain a database and provide a statement within the 'Compliance with Approved Programs' section of the Exploration Compliance Report demonstrating that; <ul style="list-style-type: none"> <li>• Radiation levels post exploration and rehabilitation is consistent with pre-existing background levels.</li> <li>• Employee and contractors exposure levels were within safe limits during the exploration program.</li> </ul>
<i>Other (if applicable)</i>								

# EXPLORATION PEPR APPLICATION

## SECTION G - PHOTOS

Include photographs in this section;

- that have been obtained during site visits, and
- that help describe relevant environmental and operational aspects in the PEPR

To insert photos, copy and paste the photo into the template below. Resize photos to fit 1 page width. Ensure that all information about each photo is completed and refer to the photo No. in the relevant section of the PEPR.

Site ID/details	Date taken	Photo No. & PEPR Section ref.	Easting (GDA94)	Northing (GDA94)	Zone	Comments
Proposed Hole Site 15DDSM002	27/02/15	Photo 1. Landform and Topography	723335	6406002	53	Thin development of sandy/silty topsoil, with surficial gravel (lag) accumulations. Looking East.



## EXPLORATION PEPR APPLICATION

Site ID/details	Date taken	Photo No. & PEPR Section ref.	Easting (GDA94)	Northing (GDA94)	Zone	Comments
In vicinity of proposed site 15DDSM004	27/02/15	Photo 2. Landform and Topography	717656	6408763	53	General view of mildly undulating topography in proximity to proposed drill site, looking NW.



## EXPLORATION PEPR APPLICATION

Site ID/details	Date taken	Photo No. & PEPR Section ref.	Easting (GDA94)	Northing (GDA94)	Zone	Comments
In vicinity of proposed site 15DDSM004	27/02/15	Photo 3. Native Vegetation	717656	6408763	53	General view of ubiquitous chenopod shrubland in proximity to proposed drill site, looing South.



## EXPLORATION PEPR APPLICATION

Site ID/details	Date taken	Photo No. & PEPR Section ref.	Easting (GDA94)	Northing (GDA94)	Zone	Comments
Proposed Hole Site 15DDSM001	27/02/15	Photo 4. Access to Work Areas	724654	6408343	53	Showing proximity of main Cariewerloo access road to proposed drill site. Looking East.



## EXPLORATION PEPR APPLICATION

Site ID/details	Date taken	Photo No. & PEPR Section ref.	Easting (GDA94)	Northing (GDA94)	Zone	Comments
In proximity to proposed drill site 15DDSM003	27/02/15	Photo 5. Access to Work Areas	739888	6404152	53	Showing nature of existing station tracks in proximity to proposed drill site. Looking East.



# EXPLORATION PEPR APPLICATION

## SECTION H – MAPS

Provide a map(s) showing the following information that is located adjacent to or within the proposed area of operations (where applicable);

- tenement boundaries,
- cadastral information,
- existing surface contours,
- existing vegetation,
- location of the proposed exploration operations (includes drill holes, existing and new access tracks, drill traverses, camp sites, laydown areas and other applicable information) and/or the target exploration area(s),
- location of existing ephemeral and permanent rivers, creeks, swamps, streams or watercourses and water management structures,
- location of houses and homesteads, existing roads, rails, fences, transmission lines, buildings, dams and pipelines,
- known sightings of listed species on a locality plan/map,
- location and extent of all environmentally sensitive areas, and
- any relevant land use types (e.g. Parks and Reserves, Aboriginal Freehold land, Woomera Prohibited Area etc.).

### ***Attach maps here***

Please refer to email attachments for Plans 1&2, as follows:

- Plan 1 – MSDP Drillhole Location Plan
- Plan 2 – Environmental Sensitivity Map

## SECTION I – ADDITIONAL INFORMATION

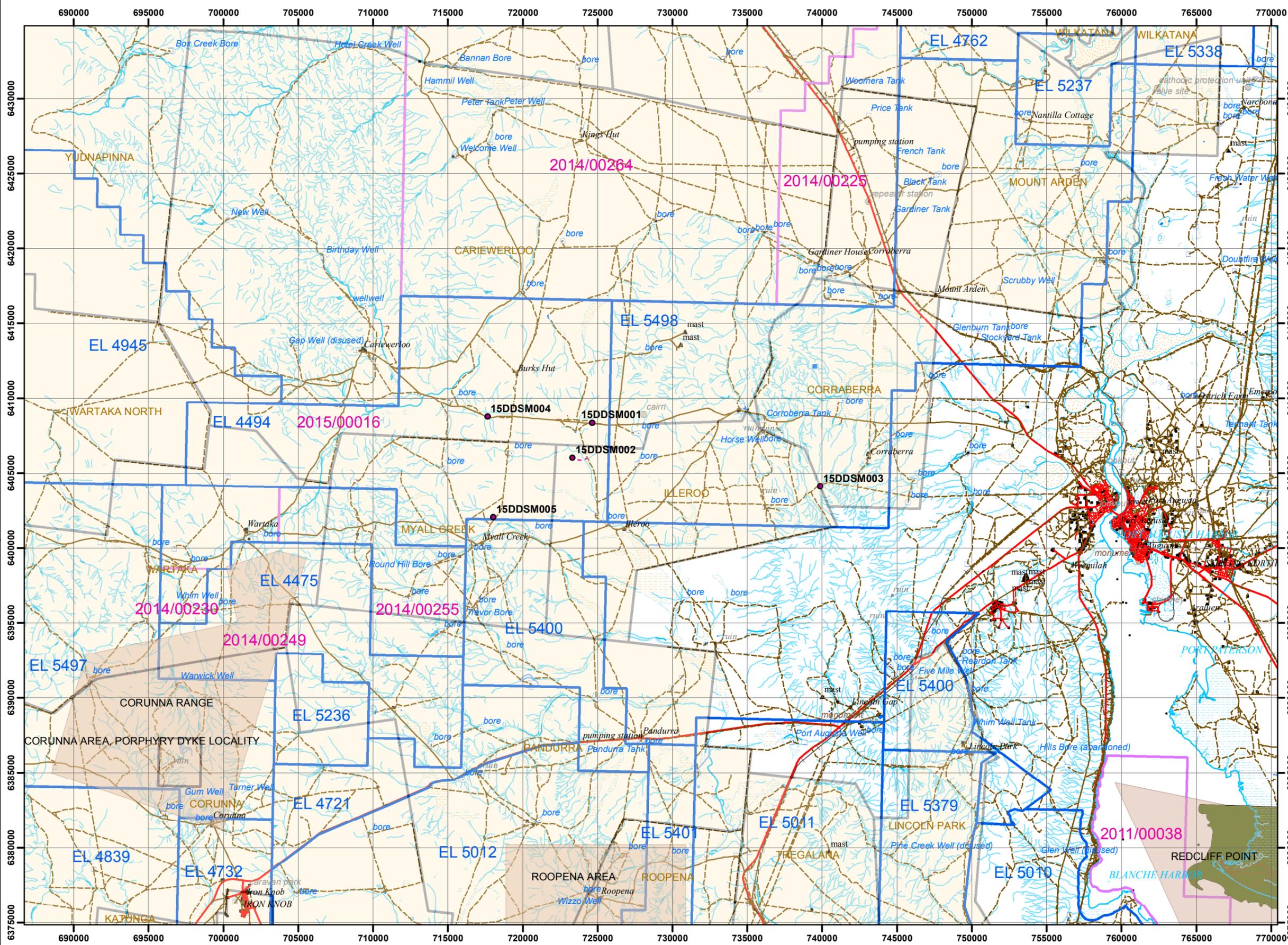
### **Additional information**

List any other supporting information and/or documents submitted with the application.

N/A

# MSDP Drillhole Location Plan

- ### Legend
- MSDP - Planned Drillhole Locations (5)
  - - - Proposed Access Tracks
  - ▭ Pastoral Lease Boundaries
  - ▭ Geology Monuments
  - ▭ Mineral and Opal Exploration Licences
  - ▭ Mineral and Opal Exploration Licence Applications
  - Highway
  - Secondary Road
  - Secondary Road (unsealed)
  - Minor Road
  - - - Track
  - - - Private Access; Mall
  - Underpass
  - Parking Bay
  - Coastline (Mean High Water Mark)
  - Marine Features
  - Land Features
  - Localities
  - Building
  - Ruin
  - Minor Landmark Object
  - ▲ Mast, Tower
  - Monument
  - Tank
  - Dam (small)
  - Bore, Well
  - Powerlines
  - Railway
  - Siding
  - Watercourse
  - River
  - Channel, Drain, Canal
  - Connector
  - ▨ Lake - Intermittent
  - ▨ Lake - Mainly Dry
  - ▨ Land Subject to Inundation (STI)
  - ▨ Land Subject to Flooding (STF)
  - Dam
  - Reservoir
  - Conservation Park



Map generated on 31 March 2015

Topographic data supplied by  
 Geoscience Australia - National Mapping Division, ACT.  
 Department for Environment, Water and Natural Resources, SA.

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 Department of State Development  
 GPO Box 1264, ADELAIDE South Australia 5001  
 Phone (08) 8463 3000

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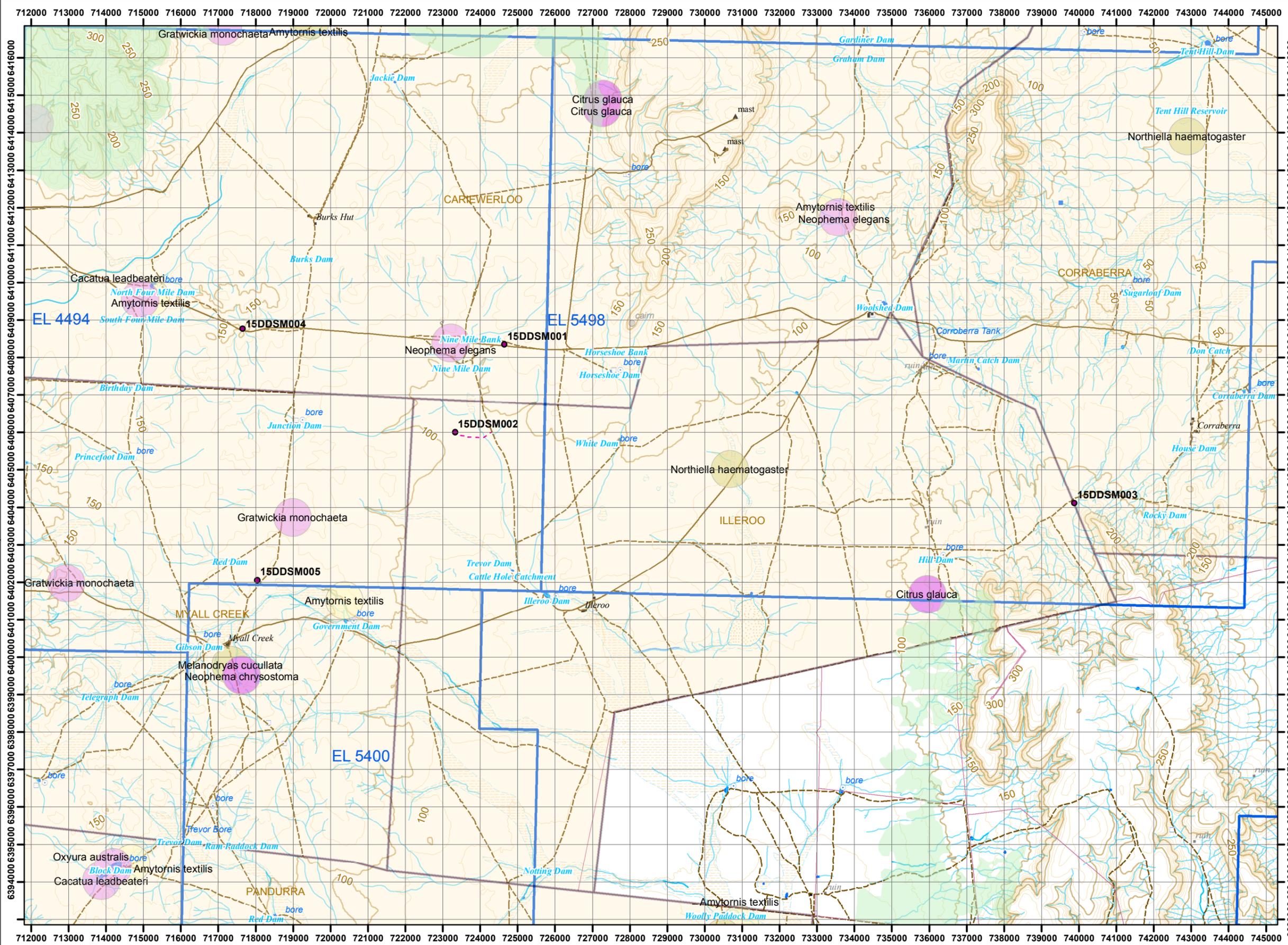


1:250,000

Coordinate System: GDA1994 MGA Zone 53  
 Projection: Transverse Mercator GDA 1994



# Environmental Sensitivity Map



- ### Legend
- MSDP - Planned Drillhole Locations (5)
  - Proposed Access Tracks
  - Forest Or Shrub
  - Pastoral Lease Boundaries
  - Mineral and Opal Exploration Licences
  - Cadastral Parcels
  - Vulnerable
  - Rare
  - Vulnerable
  - Rare
  - Rated at subspecies level
  - Rated at SSP level
  - Secondary Road (unsealed)
  - Track
  - Building
  - Ruin
  - Minor Landmark Object
  - Mast, Tower
  - Tank
  - Dam (small)
  - Bore, Well
  - Contour
  - Index Contour
  - Depression Contour
  - Watercourse
  - River
  - Channel, Drain, Canal
  - Connector
  - Quarry
  - Lake - Mainly Dry
  - Land Subject to Flooding (STF)
  - Dam

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1:100,000

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Projection: Transverse Mercator GDA 1994

