



## ENVIRONMENTAL INFORMATION FOR MINERAL EXPLORATION LICENCE HOLDERS IN SA

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### Introduction

The following information has been prepared by the Government of South Australia to assist mineral exploration licence holders (explorers) to identify, understand and effectively manage environmental factors that may be applicable to their licence area. The information will be particularly useful when planning field programs and in the preparation of a “Program for Environment Protection and Rehabilitation (PEPR)” for approval by government.

### General Environmental Information

General data on environmental associations, regional information and basic biological information is available from [www.naturemaps.sa.gov.au](http://www.naturemaps.sa.gov.au) (including downloadable GIS data on park boundaries). This will provide a broad visual understanding of the nature of the environment and enable a basic interpretation of the biological communities, species present and areas of remnant native vegetation.

### Conservation and National Parks with resource access (Joint Proclamation Parks)

Requirements of the Minister for Environment and Water for entry and activities within a park are included in the proclamation for the park. Park proclamations can be obtained from the Coordinator, Mining and Conservation on 8124 4748 or [DEWMiningReferrals@sa.gov.au](mailto:DEWMiningReferrals@sa.gov.au)

### Parks and reserves - park management and boundary

The legal boundary for parks and reserves is the digital boundary. As such explorers and their contractors should not rely on fence lines, lake edges or abrupt changes in vegetation cover for the definition of the boundaries. Boundary digital information is available for downloading off the Department for Environment and Water (DEW) website at [www.naturemaps.sa.gov.au](http://www.naturemaps.sa.gov.au) or from the Department for Energy and Mining, Mineral Resources Division (MRD) online Resource Information Gateway (SARIG) at <https://map.sarig.sa.gov.au/>

The management plan for reserves should be consulted for further information on areas of high conservation value. Management plans are available at:

[www.environment.sa.gov.au/managing-natural-resources/Park\\_management/Management\\_plans](http://www.environment.sa.gov.au/managing-natural-resources/Park_management/Management_plans)

### Proposed/pending parks and reserves

The explorer should note that a park may be simultaneously-proclaimed (for conservation and exploration/mining access) as a reserve under the *National Parks and Wildlife Act 1972* during the period of the exploration licence. Explorers will be consulted by State Government when considering any proposal for a new park over an existing tenement area. Any new activity within a park after the date of proclamation will require the approval of the Minister for Environment and Water. Activities are not permitted on parks where new proclamations, pursuant to the *National Parks and Wildlife Act 1972*, exclude new and existing rights of entry.

### Flora and fauna

The explorer should identify the sensitive species, communities and environmental systems present within a licence area and determine the extent to which the proposed work program may affect these. Where potential effects are identified, explorers should plan and implement activities in order to avoid/minimise impacts on those features. A buffer should also be applied around the licence area to consider species occurring adjacent to the tenement.

Although it is not necessary to list all species and features present, particular attention should be paid to species and communities listed with a conservation status under the *National Parks and Wildlife Act 1972* (NPW Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Explorers should familiarise themselves with listed species occurring in the area to avoid any activity that may be detrimental to local flora and fauna populations or ecological communities. Initial information on the presence or absence of sensitive species, communities and environmental systems can be found using the DEW interactive online mapping tool *NatureMaps*, available at

<https://data.environment.sa.gov.au/NatureMaps/Pages/default.aspx>

For almost all exploration PEPRs the information contained on NatureMaps will be sufficient. However if you require greater detail on the occurrence of flora and fauna you will need access to the Biological Databases of South Australia (BDBSA). The BDBSA is a central access point for all biological data within South Australia and can be accessed via:

[www.environment.sa.gov.au/Knowledge\\_Bank/Information\\_data/Biological\\_databases\\_of\\_South\\_Australia](http://www.environment.sa.gov.au/Knowledge_Bank/Information_data/Biological_databases_of_South_Australia).

More detailed information on nationally-protected species and ecological communities under the EPBC Act is available at [www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999/what](http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999/what).

Information on threatened species management in South Australia is available at

[www.environment.sa.gov.au/managing-natural-resources/Plants\\_Animals/Threatened\\_species\\_ecological\\_communities/Threatened\\_species/Threatened\\_species\\_in\\_SA](http://www.environment.sa.gov.au/managing-natural-resources/Plants_Animals/Threatened_species_ecological_communities/Threatened_species/Threatened_species_in_SA)

### **Privately owned reserves**

In some areas of South Australia land may be managed for conservation purposes by private property owners. This will become evident when initial contact is made with property owners at the Notice of Entry stage under the Mining Act. Where access is sought to a privately owned reserve, the explorer should liaise closely with the reserve's owner in order to fully understand the reserve's environmental values and co-design strategies to ensure that exploration activity does not compromise these values. DEW recommends that the explorer consults with the landowner over the development of a PEPR.

### **Sanctuaries**

Sanctuaries are declared under the *National Parks and Wildlife Act 1972*, through an agreement between the Minister and the land owner in an effort to conserve the plants and animals for which the land is a natural habitat. The presence of a sanctuary will become evident when initial contact is made with property owners at the Notice of Entry stage under the *Mining Act 1971* (Mining Act). Where access is sought to a sanctuary, the explorer should liaise closely with the land owner in order to fully understand the sanctuary's environmental values and co-design strategies to ensure that exploration activity does not compromise these values. DEW recommends that the explorer consults with the landowner over the development of a PEPR. General information on sanctuaries can be found at [www.environment.sa.gov.au/managing-natural-resources/Ecosystem\\_conservation/Sanctuaries](http://www.environment.sa.gov.au/managing-natural-resources/Ecosystem_conservation/Sanctuaries).

### **Vegetation Heritage Agreements (VHA)**

Vegetation Heritage Agreements are established between the landholder and the Minister for Environment and Water for the protection of native flora and fauna. The presence of a VHA can be identified on SARIG and is likely to become evident when initial contact is made with property owners at the Notice of Entry stage under the Mining Act. Where access is sought to a VHA, the explorer should liaise closely with the land owner in order to fully understand its environmental values and co-design strategies to ensure that exploration activity does not compromise these values. DEW recommends that the explorer consults with the landowner over the development of a PEPR. For more information on VHA's visit the website at [www.environment.sa.gov.au/managing-natural-resources/Native\\_vegetation/Managing\\_native\\_vegetation/Heritage\\_Agreement\\_Scheme](http://www.environment.sa.gov.au/managing-natural-resources/Native_vegetation/Managing_native_vegetation/Heritage_Agreement_Scheme).

### **State Heritage**

The Heritage Places Act 1993 offers special protection to state heritage places and to objects or designated places of geological, palaeontological, speleological or archaeological significance. Exploration and mining activities are subject to the provisions of the Heritage Places Act 1993. Information on heritage sites and places within the state can be found at [www.environment.sa.gov.au/topics/heritage/sa-heritage-register](http://www.environment.sa.gov.au/topics/heritage/sa-heritage-register).

A state heritage place or object and a place designated as having geological, palaeontological, speleological or archaeological significance cannot be excavated or disturbed, and no geological, palaeontological, speleological or archaeological specimen or artefact can be removed from it, unless a permit has been obtained from the Council or delegate. Information on permits required under the Heritage Places Act 1993 can be found at [www.environment.sa.gov.au/topics/heritage/sa-heritage-council/permits](http://www.environment.sa.gov.au/topics/heritage/sa-heritage-council/permits).

Furthermore, any land, regardless of designation, cannot be excavated or disturbed without a permit from the Council if there is known or reasonable cause to suspect that the excavation or disturbance is likely to result in an archaeological artefact of heritage significance being discovered, exposed, moved, damaged, or destroyed. The finding of any archaeological artefact of heritage significance must be reported to the Council.

If you require additional information on state heritage, please contact the Permits Officer on (08) 8124 4960 or email [DEWHeritage@sa.gov.au](mailto:DEWHeritage@sa.gov.au).

### **Fossil Reserves**

Under the Crown Land Management Act 2009, land may be designated as a fossil reserve. At present, Lake Callabonna and Lake Palankarina are the only fossil reserves in South Australia. Both the Department for Environment and Water (DEW) and SA Museum have a management interest in such reserves. When planning or conducting exploration operations within a fossil reserve, the explorer should liaise with the NPWS District Ranger (contact via [DEWMiningReferrals@sa.gov.au](mailto:DEWMiningReferrals@sa.gov.au)) and the Senior Collections Manager, SA Museum, to ensure that the particular concerns and regulations for the reserve are met.

### **Historic Shipwrecks and Underwater Cultural Heritage**

In South Australian state waters\*, historic shipwrecks and historic relics must not be interfered with, damaged, disturbed or removed, or a protected zone entered, unless a permit has been obtained from the Minister for Climate, Environment and Water or the delegated authority. The finding of any historic shipwreck or historic relic must be reported to the minister or the delegated authority (Historic Shipwrecks Act 1981).

In Commonwealth waters\*, protected underwater cultural heritage (shipwrecks, aircraft or other) must not be directly or indirectly disturbed, damaged or removed unless a permit has been obtained from the commonwealth Minister for the Environment or the delegated authority. The finding of any protected underwater cultural heritage (shipwreck or aircraft) must be reported to the minister or the delegated authority (Underwater Cultural Heritage Act 2018).

The Delegated Authority in South Australia is the Manager, Heritage South Australia, Department for Environment and Water (contact via [DEWHeritage@sa.gov.au](mailto:DEWHeritage@sa.gov.au)).

\* State waters include inland waters (rivers and lakes), Gulf St Vincent, Spencer Gulf and four proclaimed historic bays (Anxious Bay, Encounter Bay, Lancelotti Bay and Rivoli Bay). Commonwealth waters include all other coastal waters below the low-water mark.

### **Surface water and groundwater matters**

The explorer should consider the legislative requirements of the *Landscape South Australia Act 2019* (Landscape Act) and the Mining Act when conducting exploration operations that may impact on surface and underground water, particularly in relation to proposed drilling programs.

#### Legislative requirements

The explorer is required to adhere to the objectives and principles of the Landscape Act and any landscape plan or water allocation plan that may apply to the licence area. Exploration activities that could block, capture or divert the flow of water may require a water affecting activity permit from the relevant landscape board. To determine if your activity will require a WAA permit go to

[www.statewide.landscape.sa.gov.au/](http://www.statewide.landscape.sa.gov.au/)

A water allocation plan may be in place in areas where a valuable groundwater resource has been identified and is being activity managed. These areas are known as "Prescribed Wells Areas". To determine if such a plan applies to your licence area go to [www.statewide.landscape.sa.gov.au/](http://www.statewide.landscape.sa.gov.au/) or to SARIG for the location of Prescribed Wells Areas in SA.

#### Groundwater conditions and management requirements

In South Australia, groundwater occurs in a range of aquifers or aquifer systems including fractured rock and sedimentary aquifers. On occasions, multiple aquifers and/or artesian conditions may be encountered. Generally, the separation between the aquifers can be quite distinct while at other locations the separation is less evident. Water quality and water yields can also vary significantly between aquifers, therefore it is important to maintain the integrity of aquifer separation when completing or rehabilitating exploration drill holes. All exploration drill holes that intersect multiple, confined, or artesian aquifers must be completed or rehabilitated in accordance with the *Mineral Exploration Drillholes—General specifications for construction and backfilling* Information Sheet M21 which can be found at [www.energymining.sa.gov.au/minerals](http://www.energymining.sa.gov.au/minerals)

It is the responsibility of the exploration licence holder to ensure compliance with the above requirements. Where non-compliance is identified, significant penalties and enforcement actions, under the *Mining Act 1971*, and/or the Landscape Act may be imposed.

#### Groundwater information

An interrogation of the Department for Environment and Water, Groundwater Data Application (GD) can further inform of the likelihood of aquifers that may be intersected in the subject area, and therefore help to identify what management strategies will need to be considered for the proposed exploration drilling activities. The GD site can be found at [www.waterconnect.sa.gov.au/Systems/GD/](http://www.waterconnect.sa.gov.au/Systems/GD/).

The likelihood and nature of aquifers that may be encountered will determine the class of water-well driller required for drilling in a particular area. As an example, if drilling will penetrate the aquifers of the Great Artesian Basin, the driller must be a Class 3 Well Driller. For further information refer to the *Minimum Construction Requirements for Water Bores in Australia* at [www.adia.com.au/resources/waterwell-sector/water-bore-construction](http://www.adia.com.au/resources/waterwell-sector/water-bore-construction).

#### Drilling inspector notification

Prior to commencing drilling operations that are likely to intersect groundwater, you are requested to advise the Department for Environment and Water's Drilling Inspector of the name of your drilling contractor and the type of drilling equipment to be used. This information is to be advised at least fourteen (14) days prior to the commencement of any drilling where groundwater is likely to be intersected. In the event of artesian conditions being encountered during drilling, the Drilling Inspector must be contacted within twenty-four (24) hours. The Drilling Inspector can be contacted by email at [DEWDrillingInspector@sa.gov.au](mailto:DEWDrillingInspector@sa.gov.au) or by telephone at 08 8463 6841 or mobile 0428 828 569.

#### Water supply wells

In prescribed areas water users are required to have either a water licence or a Ministerial authorisation under the NRM Act to take water from a surface water or groundwater resource.

In line with licensing conditions in prescribed areas, water licensing applies to the use of water during the conduct of exploration activities, unless exemptions apply (see below).

There is a Ministerial Authorisation which permits water to be taken in The Far North Prescribed Wells Area for the purpose of the supply of water to exploration camps; for the drilling and construction of wells; for pump testing of wells; and for the construction of private roads required for exploration purposes. This authorisation does not apply where the water extraction occurs within 5 km radius of a Great Artesian Basin spring (defined as a spring sourced from the Great Artesian Basin).

Outside of prescribed wells areas, exploration drill holes may be used as a temporary water supply well during an exploration drilling program. These holes must be rehabilitated in accordance with an approved PEPR and the MRD M21 guideline. Where it is intended for these holes to be completed as a long-term water supply well (i.e. required for a period of time greater than that allowed in the approved PEPR) they will require a Well Construction Permit from the Department for Environment and Water and must comply with the *General Specification for Well Construction Modification and Abandonment* conditions under provisions of the Landscape Act. Such a well will also be subject to conditions prescribed by any natural resources management plan and/or water allocation plan applicable to the subject area. Within a prescribed wells area, a water authorisation may be required prior to the use of any groundwater for exploration purposes.

#### **Wetland of International importance (Ramsar Wetlands)**

Ramsar wetlands are recognised as a matter of national environmental significance under the EPBC Act. The Directory of Important Wetlands in Australia provides a knowledge base of the many flora and fauna species that depend on individual wetlands, information about their social and cultural values and some of the ecosystem services and benefits they provide. The Directory and further information can be found at [www.environment.sa.gov.au/topics/water/water-and-the-environment/wetlands](http://www.environment.sa.gov.au/topics/water/water-and-the-environment/wetlands)

#### **Great Artesian Basin springs**

The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin (GAB) springs is protected under the EPBC Act. Activity near GAB springs requires careful management as unstable soils and vertical leakage zones may be present. This could result in vehicles becoming bogged when travelling off existing tracks.

A Program for Environment Protection and Rehabilitation (PEPR) should identify the location of spring vents, wetlands and any vertical leakage zones within the proposed work area to ensure that environmental impacts to these springs and associated spring environments are avoided or minimised. Generally, a buffer zone of 5 km around springs is considered appropriate.

DEW would appreciate being informed of any additional GAB springs that an explorer may find. The information can be provided to the South Australian Arid Lands Landscape Region. Contact detail can be found at [www.landscape.sa.gov.au/saal/home](http://www.landscape.sa.gov.au/saal/home)

#### **Salt lake and clay pan access**

Damage to lake margins and adjacent sensitive areas (e.g. drainage lines, samphire vegetation, gibber and lunettes) should be minimised. Special consideration must be given to the thickness of the crust, crust and sub-crust moisture levels, and the weight of the vehicles and equipment intended to be used on the salt lake or clay pan.

### **Weeds and pathogens**

DEW requests the explorer minimise the spread of weeds and pathogens, by ensuring vehicles, equipment and footwear are free of clods of soil and plant material particularly when off-road machinery enter the site. Hygiene measures are to include the entire vehicle (i.e. underbody, interior, ute and truck trays, engine bays) and all other machinery and equipment. For further information on what weeds of concern may be present in your licence area and how to prevent their spread contact the relevant landscape region office. Contact details can be found at [www.statewide.landscape.sa.gov.au/](http://www.statewide.landscape.sa.gov.au/)

### **Buffel Grass**

The *South Australian Buffel Grass Strategic Plan 2012-2017* can be downloaded from the Department of Primary Industries and Regions SA website at [https://www.pir.sa.gov.au/biosecurity/weeds\\_and\\_pest\\_animals/weeds\\_in\\_sa](https://www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa)

If any infestations of Buffel Grass are encountered during the drilling program, cleaning procedures should be implemented when leaving the infestation and the area of infestation avoided. The presence of Buffel Grass or other weeds of national significance in the exploration areas should be reported immediately to the relevant landscape region office. Contact details for the relevant office can be found at [www.statewide.landscape.sa.gov.au/](http://www.statewide.landscape.sa.gov.au/)

### **Phytophthora**

*Phytophthora cinnamomi* (Phytophthora) is a water or soil-borne plant disease that can kill certain species of native vegetation such as gum trees, grass trees, bottle-brushes and paperbarks. Once an area is infected with Phytophthora, eradication is not possible. Phytophthora is most likely to occur in the agricultural areas of the state where average rainfall is above 400mm. Distribution information and guidelines for the management of *P. cinnamomi*, is available at:

<https://www.environment.gov.au/biodiversity/invasive-species/publications/arrive-clean-leave-clean>

To find out whether Phytophthora is a risk that you need to manage contact your local landscape region office. Contact details can be found at [www.statewide.landscape.sa.gov.au/](http://www.statewide.landscape.sa.gov.au/)

### **Further information**

For further information on which area of DEW you need to contact, including landscape regions, please contact the Coordinator, Mining and Conservation on 8124 4748 or [DEWMiningReferrals@sa.gov.au](mailto:DEWMiningReferrals@sa.gov.au) . Contact MRD via the Exploration Regulation Team, ph 8463 3000 or [DEM.exploration@sa.gov.au](mailto:DEM.exploration@sa.gov.au)