

# **TRI-STAR ENERGY COMPANY**



## **ENVIRONMENTAL PLAN SUMMARY NEW CROWN 1**



## 1 INTRODUCTION

Tri-Star's New Crown 1 drilling project includes the drilling of an exploration well at a location ENE of New Crown. The New Crown 1 well will investigate the potential gas from the coals of the Purni Formation sequence to a depth of ±1000meters. The location for New Crown 1 has been selected following consideration of the potential impact the proposed activities may have on vegetation, wildlife and areas of cultural heritage significance.

A location map of the New Crown 1 drilling project is provided at Annexure 1 and the surface coordinates are Latitude: 25° 35' 1.54" S Longitude: 135° 13' 39.81" E.

## 2 PROJECT ACTIVITY DESCRIPTION

The New Crown 1 drill pad will be constructed with minimal levelling and clearance of vegetation. The clearing of large trees and shrubs will be avoided wherever possible. Erosion and sediment control measures will be implemented such as 'whoa boys' on sloping exploration tracks, appropriate drill pad construction, and minimisation of vegetation clearing.

Access to the New Crown 1 Well will be via existing roads and one proposed new access road. The drilling plant and equipment, personnel and supplies will be mobilised by road to the drill pad and camp site. Temporary camp facilities will be constructed nearby for the duration of the New Crown 1 drilling project. The camp site will require low level earthworks to level out the site and remove any vegetation.

## 3 ENVIRONMENT

New Crown 1 is located within the Endinda land system which is characterised by broadly undulating stony plains (lateritic) with relief of up to 10m. The project area falls within a broad drainage floor surrounded by gently undulating gibber plains. Vegetation at the site is typically sparse saltbush and southern bluebush shrubs (no upper canopy).

Mapping carried out has determined there is no vegetation or ecological community of national or NT significance within the clearing envelope and that the existing vegetation communities are common throughout the region.

A review of NT Flora and Fauna Atlas records indicate that 11 threatened fauna species and no threatened flora species have been previously identified within 50 km of the New Crown 1 drill site (threatened under the *TPWC Act* and/or *EPBC Act*). None of these threatened species were considered to be at risk from the proposed drilling project due to a variety of reasons such as non-preferred habitat type, small footprint size, and short term program.

The drill site is located in the north-western section of the Great Artesian Basin and may potentially intersect four geological layers that contain different aquifer types and water quantities/qualities.

## 4 RISK ASSESSMENT FOR THE NEW CROWN 1 DRILLING PROJECT

Risk Group	Potential Impact/Hazard	Management Measures
Water	Cross aquifer contamination.	<ul style="list-style-type: none"><li>• Design drill hole construction in association with industry best practice and NTG requirements.</li><li>• Tri-Star Energy and its contractors will be following Northern Territory Government requirements for the</li></ul>

Risk Group	Potential Impact/Hazard	Management Measures
		protection of surface and groundwater resources during exploration drilling.
<b>Water</b>	Contamination risk from produced water	<ul style="list-style-type: none"> <li>• Construct appropriately sized sump, mud pit, and flare pit to contain all recycled liquids from the drill hole (see Drilling Program for more details).</li> <li>• Use non-toxic drilling mud (see Drilling Program for more details).</li> <li>• Seal aquifers once encountered to ensure that any saline aquifers encountered during the drilling process are not discharged to the surface environment.</li> <li>• Additional monitoring of sump water will also be conducted prior to site rehabilitation to determine if there will be any residual impacts post rehabilitation.</li> </ul>
<b>Water</b>	<p>Groundwater drawdown which may lead to reduced availability to stakeholders (i.e. pastoralists).</p> <p>Reduced health of ground water dependent ecosystems (i.e. <i>Acacia peuce</i>).</p>	<ul style="list-style-type: none"> <li>• Engage local station owners about suitable local bore(s) and corresponding sustainable yields.</li> <li>• </li> </ul>
<b>Water</b>	Contamination of surface water or ground water.	<ul style="list-style-type: none"> <li>• Ensure all hydrocarbons are stored in accordance with Australian Standard 1940: 2004.</li> <li>• Weekly inspections to occur.</li> <li>• Follow <i>Waste Management Guidelines for Small Communities in the Northern Territory</i>.</li> <li>• Potentially contaminated surface water runoff to be directed away from non-contaminated areas.</li> <li>• Hazardous materials and wastes will be stored in appropriately labelled containers within purpose built dangerous goods and chemical storage containers. Containers will be self-bunded, ventilated and compliant with <i>AS1940:2004 Storage and Handling of Flammable and Combustible Liquids</i>.</li> </ul>
<b>Water</b>	Contamination of surface water or ground water.	<ul style="list-style-type: none"> <li>• Removal of all waste from site and disposal at appropriate facilities.</li> </ul>

<b>Risk Group</b>	<b>Potential Impact/Hazard</b>	<b>Management Measures</b>
<b>Water</b>	Sedimentation of surface drainage features.	<ul style="list-style-type: none"> <li>Erosion and sediment control measures will be implemented such as whoa boys on sloping exploration tracks, appropriate drill pad construction, and minimisation of vegetation clearing.</li> </ul>
<b>Biodiversity</b>	Injury or fatality to fauna (including threatened) species.	<ul style="list-style-type: none"> <li>The selection of drill site location and other infrastructure aimed at avoidance of habitat of importance to threatened species.</li> <li>Vegetation clearing to be conducted within approved boundaries.</li> <li>Vegetation clearing to be conducted using best practice techniques.</li> </ul>
<b>Biodiversity</b>	Localised destruction of habitat from vegetation clearing.	<ul style="list-style-type: none"> <li>Using existing Northern Territory Land Clearing Guidelines (NRETAS 2010) to inform clearing procedures and processes.</li> <li>Vegetation clearance planning will aim to clear the least about of vegetation as possible.</li> <li>All approved clearing boundaries to be shown on maps.</li> <li>Utilising best practice when clearing vegetation.</li> <li>Ensuring that the above commitments are incorporated into an environmental auditing process.</li> </ul>
<b>Biodiversity</b>	Weed introduction.	<ul style="list-style-type: none"> <li>Inspection of all vehicles, equipment, and machinery that enters the site.</li> <li>Do not drive vehicles off-road, especially after inspections have taken place.</li> <li>Staff awareness of existing weed infestations in the area.</li> <li>Minimise areas proposed for clearance to reduce germination chance of weeds.</li> <li>On-going monitoring of site to ensure no establishment of weed species.</li> </ul>
<b>Biodiversity</b>	Pest fauna attracted to general waste storage and disposal	<ul style="list-style-type: none"> <li>As part of inductions, staff will be made aware not to encourage fauna to site i.e. feeding.</li> <li>Maintain clean and tidy work areas to ensure native fauna are not attracted to the site, including provision of covered bins, e.g., dispose of leftover food appropriately.</li> <li>Regular removal of putrescible waste (weekly).</li> <li>As part of inductions, staff will be made aware not to encourage fauna to site i.e. feeding.</li> <li>No pets are allowed onsite.</li> </ul>
<b>Biodiversity</b>	Reduced habitat quality through soil and water contamination.	<ul style="list-style-type: none"> <li>Contain and clean-up of any leaks or spills as soon as possible</li> <li>Hazardous materials and wastes will be stored in appropriately labelled containers within purpose built dangerous goods and chemical storage containers. Containers will be self-bunded, ventilated and compliant</li> </ul>

Risk Group	Potential Impact/Hazard	Management Measures
		with AS1940:2004 <i>Storage and Handling of Flammable and Combustible Liquids</i> .
<b>Biodiversity</b>	Attraction of pest fauna to sump waters. Fauna drowning.	<ul style="list-style-type: none"> <li>Infill sump directly after completion of drilling activity.</li> <li>One edge of the sump(s) will be shallow enough to ensure that fauna will not drown.</li> </ul>
<b>Biodiversity</b>	Threatened flora species impact from groundwater extraction activities.	<ul style="list-style-type: none"> <li>Monitoring of water volume extracted to ensure that proposed volumes are not exceeded</li> <li>Adopt water use minimisation techniques wherever possible.</li> </ul>
<b>Historic &amp; Cultural Heritage</b>	Disturbance of artefacts or sacred sites	<ul style="list-style-type: none"> <li>No disturbance to known archaeological, historical or cultural features protected under the <i>Heritage Conservation Act (NT)</i>.</li> <li>Immediate cessation of works if historical or cultural material found or suspected.</li> <li>Immediate assessment of any new archaeological, historic or cultural discoveries during works.</li> <li>Include topics related to culture and heritage in inductions.</li> </ul>
<b>Socio-economic</b>	Increased noise and vibration in the local area	<ul style="list-style-type: none"> <li>Strategic siting of buildings and infrastructure</li> <li>The use of natural acoustic barriers (i.e. elevated terrain)</li> <li>Acoustically attenuated generators</li> <li>Noise reduction systems on mobile or stationary drill rig and equipment</li> <li>Acoustic design of buildings</li> <li>Shock absorbing (vibration dampening) devices or materials around primary sources of vibration</li> </ul>
<b>Socio-economic</b>	Reduced air quality (i.e. dust) in the local area	<ul style="list-style-type: none"> <li>Minimise areas to be cleared</li> <li>Utilise water truck along access tracks and drill pad (when required).</li> <li>Monitoring program</li> </ul>
<b>Socio-economic</b>	Increased traffic hazard on local roads	<ul style="list-style-type: none"> <li>Limited duration of drilling program as well as timing.</li> <li>Induction to staff to raise awareness about road regulations and common-courtesy.</li> </ul>

## 5 CONSULTATION

Consultation is important to establish and maintain communications on an ongoing basis with employees, contractors, landowners, traditional land owners, local communities and government agencies. To date consultation has included discussions with the landowners and the Department of Mines and Energy. Tri-Star will continue to engage with the relevant stakeholders as required.

Tri-Star's nominated liaison for the New Crown 1 drilling project is Emma Caughey, Land & Tenure Manager ([emma.caughey@tri-starpetroleum.com](mailto:emma.caughey@tri-starpetroleum.com)).

## ANNEXURE 1

