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Environment Division  
Department of Environment and Natural Resources  
Northern Territory Government  
Level 1, Arnhemica House, 16 Parap Road, Parap NT 0820  
GPO Box 3675, Darwin NT 0801

27 September 2019

Dear Mr. Purdon,

Santos QNT Pty Ltd (Santos) is the operator of exploration permits (EP) 161, located approximately 350 km south-east of Katherine in the Northern Territory (NT). On 6 June 2019, Santos received formal advice that the Environmental Management Plan: *McArthur Basin Civil and Seismic Program* (DENR EMP assessment document reference: NTEPA2019/0032-007~0005) was approved.

In accordance with Regulation 22 of Petroleum (Environment) Regulations, Santos proposes to modify the regulated activity for the above EMPs and is writing to the Minister to give notice and specify details of the proposed modification. The modification of the regulated activity relates to the installation of seismicity monitoring equipment on or adjacent to the existing cleared seismic line.

### ***Details of the Proposed Modification***

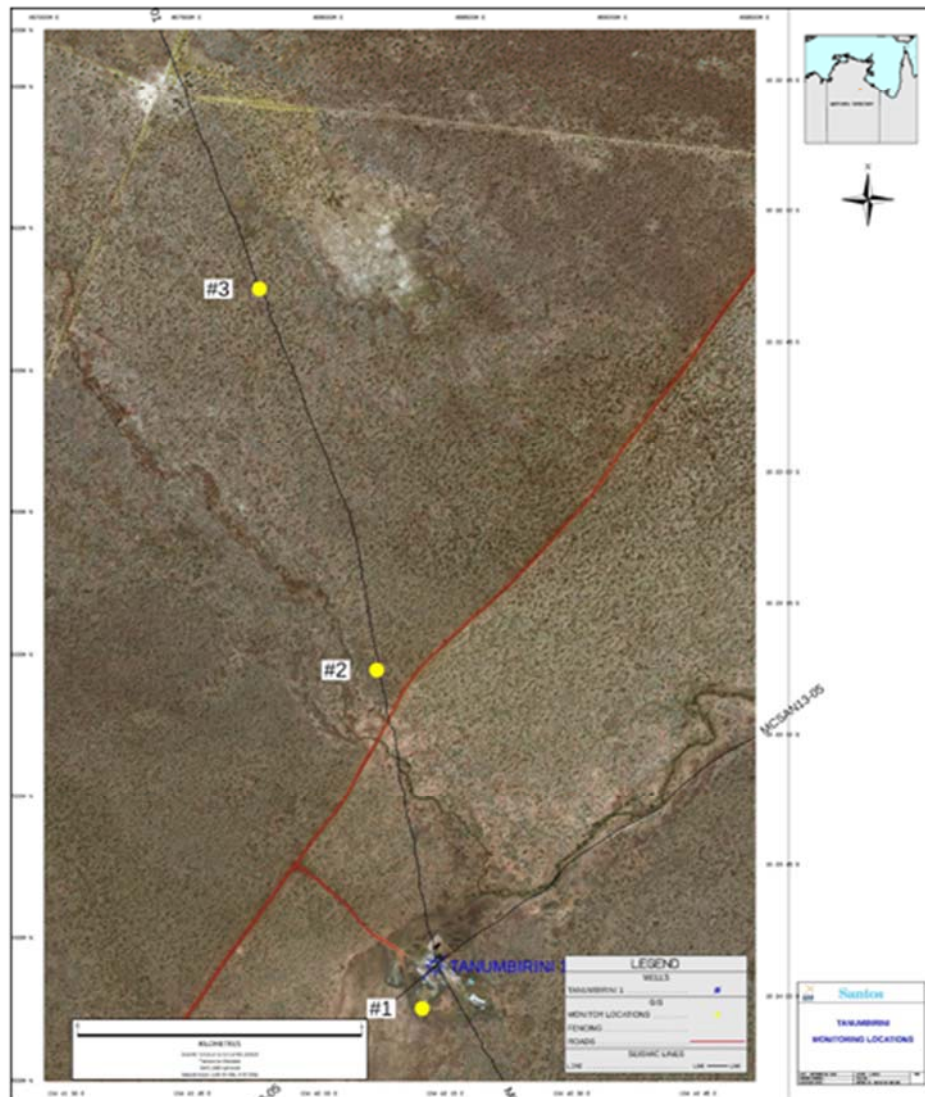
Santos is proposing to modify the EMP to include the installation of seismicity monitoring equipment. This modification encompasses the installation of three monitoring points along the existing cleared seismic line running through the Tanumbirini 1/2H location. This seismic line was approved in the McArthur Basin Civil and Seismic Program EMP.

The seismicity monitoring equipment will be constructed to comply Recommendation 5.7 of the Final Report of the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory which states: *'That to minimise the risk of occurrence of seismic events during hydraulic fracturing operations, a traffic light system for measured seismic intensity, similar to that in the UK, be implemented'*.

Three shallow surface bores of approximately 10m depth will be drilled. The locations of the shallow surface bores are shown in Figure 1. The bores will be used to undertake monitoring of seismic events during any hydraulic fracturing activities. The monitoring equipment installed at the base of each hole are sensitive tools for measuring minor displacement or movement in the subsurface, and are required to be away from any surface interference. The installation process at each location will also include two 1.5m auger holes to cement in posts holding solar panels and communications equipment.

## Site Location Details

Datum GDA94 / MGA Zone 53S				
Location	Easting	Northing	Latitude	Longitude
#1	468330	8186754	16° 24' 01.3304"S	134° 42' 12.2352"E
#2	468170	8187946	16° 23' 22.5306"S	134° 42' 06.8998"E
#3	467757	8189288	16° 22' 38.8368"S	134° 41' 53.0435"E



**Figure 1 Seismicity Monitoring Locations**

*Modification has not caused a new or an increase in environmental impact or risk*

The modification has not caused a new environmental impact or environmental risk and has not resulted in an increase in an existing environmental impact or environmental risk. No additional vegetation clearing is required.

The risk mitigation controls outlined in the existing EMP will not require any amendment to accommodate the modification. Santos has reviewed the EMP and the proposed modification will not result in an increase in likelihood, consequence or overall risk ranking.

### ***Cultural Heritage***

The additional activities are located on land that has undergone cultural heritage clearance, sacred site avoidance clearance and AAPA certification. The scope of works and the location of all proposed activities are covered by AAPA Certificate C2019/043.

### ***Stakeholder Engagement***

Santos QNT Pty Ltd has continued to engage with key stakeholders on an ongoing basis. Contact has been maintained as per the existing Land Access Agreement (LAA) and in accordance with the LAA, the landholder will be notified of these works.

If you require any further information or have any queries please don't hesitate to contact myself or Mitch Bird, Senior Environmental Adviser, at [mitch.bird@santos.com](mailto:mitch.bird@santos.com) or (07) 3838 3799.

Yours Sincerely,



David Close  
**General Manager – Onshore New Ventures**