

SANTOS IN THE NORTHERN TERRITORY

Beetaloo Basin Appraisal Activity

About Santos

Santos has been safely and sustainably developing resources across Australia and the Asia Pacific for more than 70 years. Founded in 1954, we are now a global energy company with operations across Australia, Papua New Guinea, Timor-Leste and the United States.

Our operations in the Northern Territory

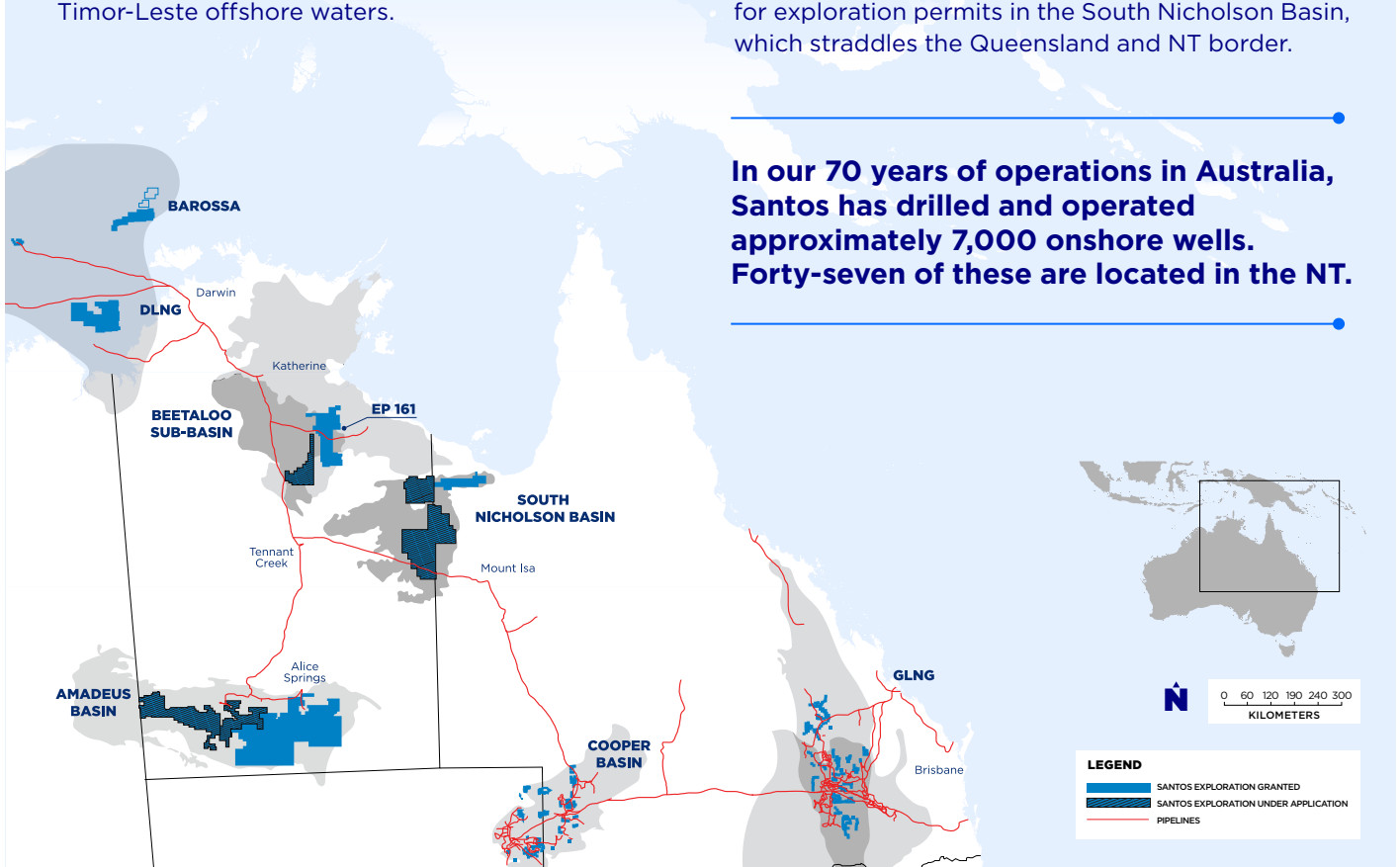
Santos has operated in the Northern Territory for decades and our projects have been a mainstay of NT jobs, prosperity and economic development.

Our operations in the NT include the Santos operated Darwin LNG, located at Wickham Point, which is a single train liquefaction and storage facility that started production in 2006. Gas was supplied via pipeline from the Bayu-Undan field in Timor-Leste offshore waters.

With Bayu-Undan having reached end of field life, the Barossa gas field, located in Commonwealth waters approximately 285 kilometres northwest of Darwin, will backfill Darwin LNG, with first gas production expected in 2025.

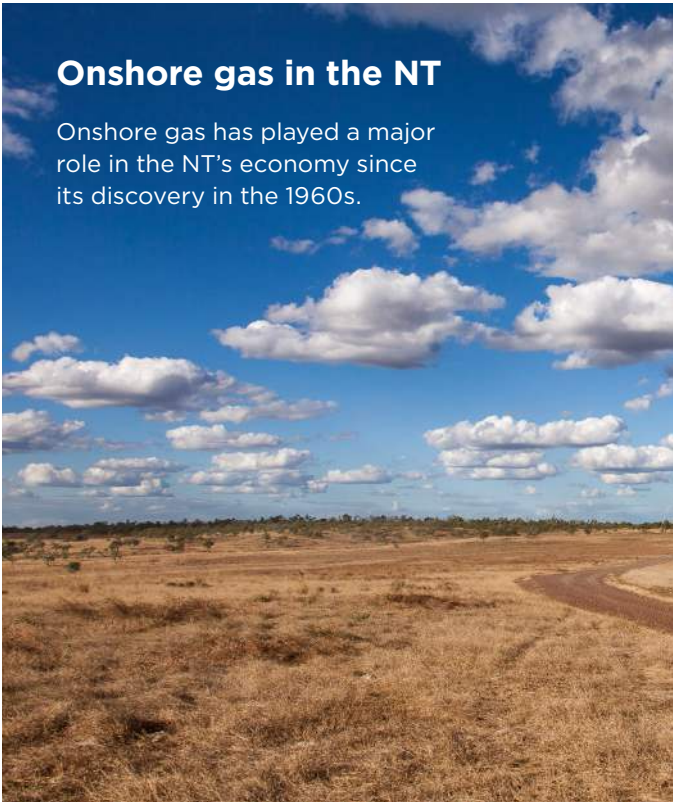
Onshore, Santos has two active exploration projects in the NT – in the Amadeus and Beetaloo Basins. Santos is also the registered holder of applications for exploration permits in the South Nicholson Basin, which straddles the Queensland and NT border.

In our 70 years of operations in Australia, Santos has drilled and operated approximately 7,000 onshore wells. Forty-seven of these are located in the NT.



Onshore gas in the NT

Onshore gas has played a major role in the NT's economy since its discovery in the 1960s.



Beetaloo Basin

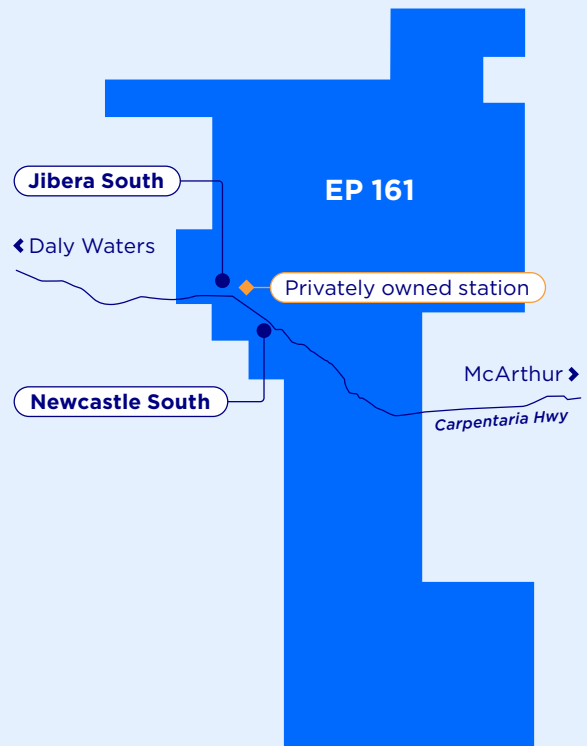
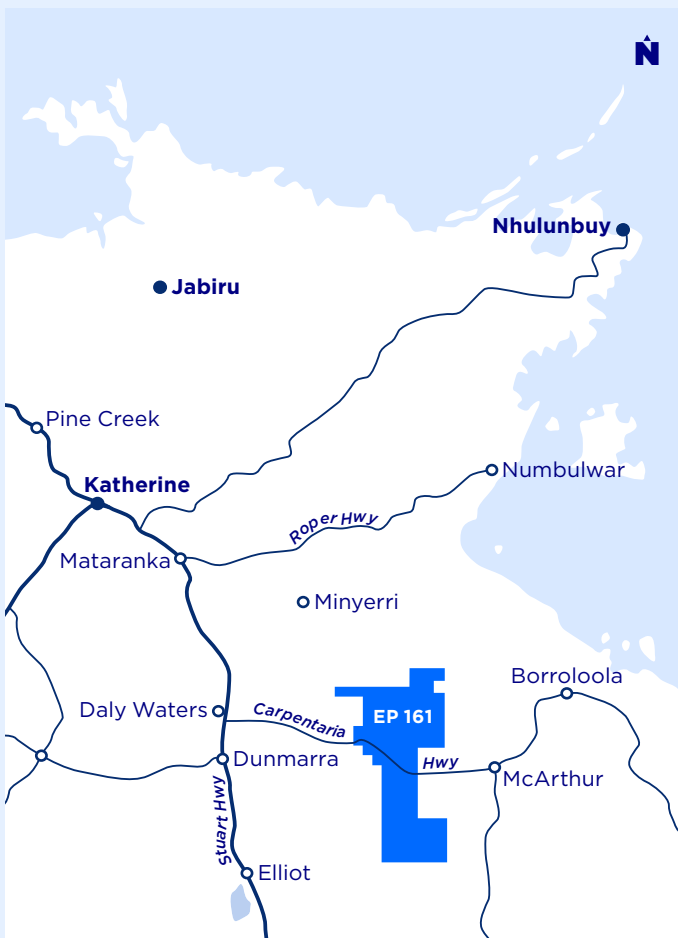
Natural gas is an essential part of Australia's energy mix and its ongoing production is required to ensure safe, reliable and affordable energy well into the future.

Development of natural gas in the Beetaloo Basin is an opportunity to deliver energy security and put downward pressure on gas and electricity prices for Australian households, manufacturers and businesses.

Santos has an exploration permit (EP) within the Beetaloo Basin. This permit is referred to as EP 161, located approximately 160 kilometres east of Daly Waters on a privately owned station. Since 2012, Santos has undertaken seismic and drilling exploration activity and it is now planning to undertake further appraisal works to determine whether the shale gas reservoir is commercially viable.

Santos is proposing to undertake appraisal activity on EP 161, subject to relevant approvals, from 2026.

Location of proposed appraisal activity



LEGEND

- ◆ Homestead
- Site locations
- Carpentaria Hwy
- Santos Tenement

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KILOMETRES

Appraising the Beetaloo

Santos is committed to carrying out appraisal activity in the Beetaloo Basin to determine the size, potential production rate, and characteristics of the shale gas reservoir. The appraisal phase follows successful exploratory drilling and will inform any future development proposals for the Basin. Responsible and successful appraisal of the Beetaloo Basin could, with the necessary agreements and approvals, lead to further development with potential benefits to the NT including:

- Jobs for local companies, increased regional and Aboriginal employment and procurement opportunities
- Royalties paid to the Territory which could be used for improving local community services, regional roads, more police, schools, hospitals, and infrastructure
- Community investment programs developed in partnership with Traditional Owners
- Appraisal gas recovered under the appraisal program may contribute to energy security for the NT, with increased domestic gas supply to the market.

NT Assessment and Approval

Santos is the registered interest holder and operator of exploration permit EP 161 located within the Beetaloo Basin. Santos is proposing to undertake works requiring approval under the *Petroleum (Environment) Regulations 2016* (PER). Regulation 6 of the PER states an interest holder who proposes to carry out a Regulated Activity must first submit an Environmental Management Plan (EMP) to the Minister for Lands, Planning and Environment for approval.

An EMP will only be approved if it can satisfy government requirements, including a requirement that environmental impacts and risks of the proposed activity will be reduced to a level that is as low as reasonably practicable and acceptable.

Environmental Management Plan

Santos is committed to minimising the effects of its operations on the local environment and is preparing a document titled 'Beetaloo Basin Appraisal Activity EMP', to cover proposed regulated activity on EP 161.

Regulation 7 of the PER requires Santos to undertake stakeholder engagement during the preparation of an EMP. This fact sheet provides a summary of the proposed regulated activity Santos plans to undertake as part of the project. For a full set of information required to be given to stakeholders under Regulation 7, including environmental impacts and risks associated with the activity, proposed environmental outcomes and possible impacts for stakeholders, a more detailed information pack will be provided directly to stakeholders or can be requested from Santos by contacting the project team on (08) 8919 1900 or at enquiriesNT@santos.com.

Overview of regulated activity

Proposed regulated activity anticipated to commence in 2026, subject to approval, includes:

- Earthworks for the creation of two new well pads, one located at Jibera South and one at Newcastle South
- The construction, operation, decommissioning, dismantling and removal of up to 12 wells in total, distributed across both Jibera South and Newcastle South well pads
- Hydraulic fracture stimulation (HFS) and well testing on all wells at both locations.
- Operating, testing, maintenance and decommissioning of installed wells
- Land clearing, earthworks, construction and installation of ancillary infrastructure (e.g. groundwater monitoring and extraction bores, access track, camp, laydown, gravel pits)
- Construction, operation, decommissioning, dismantling and removal of water management infrastructure (e.g. lean water pond, evaporation tanks, enclosed storage tanks) located on the two created new well pads
- Flaring may occur during the well testing phase, subject to the future agreement to, approval for, and practicality of, gas being delivered into a pipeline system for use
- Continuation of ongoing activity, previously authorised under other EP 161 EMPs.



Civil works and construction of site infrastructure

Well pads

The majority of project work will be undertaken across two well pads located at Jibera South and Newcastle South.

The well pads are proposed to be approximately 15 hectares each in size, with some additional infrastructure surrounding the site including construction of access roads, borrow pits and groundwater bores.

Construction will occur seven days a week until complete and include land clearing, earthworks for well pad formation, installation of new access roads where required, water storage pads, dams, bunds, borrow pits and campsites.

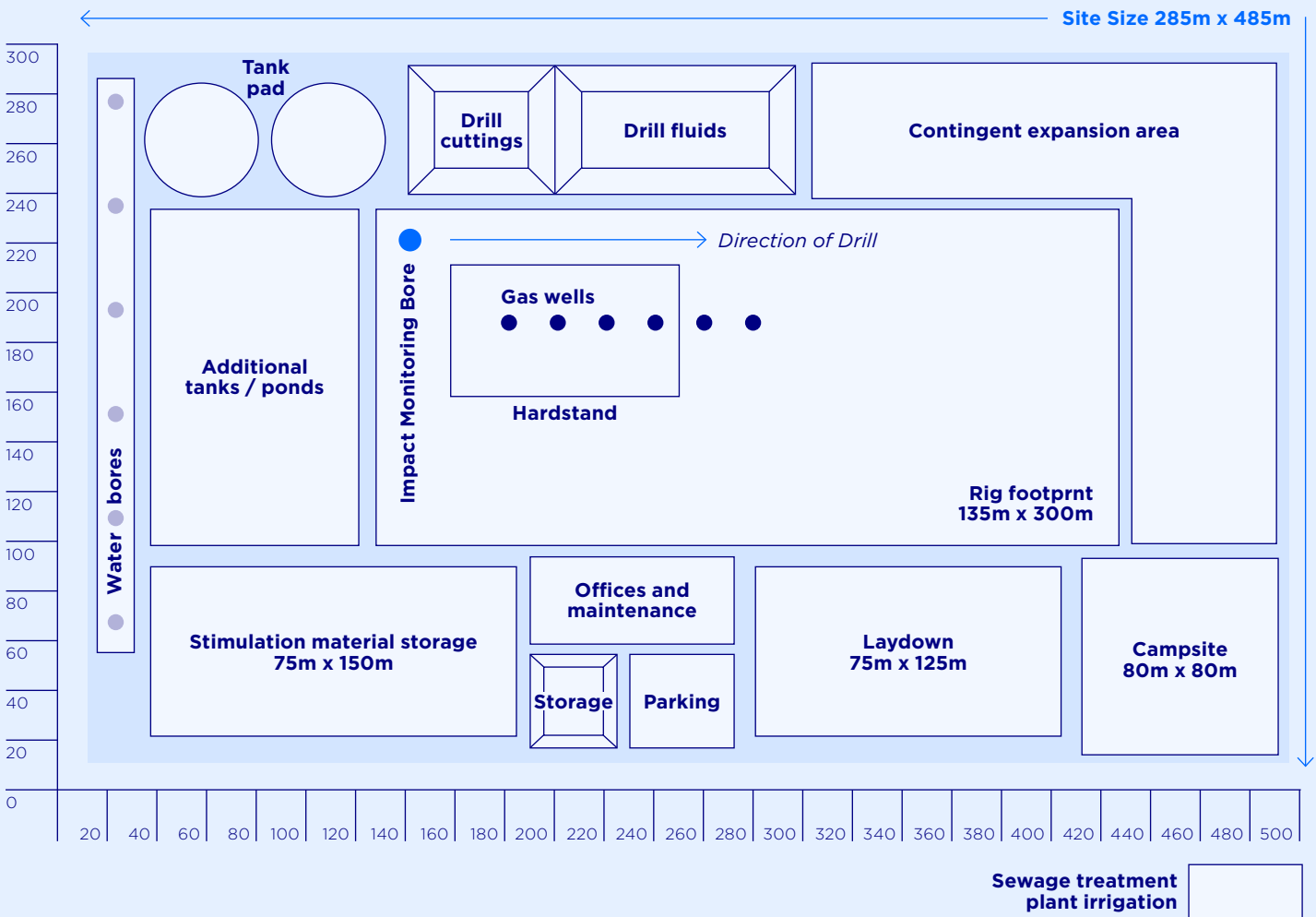
Water will be sourced from an existing water supply bore at the Jibera South location, or new bores to be installed, and either be stored in above ground water tanks, or within dams for onsite storage prior to use.

To ensure the resilience of the work surface, capping of the well pad with compacted clay or rubble might be required. This will be sourced from local borrow pits where available.

An example of a typical well pad layout is shown below.



Image: A typical well pad layout



Drilling

Up to 12 wells are planned to be constructed, operated and then decommissioned as part of the appraisal activity. Drilling depths are designed to minimise interactions with aquifers and proposed mitigations have been assessed to align with strict requirements under the *2025 Code of Practice: onshore petroleum activities in the Northern Territory* and *2025 Code of Practice: Well Integrity*. The Code ensures best practice processes are implemented and impacts are as low as reasonably practicable.

At each well pad location, wells are proposed to be drilled to vertical depths of between approximately three to four kilometres. Drilling will occur 24 hours a day, seven days a week for an anticipated eight-week period per well, using an appropriately sized rig for the proposed maximum depth.

The proposed horizontal wells have been estimated to be between 10 to 50 metres apart at the surface, wellhead to wellhead, and will target separate vertical shale intervals hundreds of meters apart.

Santos is required to prepare and operate under a *Well Operations Management Plan (WOMP)*. The WOMP is a requirement under the *Northern Territory Code of Practice: Well Integrity 2025* and ensures best practice management and mitigation measures.



Santos implements a range of additional controls to ensure safe well operation, including through its Spill Management Plan, Wastewater Management Plan, as well as its operating procedures.

Operations

Site office and camp facilities

Site offices will be installed for day-to-day site management. A temporary camp will also be constructed at each site to support regulated activity. The camp will be located within the well pad footprint and at its peak will accommodate 80 people.

Traffic

Access tracks will be utilised by both heavy and light vehicles. Approximately 45 traffic movements per day may occur during peak periods, however the majority of these are expected to occur between the camp and site. All bulk materials will be transported and delivered to site via road transport.

Minimising noise impacts

The appraisal wells have been located a minimum of 3.5 kilometres from any sensitive receivers. Assessment and mitigation of noise impacts will be done in accordance with the *Northern Territory Noise Management Framework Guideline 2018*.



Hydraulic fracture stimulation

Hydraulic fracture stimulation (HFS), also referred to as fracking, is a common technique when accessing shale reservoirs. It has been used globally by the oil and gas industry to develop more than two million wells, with no systemic issues identified.

Before gas can be extracted from a shale gas reservoir, fracture fluid is injected at high pressure into sections of rock, known as hydraulic fracturing. This creates localised networks of tiny fractures within the shale gas reservoir, that enable gas to flow into the well and then up to the surface.

Santos has been safely using this process in the Cooper Basin in South Australia and south-west Queensland for more than 60 years. By using hydraulic fracturing to extract gas, we are also able to limit our overall surface footprint in the area by reducing the number of production wells that need to be drilled.

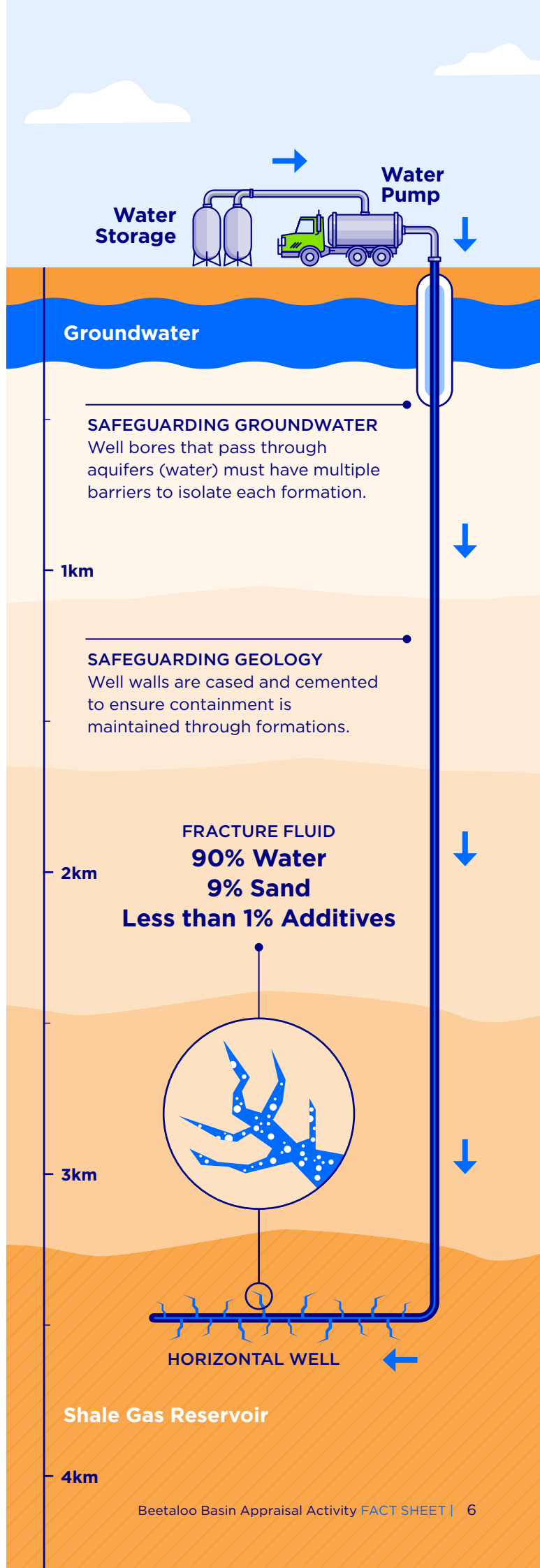
Fracture fluid is made mostly of water and sand. The fluid also contains a small amount of chemicals (about one per cent) which are found in common household products and are not hazardous. Other common non-hazardous uses for these chemicals include in swimming pools, toothpaste, baked goods, ice cream, food additives, detergents and soap.

The pumped fluids carry sand grains, known as proppants, which get into the fractures to stop them from closing when pumping stops, enabling the gas to flow to the surface. These open fractures then allow the gas to flow from the pore spaces in the target shale rock and into the gas well.



Approximately three kilometres of barrier rock separates fracture zones from useable water.

The shale rocks targeted for hydraulic fracturing in the Beetaloo Basin are approximately three to four kilometres underground, whereas aquifers containing potable water used for drinking and by industry are generally located within 300 metres of the ground surface.



Local environment and biodiversity

Santos is committed to minimising the impact of its operations on the local environment.

An environmental risk assessment will be completed as part of EMP development and all identified environmental impacts and risks of the proposed activity are to be reduced to a level that is as low as reasonably practicable and acceptable.



Sites will be fenced to minimise any impact to fauna and stock, and fauna spotters will remain onsite during clearing activity.

Site management

To manage soil, surface water and weed impacts, site specific erosion sediment control plans and a weed management plan will be developed, approved and implemented. This will include mitigations such as erosion controls, vehicle hygiene requirements and site monitoring.

Aboriginal cultural heritage

A Cultural Heritage Assessment is being developed and will be considered in preparing the Beetaloo Basin Appraisal EMP document.

This assessment will identify the cultural heritage value within the project area and inform work practices to ensure these are protected.

The site selection process was undertaken utilising the Aboriginal Areas Protection Authority and site surveys conducted with Traditional Owners.

Santos is committed to upholding the cultural values of Traditional Owners and will continue to work closely with knowledge holders in the management and protection of cultural heritage.

Production testing

Production testing is the process that occurs after a well is successfully drilled and fracture stimulated. The purpose of production testing is to understand the rate and volume of gas that can be extracted from a well. During this stage flaring is used to safely maintain and control flow.

During the appraisal phase of the project, extended production testing (EPT) will be carried out to evaluate the resources. Santos is separately considering opportunities for, and the viability of, capturing, processing and compressing the production test gas and then having this gas transported to market for use.

Water management

Santos understands how important water sources are to Traditional Owners, pastoralists and the community. When extracting gas, there are multiple controls in place to protect groundwater and the surrounding environment.

Protection of groundwater is strictly regulated in the NT. Groundwater monitoring will be undertaken which allows us to monitor natural variations in groundwater conditions, as well as verify there have not been any changes due to our activity.

Water extraction licence

As part of the appraisal program, groundwater will be required to be extracted from regional aquifers. Groundwater extraction is strictly regulated in the NT. Santos currently holds a *Water Extraction Licence (WEL)* under the *Water Act 1992* that permits extraction of up to 193.5 megalitres per year. Peak water extraction may be up to 750 megalitres per year for the proposed activity. To accommodate this additional requirement, Santos would seek to amend its licence or acquire other necessary authorisation such as the temporary transfer of another existing extraction licence.

Bore water storage

To fulfill the water demand requirements of hydraulic fracturing stimulation, up to 10 water bores may be installed. Above ground water storage tanks will be used to provide temporary water storage for use in the hydraulic stimulation process. Source water will either be trucked from nearby water sources, or piped from local water bores. The number and size of these tanks will vary depending on proposed methodology, however it is expected two to 10 tanks will be required on the well pad at any time.

Flowback water storage

After fracture stimulation, some wastewater fluids may be recovered from the well. The wastewater may comprise a mix of flowback fluid and formation fluid. Flowback fluid is fracture stimulation fluid returned to surface and after injection into the well has ceased. Formation fluid is naturally occurring water sourced from the target shale rock. These fluids will be mingled together and managed as a single wastewater source.

Wastewater recovered from the well may be re-used in subsequent hydraulic fracture stimulation activity. This limits the overall volume of wastewater that must be managed. Whilst wastewater is being stored, natural evaporation will be used to reduce the overall volume. After treatment, if it cannot be re-used, a small volume of residual wastewater will be removed off site and disposed of at a appropriately licenced waste management facility, and in accordance with the *2025 Code of Practice: onshore petroleum activities in the Northern Territory*.

Decommissioning and rehabilitation

When infrastructure and assets are at the end of their life, Santos will progressively rehabilitate the footprint back to its original condition as far as reasonably practicable.

As part of the well decommissioning process, cement plugs will be permanently placed in the well, with multiple barriers installed to isolate individual aquifers. This will result in a stable, plugged decommissioned well in accordance with the *2025 Code of Practice: onshore petroleum activities in the Northern Territory* and approved *Well Operation Management Plan*.

Working with Traditional Owners and landholders

Companies cannot explore for oil and gas until they have an agreement with Native Title Holders. Santos recognises and respects the connection Traditional Owners have to country. Across Australia, Santos works with 23 Traditional Owners groups and six Aboriginal Land Councils.

Due to the nature of our operations, Santos wouldn't be able to do what we do without deep engagements and partnerships with the people who host our infrastructure on their land. We have a proud track record of coexisting with farmers. During 70 years of operation, Santos has undertaken its operations in a manner that has resulted in little or no impact to our landholders, their property or their livestock. In addition, landholders and communities benefit from maintained roads, water for stock and other community investments.

Santos in the community

Santos has been a strong supporter of the NT community over the years, partnering with Larrakia Rangers, Larrakia Nation, Clontarf and Stars Foundations, NT Athletics, Aus Earth, Katherine School of the Air, Isolated Children's Parents Association and NT Major Events.

We are committed to working hand in hand with our host communities to deliver meaningful and long-lasting contributions that meet community needs and align with our Corporate Social Responsibility pillars.

Find out more: www.santos.com/community

Acknowledgement of Country

Santos acknowledges the Traditional Owners and custodians of the regions where we operate. We pay our respects to all First Nations people, cultures and Elders past, present and emerging.



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