

Annual Environmental Performance Report 2020

McArthur Basin Civil and Seismic Program

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Approved by	Santos QNT Pty
Date approved	9 October 2020

Signature and Certification

I/We hereby declare that the information provided in this annual environment performance report and accompanying documents is to the best of my/our knowledge, true and correct.

Asset/Project Approval


Signature	
Name (print)	Angus McIntyre
Position	Manager – Onshore New Ventures
Date	9/10/2020

Table of Contents

1.0	Introduction	1
1.1	Background	3
1.2	Contents of Performance Report	5
1.3	Assessment of Compliance	5
1.4	Evidence of Compliance	5
2.0	Demonstration of Compliance	6
3.0	Summary of Compliance	24
3.1	Overview of Compliance	24
3.2	Overview of Items Found Not Compliant or Partially Compliant	24
3.2.1	Ministerial Approval Conditions	24
3.2.2	Environmental Performance Standards	24
3.2.3	Regulatory Reporting	25

Tables

Table 1	Compliance Descriptors	5
Table 2	Compliance with Ministerial EMP Approval Conditions	6
Table 3	Compliance with Environmental Outcomes and Environmental Performance Standards McArthur Basin Civil and Seismic Program Rev 4	9
Table 4	Compliance with Mandatory Reporting Requirements	18

Figures

Figure 1	Timing of Regulated Activities Conducted During the Reporting Period	2
Figure 2	Location of Regulated Activities	4

Abbreviations and Units

Acronym / Abbreviation	Description
AEPR	Annual Environmental Performance Report
ALARP	As low as reasonably practicable
Code	Code of Practice
DENR	Department of Environment and Natural Resources
DPIR	Department of Primary Industry and Resources
EMP	Environmental Management Plan
EP	Exploration Permit
NT	Northern Territory
NT EPA	Northern Territory Environmental Protection Authority
SMS	Santos Management System
SSCC	Sacred Site Clearance Certificate

1.0 Introduction

The Petroleum (Environment) Regulations 2016 (NT) include a requirement for the interest holder to provide a report to the Minister on an annual basis that outlines the environmental performance of the interest holder (the Annual Environment Performance Report). The report must include sufficient information to allow the Minister to assess whether the interest holder has met the environmental outcomes and environmental performance standards included in the approved Environment Management Plan (EMP). The report is to consider information required to be recorded, monitored or reported under the Petroleum (Environment) Regulations 2016 (NT) and any other law in force in the Northern Territory related to conduct of the regulated activity.

This Annual Environmental Performance Report (AEPR) applies to the McArthur Basin Civil and Seismic Program that was approved on 6 June 2019. The period covered by this AEPR is from 6 June 2019 until 5 June 2020.

1.1 Background

Santos QNT Pty Ltd (Santos) submitted the *McArthur Basin Civil and Seismic Program EPE 161 EMP, Revision 4, June 2019* (EMP 2019) under the *Petroleum (Environment) Regulations (PER)* that came into force 6 July 2016. EMP 2019 was submitted to cover the following scope:

- Preparation and subsequent acquisition of a single, 10 linear km two dimensional (2D) seismic line, in a northwest to southeast orientation across the Tanumbirini 1/2H well location,
- Civil works required for expansion of the well lease pad at the Tanumbirini 1/2H location, and for construction of a new well lease pad at the Inacumba 1/1H location,
- Infrastructure at the lease pads consist of laydown areas, water tank pads, camp pads and dams.
- Civil works required to upgrade existing access tracks and create some new access tracks.
- Sourcing additional capping (via borrow pit) to reinstate the existing access roads and provide effective drainage and establishment of a new road.

EMP 2019 was approved on 6 June 2019, conditional on the MCSAN19 2D seismic survey being completed within one year.

This AEPR has been prepared to report on activities that have occurred under EMP between 6 June 2019 and 5 June 2020.

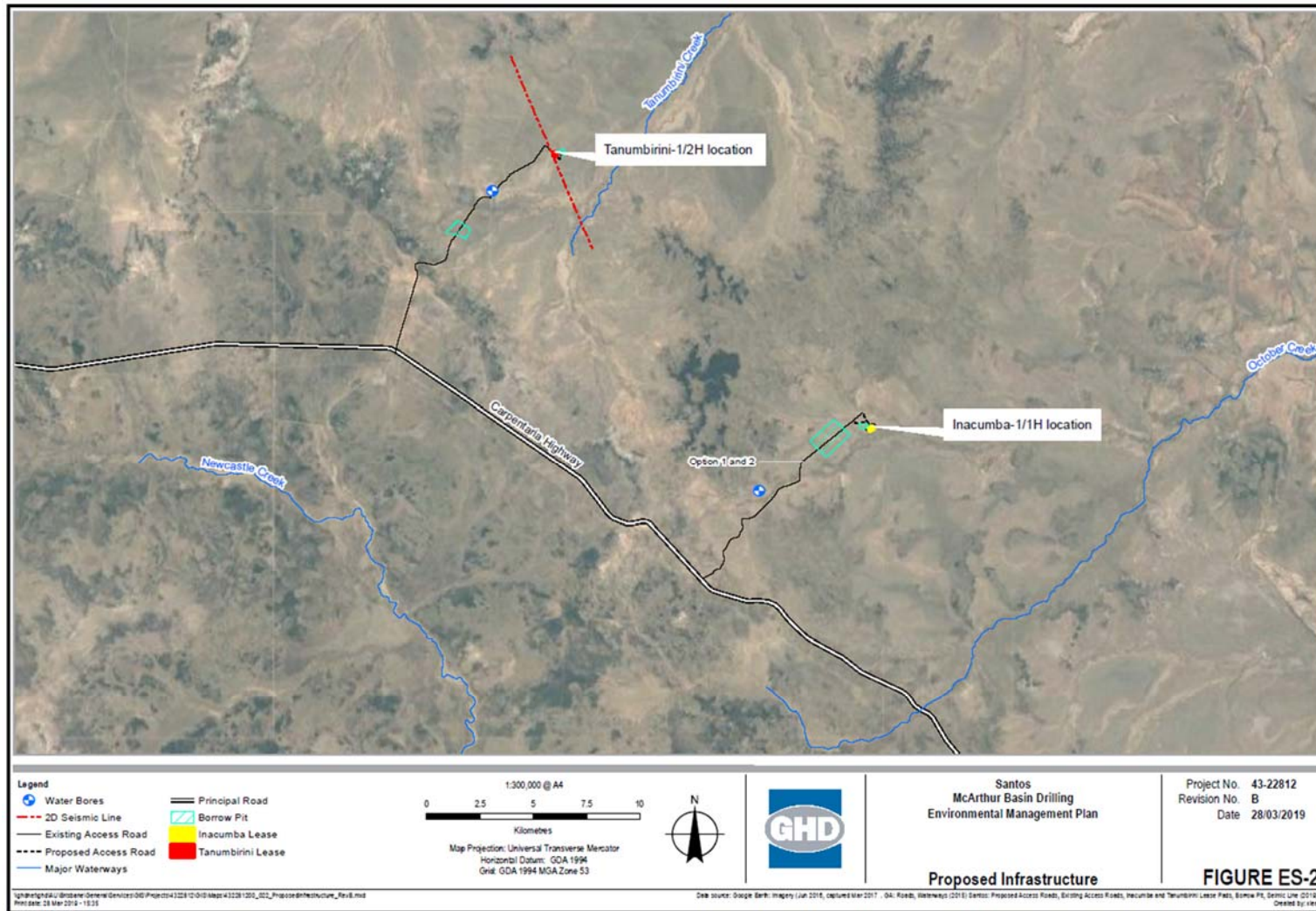


Figure 2 Location of Regulated Activities

1.2 Contents of Performance Report

This AEPR describes the environmental performance of Santos by evaluation of the following:

1. Compliance with Ministerial approval conditions for each EMP.
2. Compliance with each environmental outcome and environmental performance standard within the EMP 2019.
3. Compliance with reporting requirements in accordance with the Code and Regulations.
4. All recordable and reportable incidents, including root cause analysis and related corrective actions to prevent re-occurrence.
5. Findings of all regulatory inspections and audits and related actions to address any findings.

1.3 Assessment of Compliance

Table 1 shows the compliance status indicators used in this AEPR.

Table 1 Compliance Descriptors

Indicator	Description
Compliant	Compliant with requirement for entire 12 month reporting period
Partially Compliant	Compliant with requirement for most of year, short periods of non-compliance
Not Compliant	Interest holder did not comply with the requirement during the reporting period
Not Applicable	Requirement not applicable during the reporting period

1.4 Evidence of Compliance

The following sources of evidence are used to demonstrate compliance:

1. Internal tracking of compliance by Santos through:
 - Internal annual audits of compliance, as follows:
 - i. Review of the landholder consultation records.
 - ii. Review of daily reports and daily check lists.
2. Outcomes from regulatory inspections conducted by the Department of Environment and Natural Resources (DENR), Petroleum Operations.
3. Recordable and reportable incident reports submitted to DENR Petroleum Operations
4. Reports provided to DENR, the Department of Primary Industry and Resources (DPIR) and other government agencies.

2.0 Demonstration of Compliance

Table 2 demonstrates Santos' compliance with Ministerial EMP approval conditions.

Table 2 Compliance with Ministerial EMP Approval Conditions

No	Ministerial Condition	Compliance Status	Evidence
1	<p>The approval is subject to the following conditions:</p> <p>The interest holder must submit to Department of Environment and Natural Resources (DENR) a detailed timetable and breakdown of all civils works for the regulated activity prior to commencement of the activity and update the timetable each month.</p>	Partially Compliant	<p>Initial timetable sent to DENR 7 June 2019 prior to commencement of activity (updated on 10 June 2019 to include 2D seismic – as requested by DENR). Subsequent updates issued 17 September 2019, 25 October 2019, 18 December 2019, 28 January 2020, 18 February 2020, and 3 June 2020.</p> <p>On 6 April 2020 an email was provided to DENR stating “We are required to provide an updated timetable to the DENR each month. As you are aware we are in the process of finalising our plans following the deferral of activities in 2020. Our timetable at the moment consists of planning these activities. Currently we are working through this and we will provide the updated timeline as part of our response to your letter.”</p> <p>On 27 May 2020 a letter was sent to DENR detailing all ongoing EMP commitments, for this EMP including which activities would be delayed as a result of COVID-19.</p> <p>While operations were being conducted daily reports were sent to DENR's onshore gas email address. These reports included a five day activity, equipment and personnel forecast.</p>
2	<p>The interest holder must develop, in consultation with DENR, a rehabilitation plan for each disturbed area appropriate to the nature and scale of the activity.</p>	Not Applicable	<p>The site is operational and rehabilitation activities are yet to commence. A rehabilitation plan for each disturbed area appropriate to the nature and scale of the activity will be developed in consultation with DENR.</p>
3	<p>The regulated activity must be undertaken in compliance with relevant requirements of Part A (Surface Activities) of the Code of Practice: Onshore Petroleum Activities in the Northern Territory.</p>	Compliant	<p>A.3.1 Site selection and planning</p> <p>The project footprint area is illustrated in Figure 2. As per the EMP, approximately 40% of the project area is located in areas of existing disturbance.</p> <p>A.3.2 Well pad site selection requirements</p>

No	Ministerial Condition	Compliance Status	Evidence
			<p>Figure 2 demonstrates that the two well locations in this plan spaced a minimum of 2km apart.</p> <p>Where a well pad is located <1km from an existing water supply bore used for domestic or stock consumption the Land Access and Compensation Agreement demonstrates that the owner of the water supply bore consents in writing to the location of the well pad.</p> <p>A.3.3 Noise</p> <p>Under the Northern Territory Noise Management Framework Guideline there are no sensitive noise receptors within the vicinity of the project area in Figure 2. There are no complaints relating to noise in the IMS.</p> <p>A.3.4 Erosion and sediment control and hydrology</p> <p>The Erosion and Sediment Control Plan - EP 161 was Appendix E of the approved EMP. This plan was developed under the supervision of Tim Elder Certified Professional in Erosion and Sediment Control. This plan was implemented.</p> <p>A.3.5 Biodiversity protection</p> <p>The ecological assessment attached to the EMP did not identify any critical or important habitats. The site selection process ensured that 40% of the project area is located in areas of existing disturbance. An approved weed management plan was in place.</p> <p>A.3.6 Weed management</p> <p>A project specific weed management plan must be developed as part of the EMP which meets the requirements of the NT Weed Management Planning Guide: Onshore Petroleum Projects (DENR, 2019).</p> <p>A.3.7 Fire management</p> <p>A fire management plan at a project level was developed as part of the EMP. This plan includes baseline fire information and fire management.</p> <p>A.3.8 Containment of contaminants</p>

No	Ministerial Condition	Compliance Status	Evidence
			<p>A spill management plan was included as part of the EMP. There has been no transport of chemicals and wastewater on unsealed roads during the wet season.</p> <p>A.3.9 Rehabilitation</p> <p>A Rehabilitation Plan was included as part of an EMP. The rehabilitation plan included measures to achieve progressive rehabilitation and final land use management.</p>

Table 3 provides a systematic overview of Santos' compliance with the environmental outcomes and environmental performance standards within the approved EMP.

Table 3 Compliance with Environmental Outcomes and Environmental Performance Standards McArthur Basin Civil and Seismic Program Rev 4

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
1	<p>Majority of the project footprint area preferentially located in previously disturbed areas.</p> <p>Where possible, existing tracks, roads or seismic lines will be used for access.</p> <p>Site selection surveys to be undertaken prior to on-ground disturbance.</p> <p>Mature trees selected for preservation are to be flagged to ensure their protection.</p> <p>Cleared vegetation will be either stockpiled and respread during rehabilitation or mulched and spread as a sediment control technique to reduce erosion.</p> <p>Along the seismic lines, if light grading is necessary, flora rootstock will be left intact to promote regeneration.</p> <p>Hollow timber/trees that may be nesting/roosting sites for fauna will not be cleared.</p> <p>Where possible branches will be pruned in preference to total tree removal</p>	<p>Compliance with Santos Field Clearing Checklist</p>	<p>Compliant</p>	<p>The project footprint area is illustrated in Figure 2. As per the EMP, approximately 40% of the project area is located in areas of existing disturbance.</p> <p>EMP daily checklist confirms compliance with the Santos Field Clearing Checklist. Also, site inductions conducted prior to commencing activity.</p>
2	<p>For the seismic line blade work will not be undertaken on naturally smooth surfaces or flat easy terrain.</p> <p>Driving is only permitted on designated access roads and seismic lines.</p>	<p>No off-road driving.</p> <p>Vehicle speeds do not exceed 80 km/hr on unsealed roads. , 40 km/hr on seismic lines.</p>	<p>Compliant</p>	<p>Site inductions conducted prior to commencing activity.</p> <p>EMP daily checklist confirms compliance with Environmental Performance Standards regarding seismic blade wok, driving only on designated access</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
	<p>Speeds on unsealed roads will be limited – maximum 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Water trucks will be used to manage dust emissions from vehicle movement and civil operations on the site</p>	<p>Dust control measures implemented</p>		<p>roads and seismic lines, adherence to speed limits, and dust control measures.</p> <p>There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks.</p> <p>Beetaloo 2019 Civil Works Daily Report confirms the ongoing dust suppression, the number of tankers used and the location of dust suppression each day during civil operations.</p>
3	<p>Engines/Machinery will be maintained as per planned maintenance systems.</p> <p>Engines/machinery will have noise suppression devices</p>	<p>Engines/machinery maintained in accordance with manufacturers specifications and frequencies as detailed in the Santos maintenance system.</p> <p>Engines/machinery fitted with noise suppression devices.</p>	Compliant	<p>EMP daily checklist confirms maintenance of engines/machinery and noise suppression devices.</p>
4	<p>Reduce disturbance to native flora and fauna</p> <p>Minimise light pollution through task focused lighting and positioning camp boundary lighting inwards.</p>	<p>Task focused lighting employed.</p> <p>All camp boundary lighting positioned inwards at all times.</p>	Compliant	<p>EMP daily checklist confirms camp boundary lighting positioned inwards.</p>
5	<p>Speeds on unsealed roads will be limited – maximum 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Driving is only permitted on designated access roads and seismic lines.</p>	<p>No off-road driving.</p> <p>Vehicle speeds do not exceed 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p>	Compliant	<p>Site inductions conducted prior to commencing activity. Induction includes information regarding speed limits.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
	<p>Pits and dams will be fenced</p> <p>Daily checks of pits and dams once constructed</p> <p>Borrow pit excavations will be backfilled with overburden once borrow removal has been completed.</p>	<p>Pits and dams fenced and checked daily</p>		<p>EMP daily checklist confirms compliance with Environmental Performance Standards regarding no off-road driving, speed limits, checks of pits and dams.</p> <p>There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks.</p>
		<p>Borrow pits backfilled upon completion</p>	<p>Not Applicable</p>	<p>The locations remains active under other approved EMPs, borrow pits not yet backfilled.</p>
<p>6</p>	<p>Weed Management Plan developed</p>	<p>Compliance with DENR approved Weed Management Plan.</p>	<p>Partial Compliance</p>	<p>The Weed Management Plan developed and attached to the EMP was endorsed by DENR. This plan was complied with during the reporting period.</p> <p>On 7 July 2019 a contractor was found to be not compliant with Weed Management Plan. There was no weed declaration in vehicle upon arrival at site entrance. Discussed situation with contractor. They had a copy of the entry requirement document, stating certification was required. Vehicles denied entry until an inspection demonstrated compliance with Santos and Landowner biosecurity requirement. Continued education and reinforcement of biosecurity requirements. This non-compliance was reported in the recordable incident summary report that covered the period 6 June 2019 to 4 September 2019.</p> <p>Weed declarations located at the back of the approved plan were signed for all vehicles and a register of weed declarations is kept.</p> <p>A project specific weed management plan was developed in consultation with DENRs weed management officer and attached to the EMP (Appendix F)</p> <p>Identification of weed infestations was provided in the annual weed monitoring report sent to DENR's weed</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
				management officer on 23 July 2020. No weed treatment was undertaken during the reporting period.
7	<p>Fire-fighting equipment and competent fire-fighting personnel will be available.</p> <p>All vehicles will be equipped with portable fire extinguishers.</p> <p>Machinery and vehicles should be parked in areas of low fire risk.</p> <p>Any petrol motor vehicles or petrol-powered pumps will be fitted with spark arresters.</p> <p>All vehicles will be equipped with operational VHF and / or UHF radio transceivers.</p> <p>Smoking will only be permitted in areas clear of vegetation and there will be no disposal of butts to land.</p> <p>All personnel will receive information prior to the commencement of the activity relating to:</p> <ul style="list-style-type: none"> • Provisions of the Emergency Response Plan including procedures during a fire emergency • The operation of firefighting equipment and communications • Restricted smoking requirements <p>Toolbox meetings will be conducted to:</p> <ul style="list-style-type: none"> • Alert the workforce of the fire risk level for the day • Discuss any fire risk management breaches and remedial actions. <p>Prior to conducting a controlled burn during a Fire Danger Period, a permit to burn will be obtained from Bushfires NT</p>	<p>Staff trained in use of fire-fighting equipment.</p> <p>Fire-fighting equipment available and serviced as per manufacturer's specifications.</p> <p>All staff inducted to this EMP.</p>	<p>Compliant</p>	<p>NT Senior Supervisor - Civil Works appropriately trained in fire-fighting.</p> <p>EMP daily checklist confirms compliance with Environmental Performance Standards regarding firefighting equipment and personnel, machinery and vehicles parked in areas of low fire risk, petrol vehicles/pumps fitted with spark arrestors, vehicles fitted with VHF and/or UHF radios, smoking only in permitted areas.</p> <p>Site inductions conducted prior to commencing activity.</p> <p>Tool box meetings conducted in accordance with Site rules listed on the EMP checklist.</p> <p>The location of fire-fighting equipment is shown on the camp plan and the location of the fire extinguishers is part of the camp induction.</p> <p>Gate 2 check on certification ensures fire-fighting equipment available and serviced as per manufacturer's specifications.</p>
		<p>Spread, intensity and duration of fires are appropriately controlled.</p>	<p>Not Applicable</p>	<p>No controlled burns were undertaken during the reporting period</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
8	<p>Routine inspections of waste storage areas to ensure all waste are in the appropriate place.</p> <p>Waste removed by an approved NT EPA contractor.</p>	<p>All waste segregated and stored Appropriately in accordance with this EMP.</p> <p>Only waste from approved wastewater systems and grey water disposed of to land.</p> <p>Licensed waste contractor used for any offsite transfer or disposal.</p>	Compliant	<p>Daily checklist confirms that waste was segregated and stored on site and all putrescible waste material will be held in fauna proof containers.</p> <p>Environment Protection Licence (Pursuant to section 34 of the <i>Waste Management and Pollution Control Act</i>) demonstrates that waste contractors are licenced:</p> <ul style="list-style-type: none"> • Licensee RUSCA ENVIRONMENTAL SOLUTIONS PTY. LTD. • Licence Number EPL250-01 <p>Wastewater Works Design Approval (Approval Number: WW2019/124) demonstrates that wastewater systems used under this EMP were approved by Department of Health.</p>
9	<p>The project area, including access tracks have been preferentially located in previously disturbed areas.</p> <p>Existing, landholder access tracks have been utilised where possible to minimise soil compaction.</p> <p>Grading will be minimised where feasible.</p> <p>Along the seismic lines, if light grading is necessary, flora rootstock will be left intact to promote regeneration.</p> <p>An ESCP will be developed by a CPESC and approved by DENR prior to commencement of the project</p>	<p>Santos Field Clearing Checklist</p> <p>Compliance with DENR approved Erosion and Sediment Control Plan</p>	Compliant	<p>The project footprint area is illustrated in Figure 2. As per the EMP, approximately 40% of the project area is located in areas of existing disturbance. Existing landholder access tracks have been used where possible.</p> <p>EMP daily checklist confirms grading was minimised.</p> <p>The Erosion and Sediment Control Plan - EP 161 was Appendix E of the approved EMP. This plan was developed under the supervision of Tim Elder Certified Professional in Erosion and Sediment Control. This plan was implemented. Photos and drone footage confirm earth/topsoil bunds, mite drains, flow diversion berms and rocking, were installed in accordance with the ESCP. In addition, topsoil was stockpiled to minimise erosion.</p> <p>Two Borrow pits were constructed:</p> <ul style="list-style-type: none"> • 3ha at the Inacumba location

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
				<ul style="list-style-type: none"> 1.9ha at the Tanumbirini location <p>GIS data indicates that the total area of disturbance at the Tanumbirini location is less than the total area of disturbance estimated within the EMP. Civils works required at the Inacumba location is yet to be complete and the final extent of disturbance is yet to be known. However it is anticipated that the final extent of disturbance aligns with the disturbance estimates provided in the EMP.</p>
10	<p>Spill kits available to treat spills in-situ. Minimise fuel transfer where possible. Use of drip trays for transfers. Any spills contained and remediated. Fuel and other lubricants will be appropriately stored and managed, in accordance with AS1940</p>	<p>Spill kits, spill containment, and appropriate bunding in all relevant areas. All spills and leaks are remediated as soon as possible. Compliance with the Code of Practice for Petroleum Activities in the Northern Territory. Compliance with the Spill Management Plan (Section 7 of the EMP).</p>	Partially Compliant	<p>EMP daily checklist confirms compliance with the Environmental Performance Standards regarding in-situ spill kits, minimisation of fuel transfer, and use of drip trays for transfers, containment and remediation of spills appropriate management and storage of fuel and lubricants, and compliance with the Spill Management Plan.</p> <p>Spills were contained and remediated. On 30/06/19 a contractor spilt diesel onto a vehicle tray when a 200 litre drum overflowed while being filled. This was reported in the recordable incident summary report that covered the period 6 June 2019 to 4 September 2019.</p>
11	<p>All major creek crossings and floodways intersected by the access tracks will be subject to rocking to avoid and minimise erosion. Mitre drains and flow control banks (whoa boys) will be installed across access roads where required.</p>	<p>Compliance with DENR approved Erosion and Sediment Control Plan.</p>	Compliant	<p>EMP daily checklist confirms rocking of access tracks and installation of drains/flow control banks where required.</p> <p>The Erosion and Sediment Control Plan - EP 161 was Appendix E of the approved EMP. This plan was developed under the supervision of Tim Elder Certified</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
				Professional in Erosion and Sediment Control. This plan was implemented.
12	No long-term impacts to groundwater resources in the area.	Compliance with groundwater extraction licence approval conditions (i.e. volume limits will not be exceeded).	Partially Compliant	<p>On four occasions between July and September 2019 759m³ of water was taken from RN38581 (Bennett's Bore) which was not on Santos' water extraction licence. Extraction from this bore had been permitted prior to a change in water legislation (at the end of last year). RN38581 (Bennett's bore) was subsequently added to Santos' water extraction licence (No. GRF10280) on 2 December 2019.</p> <p>At all other times the project was compliant with groundwater extraction licence approval conditions.</p> <p>This was reported in the recordable incident report for the period from 5 September 2019 to 4 December 2019.</p>
13	<p>Disturbance is restricted to subject land and avoids the restricted work areas as detailed in the AAPA Authority Certificate.</p> <p>Known sites of sacred or cultural significance are identified and avoided.</p> <p>Any new sites identified during the activity will be reported to the NT Heritage Branch.</p> <p>Maintain GIS database of project area and cultural heritage sites including details of any works conditions</p>	Compliance with requirements of AAPA certificate	Compliant	<p>An application for an AAPA Authority Certificate or Authority Certificate Variation was submitted to AAPA in January 2019 (awarded on 13 May 2019 as Authority Certificate C2019/043, as a variation to C2014/053) to ensure that the locations and activities covered under this EMP have been appropriately surveyed and subsequently conditioned.</p> <p>Site inductions covering cultural heritage issues conducted prior to commencement of activity.</p> <p>EMP daily checklist confirms that known sites of sacred or cultural significance were identified and avoided, and that no new sites were identified during activities.</p> <p>Details of sacred and cultural significant sites included in GIS database and utilised when determining project</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
				<p>footprint (and provided to project personnel as part of induction).</p> <p>GIS database updated continuously, last updated 18 August 2020.</p>
14	No long-term impacts to groundwater resources in the area.	Compliance with groundwater extraction licence approval conditions (i.e. volume limits will not be exceeded).	Partially Compliance	<p>On four occasions between July and September 2019 759m³ of water was taken from RN38581 (Bennett's Bore) which was not on Santos' water extraction licence. Extraction from this bore had been permitted prior to a change in water legislation (at the end of last year). RN38581 (Bennett's bore) was subsequently added to Santos' water extraction licence (No. GRF10280) on 2 December 2019.</p> <p>At all other times the project was compliant with groundwater extraction licence approval conditions.</p> <p>This was reported in the recordable incident report for the period from 5 September 2019 to 4 December 2019.</p>
15	<p>For the seismic line blade work will not be undertaken on naturally smooth surfaces or flat easy terrain.</p> <p>Driving is only permitted on designated access roads and seismic lines.</p> <p>Speeds on unsealed roads will be limited – maximum 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Water trucks will be used to manage dust emissions from vehicle movement and civil operations on the site</p>	<p>No off-road driving.</p> <p>Vehicle speeds do not exceed 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Dust measures implemented.</p>	Compliant	<p>EMP daily checklist confirms compliance with requirements regarding seismic blade work, driving only on designated access roads and seismic lines, adherence to speed limits, and dust control measures.</p> <p>There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks.</p> <p>Access tracks shown in Figure 2 were the only access tracks used by the project.</p> <p>Beetaloo 2019 Civil Works Daily Report confirms the ongoing dust suppression, the number of tankers used and the location of dust suppression each day during civil operations.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
16	Noise complaints from vehicle movements and drilling activities minimised through active stakeholder engagement and complaints management through NLC	No noise nuisance to users of adjacent land. Amicable resolution of complaints	Compliant	Stakeholder engagement record shows that there are no complaints regarding noise.
17	Disturbance, injury or death to livestock from vehicle movements and drilling activities minimised through active stakeholder engagement. Gates left in the condition in which they were found. Speeds on unsealed roads will be limited to a maximum 80 km/hr. Prohibit livestock access by fencing all pits and dams. Routine daily inspection pits and dams to ensure no trapped livestock.	No injury or death to livestock. Amicable resolution of complaints. Vehicle speeds do not exceed 80 km/hr on unsealed roads. No livestock access to pits and dams.	Compliant	Stakeholder engagement record shows that there are no complaints regarding injury or death of livestock. Daily checklist confirms gates were left in the condition in which they were found, all pits were fenced and dams were inspected daily. There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks. No injury or death to livestock reported in the Incident Management System.
18	No decrease in air quality due to increased inefficient vehicle and plant emissions.	Vehicles and fixed plant maintained as per in accordance with manufacturers specifications and frequencies. Vehicles compliant with Northern Territory Motor Vehicle registry regulation and work health and safety regulations.	Compliant	EMP daily checklist confirms compliance with Environmental Performance Standards regarding maintenance of vehicles and plant, and compliance with NT Motor Vehicle registry regulations.

Table 4 demonstrates Santos' compliance with reporting requirements in the Code of Practice: Onshore Petroleum Activities in the Northern Territory (Code of Practice) and the Petroleum (Environment) Regulations 2016 (NT).

Table 4 Compliance with Mandatory Reporting Requirements

No	Reference	Requirement	Compliance Status	Evidence
1	Code cl A.3.5	Geospatial information depicting areas cleared is to be provided to the Minister.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
2	Code cl A.3.6 (b)	Weed management plan developed as part of the EMP must provide for ongoing weed monitoring.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
3	Code cl A.3.7(a)vi	The fire management plan developed as part of the EMP must provide for annual fire mapping to monitor changes to fire frequency in the relevant areas.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
4	Code cl A.3.9(c) Code cl A.3.9(e)	The rehabilitation plan developed as part of the EMP requires progressive rehabilitation of significantly disturbed land which is required to commence no longer than 12 months following the cessation of activities on the land. It also requires regular maintenance and annual monitoring of rehabilitated areas.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
5	Code cl B.4.13.2(c)	As a minimum, the following must be recorded and reported for each stage (where a stage in this context means all fluids pumped at a particular depth interval): a) total volume of hydraulic fracturing fluid pumped, b) quality of water used (tested for analytes in section C.8 of this Code. Analyses do not need to be repeated if	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.

No	Reference	Requirement	Compliance Status	Evidence
		the same water source is used for multiple stages) and c) typical and maximum concentrations of chemicals or other substances used.		
6	Code cl B.4.13.2(k)iv	Where venting is the only technically feasible option for managing produced gas, the technical considerations preventing the use of the recovered gas must be recorded and included in the operator's annual report.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
7	Code cl B.4.14.2(c)	All new barriers or new well operating envelopes must be verified and clearly documented and reported by submission of an updated well barrier integrity validation (WBIV) report to DPIR.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
8	Code cl B.4.15.2(j)	Complete and accurate records of the entire decommissioning procedure must be kept, with these records submitted as part of the legislative reporting requirements for the decommissioning of petroleum wells.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
9	Code cl B.4.17.2(d)	Any guidelines published by the Northern Territory Government from time to time relating to reporting and data submission, and groundwater monitoring data standards must be followed.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
10	Code cl C.3(e)	The components of the wastewater management framework, include: Monitor, manage and report in accordance with the Wastewater Management Plan and Spill Management Plan.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.

No	Reference	Requirement	Compliance Status	Evidence
11	Code cl C.6.1(d)	Wastewater tracking documentation must be reported to the Minister at least annually in accordance with the framework (Spill Management Plan and Wastewater Management Plan) outlined in the EMP	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
12	Code cl C.7.1(d)ii	Wastewater Management Plan must include a program for monitoring and reporting against the effectiveness of the measures for the mitigation of interaction with wildlife, stock and human receptors with wastewater.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
13	Code cl D.4.3.2(f)	A written report detailing the levels of methane measured, the duration of the unusual readings and the results of the investigation (including remedial actions) must be submitted within one month of the significantly higher-level methane event being detected.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
14	Code cl D.5.9.2(c)	Emissions from exploration, well construction (including during flow back) and workovers must be measured and reports submitted.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
15	Code cl D.5.9.3(a)	Where natural gas is vented or flared at a gas processing or other downstream facility, emissions must be estimated and reported.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
16	Code cl D.6.1	All mandated government reporting is complied with; and all detectable leaks and emissions are reported on an annual basis.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.

No	Reference	Requirement	Compliance Status	Evidence
17	Code cl D.6.2(a)	Reports of baseline assessments must be submitted at the conclusion of each field campaign.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
18	Code cl D.6.2(b)	Emissions reporting must be in accordance with Section D.5.6. Emissions associated with venting and flaring as described in Section D.5.9 must be provided separately to the Northern Territory Government in accordance with this Code.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
19	Reg 14	A current EMP remains in force until the interest holder notifies the Minister the activity is no longer being carried out and all of the environmental outcomes and obligations under the plan have been met, and the Minister advises the interest holder the notice is accepted and the plan ceases to be in force.	Compliant	The current EMP remains in force to cover final rehabilitation assessments and any additional restoration of 2D seismic lines that may be required.
20	EMP s 9.4 Ongoing Consultation Schedule 1, item 9(2)	Interest holders are required to conduct future engagement with stakeholders, in accordance with the description in the EMP.	Compliant	Stakeholder engagement logs indicate that engagement with stakeholders has continued and is ongoing.
21	EMP Section 8.6 Incident Reporting Reg 33	DENR is notified of reportable incidents within 2 hours of the interest holder becoming aware of the incident, or within 2 hours of the incident occurring. A written report must be provided within 24 hours if the initial report was made orally.	Not Applicable	There were no reportable incidents during the reporting period.
22	EMP Section 8.6 Incident Reporting	Reports on reportable incidents are to be provided to DENR as soon as practicable and within 72 hours of the event occurring.	Not Applicable	There were no reportable incidents during the reporting period.

No	Reference	Requirement	Compliance Status	Evidence
	Reg 34	A final report must be provided to DENR within 30 days after remediation/clean-up of the affected area.		
23	EMP Section 8.6 Incident Reporting Reg 35	A written report of all recordable incidents must be provided to DENR not later than 15 days after the 90 day reporting period (unless otherwise agreed).	Partially Compliant	<p>Reports on all recordable incidents were provided:</p> <ul style="list-style-type: none"> • 1st report provided 24/09/2019, 5 days late (2 incidents) • 2nd report provided 19/12/2019, met timeframes (1 incident) • 3rd report provided 23/03/2020, 4 days late (no incidents) • 4th report provided 12/06/2020, met timeframes (no incidents)
24	Reg 37A	A report about flow back fluid from hydraulic fracturing must be provided to the Minister within 6 months of the flow back occurring.	Not Applicable	The regulated activity did not include hydraulic fracturing.
25	Reg 37B	A report about produced water from hydraulic fracturing must be provided to the Minister within 6 months of the produced water being extracted.	Not Applicable	The regulated activity did not include hydraulic fracturing.
26	Schedule 1, item 12	Interest holder must notify the Minister, occupier of the land and owner of the land on which the activity is to be carried out before commencement of activity.	Compliant	<p>The EMP was approved by the Minister on 6 June 2019, prior to civils works commencing on 15 June 2019. DPIR approved Santos' application to acquire 2D seismic on 9 July 2019, prior to commencing seismic line preparation on 22 July 2019.</p> <p>A Land Access and Compensation Agreement was in place prior to the commencement of activity (executed 31 May 2019).</p> <p>Notice of entry was issued on 14 June 2019, prior to commencing civils work on 15 June 2019.</p>

No	Reference	Requirement	Compliance Status	Evidence
29	EMP Section 7.3.3	<p>Annual Fire Mapping</p> <p>If during the proposed exploration works a fire has occurred in and around the project footprint, Santos in consultation with the landholder and with the landholders approval endeavour to map the extent of the fire and provide that information to DENR.</p>	Not Applicable	No fires occurred in and around the project footprint during the reporting period
30	EMP Section 7.4.2	<p>Final Rehabilitation Report</p> <p>Following completion of the rehabilitation works, final photo point revisit and any required additional rehabilitation, Santos will submit the final Environmental Reports to DPIR and DENR along with the application to release the long-term Rehabilitation Security.</p>	Not Applicable	The well pads and seismic line covered by this EMP remain in use, with drilling at the Tanumbirini and Inacumba locations scheduled for 2021/2022 and a walk-away VSP along the route of the seismic line scheduled for 2021/2022. Final rehabilitation inspections and reporting will be undertaken once all proposed activity at these locations has been completed.

3.0 Summary of Compliance

3.1 Overview of Compliance

Table 5 provides a summary of the results of the compliance assessment against the 51 total compliance items.

Table 5: Compliance Summary

Compliance Indicator	Number	Percentage
Compliant	18	35.3
Partially Compliant	6	11.7
Not Compliant	0	0
Not Applicable	27	52.9

3.2 Overview of Items Found Not Compliant or Partially Compliant

3.2.1 Ministerial Approval Conditions

3.2.1.1 Description

Initial timetable sent to DENR 7 June 2019 prior to commencement of activity (updated on 10 June 2019 to include 2D seismic). Subsequent updates were issued September, October, December, January, February and June. However a detailed schedule was not sent every month as required.

3.2.1.2 Analysis of Potential Environmental Harm or Impact

There was no potential for environmental harm or impact.

3.2.1.3 Corrective Actions

A new system is in place where the schedule gets sent to the onshore petroleum email address at the completion of the monthly scheduling meeting.

3.2.2 Environmental Performance Standards

3.2.2.1 Description

On 7 July 2019 a contractor was found to be not compliant with Weed Management Plan. There was no weed declaration in vehicle upon arrival at site.

3.2.2.2 Analysis of Potential Environmental Harm or Impact

Very minor potential for harm. The 2020 post-wet season weed monitoring did not identify any new weed species that were not already present prior to site works.

3.2.2.3 Corrective Actions

Discussed situation with contractor. They had a copy of the entry requirement document, stating certification was required. Vehicles denied entry until an inspection demonstrated compliance with Santos and Landowner biosecurity requirement. Continued education and reinforcement of biosecurity requirements.

3.2.2.4 Description

On 30/06/19 a contractor spilt diesel onto a vehicle tray when a 200 litre drum overflowed while being filled. This was reported in the recordable incident summary report that covered the period 6 June 2019 to 4 September 2019.

3.2.2.5 Analysis of Potential Environmental Harm or Impact

Very minor potential for harm. There was no spill to grade.

3.2.2.6 Corrective Actions

Stopped the fuel flow, cleaned up the diesel by adding dry dirt to the vehicle tray. The contractor was advised to use other fuel transport containers that have incorporated bunding on the lid to prevent spills off the container.

3.2.2.7 Description

In the time period between the commencement of the new regulatory framework for the extraction of water for petroleum activities and having Bore RN38581 added to Santos' extraction licence, approximately 0.7ML of water was used from RN38581. This was not in compliance with groundwater extraction licence approval.

This bore was in use prior to the legislative change as extraction had formerly been permitted prior to the changes in water legislation (end of 2018).

3.2.2.8 Analysis of Potential Environmental Harm or Impact

There was no potential for environmental harm or impact. The volume of water taken from the aquifer was within the overall permitted amount. However, the specific bore RN38581 was not on the water licence at the time of the take.

3.2.2.9 Corrective Actions

RN38581 was added to the Santos extraction licence on 6/11/19. Water extraction from that bore is now permitted.

3.2.3 Regulatory Reporting

3.2.3.1 Description

Recordable Incidents Summary Reports were not lodged within 15 days of the reporting period.

3.2.3.2 Analysis of Potential Environmental Harm or Impact

There was no potential for environmental harm or impact.

3.2.3.3 Corrective Actions

Santos will submit recordable incident reports for this EMP at 90 day intervals as required. The requirements to submit these recordable incident reports for this EMP has been added to Santos' compliance tracking system.