



Western Surat Gas Project

2022 Annual EPBC Report

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Document Status

Revision History

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Document Approval

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1. Introduction

Stuart Petroleum Cooper Basin Gas Pty Ltd (ACN 130 588 055) is developing the Western Surat Gas Project (WSGP) in south-central Queensland (Figure 1-1). The proponent is a wholly owned subsidiary of Senex Energy Limited (Senex). The WSGP is a gas field, producing gas to supply the third-party operators in Australian domestic east coast or export gas markets.

The gas field is located in the Brigalow Belt South bioregion, 30 kilometres northeast of Roma in the Maranoa Regional Council area of southern-central Queensland. The area for gas production area is 685 km².

In May 2015, a delegate of the then Minister for the Environment determined the proposal was a controlled action due to potential for significant impacts on four matters of national environmental significance (MNES). In April 2017, the DoEE (now DAWE) deemed the proposed action to be assessed by a Public Environment Report (PER). The approval was decided on 10 August 2018 for four controlling provisions, with conditions. The controlling provisions are:

- Wetlands of international importance (sections 16 & 17B)
- Listed threatened species and communities (sections 18 & 18A)
- Listed migratory species (sections 20 & 20A)
- Water resources/trigger (sections 24D & 24E).

The action is approved to develop 425 production wells, undertaking a staged drilling program. Supporting infrastructure approved as part of the project includes: gas and water gathering networks; gas field compression facilities and a central processing facility; medium pressure infield and sales gas pipelines; a central processing plant; water storage and treatment facilities; and other associated and ancillary facilities. The targeted production rate is approximately 50 terajoules (TJ) per day over a 30-year project life.

Relevant project details for the approved action are in Table 1.

Table 1 Western Surat Gas Project details

Approved Action Details	
Title of the Action	Stuart Petroleum Cooper Basin Gas Pty Ltd Western Surat Gas Project, NE of Roma, Queensland (EPBC 2015/7469)
Person to whom the approval is granted	Stuart Petroleum Cooper Basin Gas Pty Ltd
Proponent's ABN	130 588 055
Date of Decision	10 August 2018
Expiry date of approval	30 June 2068
Contact details	Level 30, 180 Ann Street, Brisbane Queensland 4000

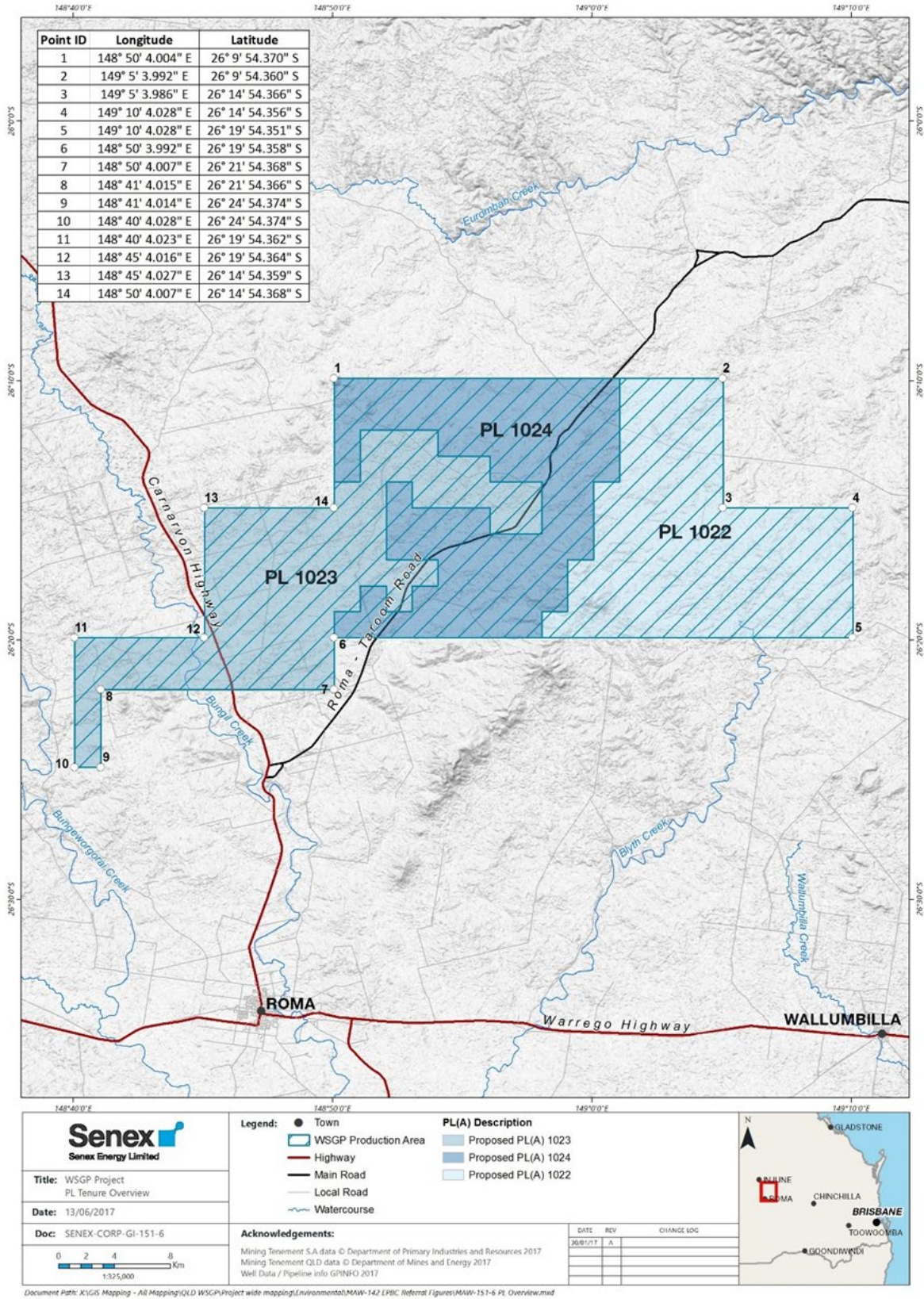


Figure 1-1 Location of the Western Surat Gas Project

1.1. Purpose

This report was prepared to address the approval requirements.

Senex is required to publish a report (the Annual Compliance Report) addressing compliance with each of the conditions of the approval during the previous 12 months (Condition 16). The report is to be published on the Senex website.

The report covers activities undertaken from **September 2021 to August 2022**.

1.2. Project status

In May 2019, Senex commenced the action on the ground with civil construction and drilling the first production wells and associated infrastructure on the Eos and Glenora blocks in petroleum lease (PL) 1022. The activities are predominantly located within areas of remnant vegetation and appropriate management measures were implemented to minimise impacts to habitat values, including for threatened species. All land disturbance was within the Stage 1 area, and the area of habitat disturbed was within the approved clearance limits (Refer to section 2.1). A total of 92 wells have been drilled. The associated gas gathering, and water pipelines have been constructed and the wells are operational.

2. Results

2.1. Clearance Limits

Condition 1. The approval holder must not clear more than 102 hectares of habitat for Koala and Yakka Skink in Stage 1 of the project.

In the Stage 1 area, at the completion of the reporting period, the following areas have been cleared for the wells, gathering pipeline and right of ways, and ancillary activities:

- 63 ha of Koala habitat
- 63 ha Yakka Skink habitat.

The areas cleared are within the approved area limits.

2.2. Stage 1 Offset Management Plan

Condition 2. To compensate for the loss of 102 ha of habitat for the Koala and Yakka Skink in Stage 1, the approval holder must implement the stage 1 Offset management plan.

An annual report for offset management was prepared and issued in June 2022. The report 'Appletree Creek Offset Site – Western Surat Gas Project Annual Report' (SENEX-WSGP-EN-REP-057) was provided to the Department of the Environment and Energy.

A summary of the report is provided in the following section.

2.2.1. Offset site management

The offset is progressing according to the management plan objectives and the site has been managed to account for the climatic conditions.

The offset site is being managed effectively, as per the management plan, to obtain the objectives of the site. A summary of the status of the management actions is provided in Table 2-1. There were no major flood events. Whilst there was a windstorm in January 2022, inspections of the offset area did not identify any significant damage to the offset area or fencing as a result of weather conditions or other external sources

Table 2-1 Status of management actions for the offset site

Management Action	Comments for reporting period	Status
Forestry operations, native timber harvesting and general vegetation impacts	No vegetation harvesting or clearing	✓
Fire	No fires in offset site	✓
Fencing	Fencing in tact to manage grazing.	✓
Following extreme weather conditions of drought or flood	Good ground cover has been maintained throughout the year	✓
Grazing	Cattle removed in November	✓
Pest animals	Pig and wild dog management undertaken	✓
Pest plants	Monitoring for pest plants. Parthenium managed by maintaining groundcover	✓

Inspections to the offset site have occurred regularly by the landholders during the reporting period. The main activities have been pest animal management and monitoring the boundary fences.

There has been above average rainfall throughout the year which helped maintain strong groundcover.

Grazing management was practiced during the period. This included grazing to reduce fire risk and exclusion.

Pest animal management was ongoing, with inspections, removal of pigs, and baiting for wild pigs and dogs undertaken.

Pest plants have been managed on an ongoing basis.

2.3. Stage 2 Offset Management plan

Conditions 4 to 7 relate to the Stage 2 Offset Management Plan and are not yet relevant for this annual report as Stage 2 of the project has not commenced.

2.4. Management plans

Condition 8. The approval holder must implement the following management plans:

- a) *Western Surat Gas Project Coal Seam Gas Water Management Plan (CSG WMP)*
- b) *Western Surat Gas Project Water Monitoring and Management Plan (WWMP)*
- c) *Western Surat Gas Project Environmental Management Plan (EMP)*
- d) *Western Surat Gas Project Significant Species Management Plan (SSMP)*

2.4.1. Coal Seam Gas Water Management Plan

The CSG WMP continues to be implemented.

A Resource Monitoring and Management Plan (RMMP) was previously prepared to enable produced water to be used for irrigation on a landholder's property, within the petroleum lease. The RMMP addresses Queensland's End of Waste Code (Irrigation of Associated Water (including coal seam gas water) under the *Waste Reduction and Recycling Act 2011 (WRR Act)*.

Senex is a Registered Resource Producer under the WRR Act to responsibly provide water to third parties for beneficial use. Infrastructure for the irrigation project has been commissioned and continues to operate effectively applying water at a rate of up to 4.16ML/Ha/yr.

2.4.2. Water Monitoring and Management Plan (WMMP)

The WMMP continues to be implemented.

As a tenure holder within the Surat Cumulative Management Area, Senex has installed groundwater monitoring bores to address its obligations under the Surat CMA Underground Water Impact Report (UWIR). The bores are part of a large network monitoring the CMA that reports on changes in groundwater within the area.

Senex drilled and completed monitoring bores at two blocks: Glenora and Tethys. Summary of these bores are as follows:

Table 2-2 Installed groundwater monitoring sites

UWIR Site No	Site ID	Easting	Northing	Facility Type	Monitoring Formation(s)	Status
163	Glenora-4M	710543	7089038	Multi-Level Gauge	Springbok Sandstone Upper Juandah CM Lower Juandah CM Taroom CM Hutton Sandstone	Installed Dec -16
163	Glenora-6M	710473	7089038	Monitoring Bore	Gubberamunda Sandstone	Installed Feb-17
164	Tethys-6M	684860	7089687	Multi-Level Gauge	Springbok Sandstone Upper Juandah CM Lower Juandah CM Taroom CM Hutton Sandstone	Installed Jan-19
164	Tethys-7M	684881	7089694	Monitoring Bore	Gubberamunda Sandstone	Installed Jan-19

Glenora 4M was completed in 2016 and groundwater pressures have been recorded since 21 December 2016, providing a period of 49 days before commencement of Glenora production which occurred on 9 February 2017. Glenora 6M was drilled in February 2017 and data collection commenced in October 2017.

Data collection commenced at Tethys 6M and 7M in March 2019.

Data from the monitoring bores are provided to the Office of Groundwater Impact Assessment (OGIA) bi-annually to cumulatively assess groundwater impacts in the CMA.

The 2021 UWIR took effect in May 2022. At the time of reporting, 2021 UWIR modelled outputs for the Glenora and Tethys monitoring wells were not available. As such, monitoring data collected by Senex has been compared to the 2016 UWIR model outputs, as this model was used to simulate and evaluate potential groundwater impact associated with the WSGP and is therefore comparable. It should be noted that since the 2016 UWIR, development plans have changed in the surrounding tenures. The Surat UWIR now includes the assessment and integration of cumulative impacts from existing and proposed coal mines in the Surat Basin. All these factors may potentially explain some of the differences between the measured and modelled drawdown as outlined below. Once the outputs for the 2021 UWIR is received from OGIA, this report will be updated to reflect these changes.

2.4.2.1. Groundwater Data Management and Analysis

Groundwater level data from the Glenora and Tethys bores was reviewed by assessing the groundwater elevation hydrographs and any data quality issues identified. Triggers were developed to provide early-warning of unpredicted impacts to groundwater dependent assets in the vicinity of the WSGP. The early-warning impacts specifically relate to deviations from the groundwater level decline predicted as part of the 2016 UWIR model.

Outputs were received from the 2016 UWIR cumulative impact groundwater model. The water level decline in the 2016 UWIR model was predicted from a starting point of steady-state groundwater levels in 1995 that represents pre CSG development conditions. This date also preceded most groundwater monitoring activities (including Senex) in the Surat CMA and consequently the modelled water levels are expected to differ from the measured water levels at Glenora 4M/6M and Tethys 6M/7M.

To evaluate early identification of potential impacts in the vicinity of WSGP, drawdown was calculated as the difference between groundwater levels from July 2018 to January 2022 at the location of Glenora 4M/6M, with drawdown calculated for both modelled and actual water levels. A summary of the modelled groundwater drawdown compared to the actual drawdown measured at Glenora 4M is presented in Table 2-2.

Table 2-3 Comparison of 2016 UWIR model predicted drawdown and actual drawdown at Glenora 4M calculated between 1st July 2018 and 1st January 2022

UWIR model layer	Lower Springbok	Middle 1 WCM	Middle 2 WCM	Middle 3 WCM	Upper Hutton
Modelled (m)	0.2	8.093	9.368	10.608	0.014
Actual (m)	11.471	25.273	78.400	152.250	3.434
Actual > modelled	Yes	Yes	Yes	Yes	Yes

Lower Springbok Sandstone

There was more drawdown in the lower Springbok than the model predicted. The difference between the model and the actual drawdown is due to the low permeability in the sandstone formation and the time taken to reach equilibrium in water levels following bore completion. Any difference between the model and actual readings is likely to be small after equilibrium is reached.

Walloon Coal Measures Mid 1,2 and 3

The actual drawdown is more than the modelled drawdown, based on the 2016 UWIR, in the Mid Walloon Coal Measures 1, 2 and 3 layers. This may reflect a difference between water production by operators in the Surat CMA and water production used as inputs to the model that has resulted in different drawdown within the reservoir for the corresponding time period. The development plans of all operators are constantly changing.

Upper Hutton Sandstone

Actual drawdown in the Upper Hutton Sandstone was higher than the modelled drawdown that may represent the effects of unknown or unquantified groundwater extraction by other parties from the Hutton Sandstone in the vicinity of WSGP, rather than the influence of water extraction as part of the WSGP project.

Gubberamunda Sandstone

No drawdown has been modelled for the Gubberamunda Sandstone at the location of Glenora 6M from 1 July 2018 to 1 January 2022. Approximately 0.2m of drawdown was measured for the corresponding period that may reflect the effects of groundwater pumping by others.

For the purpose of evaluating potential impacts in the vicinity of WSGP, drawdown has been calculated as the difference between groundwater levels from July 2019 to January 2022 at the location of Tethys 6M/7M, with drawdown being calculated for both modelled and actual water levels. A summary of the modelled groundwater drawdown compared with the actual drawdown measured at Tethys 6M is presented in Table 2-3.

Table 2-3 Comparison of 2016 UWIR model predicted drawdown and actual drawdown at Tethys 6M calculated between 1st July 2019 and 1st January 2022

UWIR model layer	Lower Springbok	Middle 1 WCM	Middle 2 WCM	Middle 3 WCM	Upper Hutton
Modelled (m)	0.005	0.049	0.075	0.233	0
Actual (m)	9.725	0.965	0.625	2.057	1.967
Actual > modelled	Yes	Yes	Yes	Yes	Yes

Lower Springbok Sandstone

There was more drawdown in the lower Springbok than the model predicted. The difference between the model and the actual drawdown is due to the low permeability in the sandstone formation and the time taken to reach equilibrium in water levels following bore completion. Any difference between the model and actual readings is likely to be small after equilibrium is reached.

Walloon Coal Measures Mid 1,2 and 3

The actual drawdown is more than the modelled drawdown, based on the 2016 UWIR, in the Mid Walloon Coal Measures 1, 2 and 3 layers. It should be noted that both the modelled and actual decline expressed as drawdown are minimal and not likely the result of any production from the reservoir in this area for the corresponding time period. Senex has not yet commenced production at Tethys block.

Upper Hutton Sandstone

Actual drawdown in the Upper Hutton Sandstone was higher than the modelled drawdown that may represent the effects of unknown or unquantified groundwater extraction by other parties from the Hutton Sandstone in the vicinity of WSGP, rather than the influence of water extraction as part of the WSGP project.

Gubberamunda Sandstone

No drawdown has been modelled for the Gubberamunda Sandstone at the location of Tethys 7M from 1 July 2019 to 1 January 2022. Approximately 0.218m of drawdown was measured for the corresponding period which may reflect the effects of groundwater pumping by others.

2.4.2.2. Trigger levels

Trigger levels as defined in the *Water Act 2000* are 5 m for a consolidated aquifer and 2 m for an unconsolidated aquifer (unconsolidated aquifers do not occur at WSGP). The 2016 UWIR did not predict any private water bores to exceed the 5 m trigger within the next 3 years. Therefore, Senex did not have any Make Good obligations under the *Water Act 2000* at that time. The 2019 UWIR has identified 6 IAA bores for which Senex is the responsible tenure holder and Senex has been working through the processes of Bore Assessments and Make Good with relevant landholders as required. The 2021 UWIR assigned Senex with three IAA bores, one of which was carried over from the 2019 UWIR as the Make Good Agreement was still being negotiated.

2.4.3. Environmental Management Plan

The EMP is a working plan that continues to be implemented for all construction and operating activities for the project. All contractors undertaking works in relation to the project have been required, through their contractual arrangements, to comply with the plan.

2.4.4. Significant Species Management Plan

The SSMP has been implemented for the project for preconstruction, construction and operating stages of the project. There continues to be a focus on flora and fauna management with the construction activities, during the well and gathering field development.

The areas developed during the previous reporting periods are located within remnant habitat and were managed to minimise impacting habitat values, which includes habitat for threatened species. After assessing and remapping areas of the MNES community Brigalow (*Acacia harpophylla* dominant and codominant) threatened ecological community, all patches of the TEC were avoided. No threatened EPBC flora species were found to occur within the construction footprint of the project area during the ecological field surveys in this reporting period.

Regarding EPBC fauna species, there have been extensive surveys to identify and map Yakka Skink colonies within the footprint and the areas adjacent to where activities are undertaken. The surveys continue to be an integral part of the process for selecting infrastructure locations. There were no further areas developed during the reporting period that impacted MNES.

A Fauna Spotter Catcher (FSC) program continues to be implemented for disturbance activities,. The FSC remains on site during all the first disturbance land clearing to undertake pre-clearance checks of the area, and relocate fauna accordance with relevant licensing requirements. The preclearance checks did not identify any other EPBC threatened species.

Regular environmental inspections were undertaken during the project land clearing, construction and drilling activities. There were no non-compliances with the SSMP identified in the reporting period.

2.4.5. Revising water management plans

Condition 9. Between years 3 and 5 after the approval date, the approval holder must submit a revised Western Surat Gas Project Coal Seam Gas Water Management Plan and Western Surat Gas Project Water Monitoring and Management Plan for the written approval of the Minister. The revised plans must:

a) be in accordance with the Department's Environmental Management Plan guidelines

b) include an assessment of the effectiveness of measures contained in the Western Surat Gas Project Coal Seam Gas Water Management Plan and Western Surat Gas Project Water Monitoring and Management Plan in avoiding, mitigating and managing impacts on protected matters, and

c) include a comparison of impacts on protected matters against impacts predicted in the Public Environment Report.

Condition 10. The approval holder must not implement the revised Western Surat Gas Project Coal Seam Gas Water Management Plan and Western Surat Gas Project Water monitoring and management plan until the revised plans have been approved by the Minister. The approved revised plans must be implemented within 12 months of plan approval.

This review has now commenced with an aim to submit a revised Plan on or before 2024.

2.5. Chemical risk assessment

Condition 11. Prior to use of new drilling fluid compounds, the approval holder must undertake a chemical risk assessment.

Condition 12. Where a new drilling fluid compound/s is determined by the chemical risk assessment to be high risk, the approval holder must submit the chemical risk assessment for the high risk new drilling fluid compound/s for the written approval of the minister.

Condition 13. The approval holder must not use the new drilling fluid compounds considered high risk until the chemical risk assessment has been approved by the Minister.

No new chemicals were risk assessed for use this reporting period. No further action is required to address the condition for the reporting period.

2.6. Administrative Conditions

Condition 14. *Within 20 business days after the commencement of the action, the approval holder must advise the department in writing of the actual date of commencement.*

The department was advised in 2018 and a receipt acknowledging the commencement of the project was received from the department (dated 10 September 2018, 2015/7469). No further action is required for this condition.

Condition 15. *The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website.*

Senex conducts periodic internal desktop audits of the EPBC approval conditions as part of an overarching environmental assurance program. The results of the most recent audit are recorded as part of Senex's EMS.

Condition 16. *Within 3 months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report (the annual compliance report) on its website addressing compliance with each of the conditions of this approval during the previous 12 months. Documentary evidence providing proof of the date of publication and non compliance with any conditions of this approval must be provided to the Department at the same time as the Annual Compliance Report is published. Reports must remain published for the duration of this approval. The approval holder must continue to publish the annual compliance report until otherwise advised by the Minister in writing.*

The report for this reporting period was published prior to 10 November 2022. This addressed condition 16.

Condition 17. *Any contravention of the conditions of this approval (including contravention of a commitment made in a management plan, program or strategy) must be reported to the Department within 7 days of the approval holder becoming aware of the contravention.*

Senex has made the Department aware of any contravention with the conditions during the reporting period.

A proceeding under state law for the protection of the environment and/or conservation and sustainable use of resources was recorded in May 2022 by way of a penalty infringement notice that was received from the Queensland Department of Environment and Science for a breach in the conditions of the *ENEW07547018 End of Waste Code – Associated Water (including coal seam gas water) 2019* under the *Waste Reduction and Recycling Act 2011*. The infringement did not cause environmental harm, however a fine of \$13,345 was levied. Appropriate actions to prevent recurrence have been actioned accordingly.

Condition 18. *Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of the approval is conducted and a report submitted to the Minister. The approval holder must not commence the audit until the Minister approves the independent auditor and audit criteria in writing. The audit report must address the criteria to the satisfaction of the Minister.*

No action required for this condition. An audit was not requested by the department.

Condition 19. *The approval holder may choose to revise a management plan specified under conditions 8 and 9 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice, it must:*

a) notify the department in writing that the approved plan has been revised and provide the department, at least 4 weeks before implementing the revised plan, with:

i. an electronic copy of the revised plan;

ii an explanation of the differences between the revised plan and the approved plan; and

iii reasons the approval holder considers that the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact.

No plans have been revised during the reporting period.

Condition 20. The approval holder may revoke its choice under condition 19 at any time by notice to the department. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the EPBC Act, the plan approved by the Minister must be implemented.

No action undertaken for this condition during the reporting period.

Condition 21 If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then:

a. condition 19 does not apply, or ceased to apply, in relation to the revised plan; and

b. the approval holder must implement the plan approved by the Minister.

To avoid any doubt, this condition does not affect any operation of conditions 19 and 20 in the period before the day the notice is given.

At the time of giving notice, the Minister may also notify that for a specified period of time condition 19 does not apply for one or more specified plans required under the approval.

No action undertaken for this condition during the reporting period.

Condition 22. Conditions 19, 20 and 21 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan to the Minister for approval.

No action undertaken for this condition during the reporting period.

Condition 23. If, after 5 years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without the written agreement of the Minister.

The action has commenced. No further action required.

Condition 24. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all plans referred to in the conditions of the approval on its website. Each plan must be published on the website within one month of being approved by the Minister. All plans must remain on the website for the duration of this approval unless otherwise agreed to in writing by the minister.

No changes were undertaken for this condition during the reporting period. The plans are published on the Senex website.

3. Closing summary

This report is the Fourth annual report for the Western Surat Gas Project EPBC approval.



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