Title of Proposal - Project Atlas

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Energy Generation and Supply (non-renewable)

1.2 Provide a detailed description of the proposed action, including all proposed activities.

Senex Assets PTY LTD (Senex) is planning to develop a coal seam gas field within Petroleum Lease (PL)1037 (Project Atlas) located approximately 44 km north of the Warrego Highway, between Wandoan and Wallumbilla, Queensland (Figure 1). The PL area of approximately 58km2 has been subject to extensive previous disturbance, with approximately 10% native vegetation remaining.

The proposed action (the Project) involves developing production wells and supporting infrastructure to provide gas exclusively for the domestic market. At least 40 years of commercial gas production is anticipated. The project does not include the small scale appraisal program currently being implemented in PL1037. However, after the appraisal activities have ceased, the Project will utilise infrastructure established for the appraisal program including operating wells, gathering system and associated facilities.

The project will also involve constructing and operating new Project components proposed to include: up to 113 wells and associated well site facilities; gas and water gathering system for the producing wells; access tracks for operational purposes; produced water management facilities, including additional aggregation dam capacity, water treatment facility, brine storage and an irrigation management system; and ancillary facilities to support gas field development.

The Queensland Environmental Protocol for Field Development and Constraints Analysis will be implemented to select sites for infrastructure. It involves the process for field validating biodiversity values, and implementing a hierarchy of avoidance, or minimizing impacts to identified values.

Senex intend to utilise third party owned and operated infrastructure, including a compression facility and pipeline to transport the gas from the compression facility to market, and are therefore not included in the action the subject of this referral.

Production Wells - Well drilling campaigns are expected to be 15 - 35 wells per annum. These will generally be spaced 500 to 750 m apart. Wells will be designed, constructed and abandoned in accordance with the Queensland codes of practice for constructing and abandoning coal seam gas (CSG) wells. The code outlines mandatory requirements and good practice to appropriately reduce the risk of environmental harm. Well sites will generally be constructed in an area of 100m x 100m allowing the initial drilling and completion of the well (installing surface facilities). Following initial drilling and commissioning of the well, sites will be

partially rehabilitated, leaving an area of approximately 60m x 60m allowing an adequate area for workover rig operations.
Following the well drilling phase, the wells will be completed, and a pump installed to dewater the production reservoir. Separate connections will be provided at the well head for the gas and water streams. Produced water will be pumped to the surface by a downhole progressive cavity pump and connected from the wellhead tubing.
The standard well site facility will be fenced and generally consist of:
-A wellhead gas and water metering package
-Gas and water separation equipment
-Natural gas power generation package to provide power for the electric motor driving the downhole pump
-Fuel and instrument gas scrubber to power the generator and supply gas to instruments
-Sand/particulate filter separator for water and gas streams
-Surface pressure piping constructed of steel to the required specification & connection to gathering system.
It will generally take up to 6 months to dewater each production well sufficiently for gas to flow; approximately 18 months to reach peak production; and an estimated 8 years for gas to free-flow. The targeted production rate is estimated to be between 24 and 40 TJ per day.
Once depleted of gas, wells will be capped, rehabilitated and abandoned. This is not expected to occur for at least 15 years from drilling a well, and may be much longer (anticipated to be between 20 and 30 years).

Gathering system - Gas and water from the wellsite facilities will be transported via the gas and water gathering system. The buried gathering system will enable gas at low pressure and water to flow through separate buried High Density Polyethylene (HDPE) pipelines, up to 650mm diameter.
To install the gathering lines, right-of-ways (RoWs) between 12 and 18m wide will require some vegetation to be removed, a trench to be excavated, pipeline laid, the trench backfilled, and RoW reinstated. A track will be maintained along the RoW for operations. Where possible, the pipeline right-of-way will be aligned with existing roads/tracks, fence or power lines or other linear infrastructure to minimise disturbance to native vegetation and overall impact on land users.
The gas gathering system will typically operate at 70 - 400 kPag with a Maximum Allowable Operating Pressure of 615 kPag. The water gathering system will typically operate at 140 – 700 kPag with a maximum operating pressure of approximately 1,350 kPag.
Water from the wellheads will be transported to the water processing and management facilities. Gas will be transported from the wells to the third party compression facility for processing by others.

Water Management - Groundwater will be abstracted (pumped) from CSG production wells to depressurise the target production coal seams.
The water management process for the produced water is expected to involve:
-Water from the gathering system will be transferred to centrally located aggregation dams. The aggregation dams will be purpose-built earthen dams with an impervious liner. Where additional aggregation dam capacity may be required, measures will range from pre-engineered above ground tanks to purpose built earthen dams with impervious liners.
- A water treatment facility (WTF) consisting of pre-filtration and softening pre-treatments, membrane filtration, and post-treatment pH adjustment will treat water from the dam. The WTF will have a treatment capacity of approximately 1.5 ML/d, with approximately 75% recovery.

-Treated water will be transferred to irrigation dam(s) (approximately 50ML each). The water may be blended with water from a third party to provide water of a suitable quality for irrigation.
-Brine from the water treatment process will be stored in a brine storage dam(s) from where it will be further concentrated via solar and mechanical evaporation to a concentrated slurry or solid salt. Salt or salt slurry will be trucked from site and disposed of at a Regulated Waste Facility. Brine storage of up to 300ML is included in the project design, which includes contingency to allow for variations in water quality.
Water treatment and storage infrastructure will have a footprint of up to 35 ha.

Ancillary Facilities- It is expected that all weather roads (up to 20 km), borrow pits (up to 14 ha), laydown & temporary construction areas (up to 16 ha), and temporary accommodation and associated facilities (3 ha) may be required.
Facilities for service and maintenance of plant and equipment, storage of fuel and chemicals and a washdown will be established, most likely located adjacent to the water treatment facility and laydown areas.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Project Atlas	1	-26.166070165178	149.75315835289
Project Atlas	2	-26.166224234538	149.78663232139
Project Atlas	3	-26.199652469537	149.78714730552
Project Atlas	4	-26.199652469537	149.8334958773
Project Atlas	5	-26.248468174551	149.83486916832
Project Atlas	6	-26.248622134889	149.75092675499
Project Atlas	7	-26.166070165178	149.7500684481
Project Atlas	8	-26.166070165178	149.75315835289
Project Atlas	9	-26.166070165178	149.75298669151
Project Atlas	10	-26.166070165178	149.75315835289

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

Project Atlas is located approximately 44 kilometres north of the Warrego Highway, between the townships of Wandoan and Wallumbilla (refer to Figure 1).

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

Approximately 380 hectares

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Refer to Figure 2 for lot numbers and land parcels

1.8 Primary Jurisdiction.

Queensland

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 07/2019

End date 07/2059

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Petroleum and Gas (Production and Safety) Act 2004

The *Petroleum and Gas (Production and Safety) Act 2004* (PAG Act) is administered by the Department of Natural Resources Mines and Energy (DNRME) and is the governing legislation for petroleum development in Queensland. The principal petroleum authority that is required prior to the construction of production gas wells and any other associated infrastructure in the gas fields for production is a Petroleum Lease. A petroleum lease will allow Senex Assets PTY LTD to carry out various activities, including drilling wells, producing petroleum, constructing and operating petroleum gathering pipelines and water pipelines, and water management and treatment authorised under the lease. Other related incidental activities may also be authorized under this lease. PL 1037 has been issued, authorizing Senex to carry out petroleum activities.

Environmental Protection Act 1994

This Act, administered by the Department of Environment and Science (DES), is the principal environmental legislation in Queensland and governs the environmental regulation of petroleum activities, including the issue of environmental authorities authorising petroleum activity.

Senex currently holds an Environmental Authority (EA) (EA0001207) over PL1037 that

authorises drilling of wells and construction of facilities to progress this Project. While this does allow for production wells and activities, it has a limit of 15 wells and associated infrastructure. An amendment to the EA will be sought to enable the 113 well gasfield project to be authorised. A copy of the existing EA is attached.

Additional Approvals

The Project may require additional approvals under other State legislation including but not limited to:

-*Nature Conservation Act 1992* (NC Act)

-*Regional Planning Interests Act 2014* (RPI Act)

-*Water Act 2000*

-*Aboriginal Cultural Heritage Act 2003*

-*Fisheries Act 1994*

Approvals under these acts will be obtained as required.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Over 7 and 8 August 2018, Senex held a community drop-in session in Miles and two sessions in Wandoan. These were advertised in the local Chinchilla News newspaper, Miles and Wandoan's community newsletters and via a letterbox drop to all Wandoan residents.

On 7 August, an evening dinner was held for community leaders. Attendees included the State Member for Callide, and the President of the local Wandoan Community Commerce and Industry. Over 20 local residents and business people attended the Miles session. In Wandoan, approximately 35 locals attended the drop-in sessions and dinner.

Those who attended the sessions were generally in favour of the project with most attendees eager to learn more about Project Atlas, including its location and job and local supply opportunities. With above ground and sub-surface subject matters experts present, locals generally used the opportunity, to build their understanding of the environment, including the groundwater, and the controls in place for minimising impacts to it, rather than to express gas industry related environmental concerns.

The majority of the Project Atlas tenure area overlaps the Iman People #2 Native Title determination area. The Registered Native Title Body Corporate for the Iman People #2 is the Wardingarri Aboriginal Corporation RNTBC. The remainder of the Project Atlas tenure is not currently overlapped by a registered Native Title claim, however, the Iman People #4 have lodged a Native Title claim application over this area and have asserted that they are the

Aboriginal Party under section 35(7) Aboriginal Cultural Heritage Act 2003 (Qld) for this area.

Senex held an introductory meeting with the Iman People #2 applicants and the Wardingarri Aboriginal Corporation RNTBC in November 2017, to provide an introduction to Senex and proposed activities on their country. In February 2018, a further meeting was held whereby Senex entered into a Cultural Heritage Management Agreement with both the Iman People #2 and the Wardingarri Aboriginal Corporation RNTBC. The Iman People have since undertaken a number of Cultural Heritage clearances for Senex under this Agreement.

Senex convened another meeting with the Wardingarri Aboriginal Corporation RNTBC in August 2018 to commence negotiations for a Native Title Agreement and have scheduled another meeting for October 2018. Senex have agreed to meet with representatives of the Iman People #2 and the Wardingarri Aboriginal Corporation RNTBC annually, to provide updates, discuss any concerns and maintain our ongoing relationship.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

The environmental assessment for the project will be assessed in Queensland through an Environmental Authority amendment application under the *Environmental Protection Act 1994*(QLD).

The following technical assessments have been completed for the proposed project to assess the impacts and support the relevant approvals and EA amendment application.

-Production Area Ecological Assessment (ERM, 2018).

-EPBC Referral - Water Report (KCB, 2018).

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Ecological Impact Assessment, involving desktop and field assessment has been undertaken for the Petroleum Lease area	The ecological assessment included completing a likelihood of occurrence of listed threated species and communities, based on species

Species	Impact
(ERM, 2018, Attachments 3a, 3b, 3c).	habitat requirements and field assessment. Those species found to be known or having a high likelihood of occurrence within the Petroleum Lease (Project Area) are detailed below. Potential impacts to listed species and threatened communities and their habitat may include: - Clearing of native vegetation and habitat for threatened and migratory species and threatened ecological communities; - Introducing and/or spreading weed species; - Disturbance or displacement to fauna species from foraging or roosting habitat, or breeding places; Degrading threatened species habitats or threatened ecological communities as a result of dust, erosion or accidental release of hazardous materials; - Habitat fragmentation; and - Fauna injury during construction activities and movement of machinery/vehicles.
Koala (Phascolarctos cinereus)	Koalas inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by food trees, i.e. Eucalyptus species. The distribution of their habitat is largely influenced by land elevation, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clay soils. The species may occur in association with remnant and regrowth Regional Ecosystem types -11.3.2, 11.3.4, 11.3.17, 11.3.25, 11.3.27, 11.3.39, 11.9.2, 11.9.9, 11.9.10 and 11.10.1 within the Project Area. RE 11.3.25, mapped as moderate confidence groundwater dependent ecosystem (GDE) along Wandoan and Woleebee Creeks, is within an unconsolidated sandy alluvial aquifer with an inferred presence of groundwater at a depth of 9 metres (KCB, 2018). As the dominant species (Eucalyptus tereticornis) is known to have a root depth able to access that depth, vegetation supporting Koala habitat may access groundwater. Based on the site specific analytical groundwater model, the project is not predicted to draw down the shallow groundwater (KCB, 2018), therefore it is unlikely that the vegetation supporting koala habitat will be impacted by groundwater level change. Habitat assessment identified 245 ha of potential koala habitat within the Project

Species	Impact
	Area. The habitat within the Project Area received a score of seven under the EPBC Act referral guidelines (DoE, 2014) and is therefore considered to be habitat critical to the survival of the koala. The area of potential disturbance is approximately 1.4 ha. As the proposed disturbance to habitat critical to the survival of the koala is less than the threshold of 20ha described in the guideline, the proposed development is not considered to adversely affect habitat critical to the survival of the koala. The proposed works are also considered unlikely to substantially interfere with the recovery of the koala because: - The project is not predicted to impact the shallow groundwater through drawdown, therefore it is unlikely that the vegetation supporting koala habitat will be impacted by groundwater level change; - The habitat to be removed is less than the threshold of 20 ha; - The development will not substantially increase the risk of dog attack to the koala; - The risk of vehicle strike is considered low, due to low traffic volumes, predominately daylight hour travel and restricted speeds during construction (less than 40kms) on access tracks; An assessment in accordance with SIG 1.1 concluded that the proposed development is highly unlikely to result in a significant impact to the koala (ERM, 2018).
Dulacca woodland snail (Adclarkia dulacca)	The Dulacca woodland snail is endemic to south-east Queensland, where it occurs as a small number of isolated and fragmented populations in the area between Miles and Dulacca, and south to Meandarra (Stanisic 2011). The species may also occur in the ‘Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt Bioregions’, SEVT and Brigalow TECs. The species may occur in association with remnant and regrowth regional ecosystem types- 11.3.1, 11.9.4 11.9.5, 11.9.9, 11.9.10 and 11.10.1 within the Project Area. The Project Area provides 262.1 ha of potential habitat for the species but no individuals were recorded as part of field surveys. The nearest record of the species is located approximately 15 km from the Project Area. No important populations of

Species	Impact
	the species have been identified as a result of field surveys. Only 5.2 ha of potential Dulacca woodland snail habitat is proposed to be disturbed as a result of the proposed development. Habitat assessments will be undertaken where habitat is proposed to be disturbed, and microhabitat features utilised for the species will be avoided, where practicable. An assessment in accordance with SIG 1.1 indicates that it is unlikely to lead to a significant impact to Dulacca woodland snail (ERM, 2018).
Ooline (Cadellia pentastylis)	Ooline grows in semi-evergreen vine thickets and sclerophyll vegetation on undulating terrain of varying geology, including sandstone, conglomerate and claystone. Soils generally have low to medium nutrient content and are normally associated with upper and mid-slopes in the landscape. This species may be associated with remnant and regrowth regional ecosystem types - 11.9.4, 11.9.5 and 11.9.10 within the Project Area. The Project Area provides 242.7 ha potential habitat for the species. No individuals were recorded as part of the field surveys. The nearest record of the species is located approximately 9.6 km from Project Area. As it is a distinct species, it is unlikely to occur in small vegetation patches that have been surveyed. No important populations of the species have been identified as a result of field surveys. Only 4.4 ha of potential Ooline habitat is proposed to be disturbed for the project. Targeted surveys will be undertaken where habitat is proposed to be disturbed, including in the area of its potential habitat and the species will be avoided. An assessment against Significant Impact Guideline 1.1 indicates proposed development is highly unlikely to lead to a significant impact to Ooline (ERM, 2018).
Belson’s Panic (Homopholis belsonii)	Belson’s panic generally occurs in three types of habitat: - Rocky, basaltic hills supporting Eucalyptus albens/Geijera parviflora (Wilga) woodland; - Flat to gently undulating alluvial areas supporting Casuarina cristata forest and sometimes brigalow or wilga; and - Drainage lines supporting C. cristata and sandy country dominated by cypress pine-bloodwood-ironbark-she-oak forest. In Queensland the species has

Species	Impact
	also been recorded in poplar box Eucalyptus populnea, mountain coolibah E. orgadophila, yarran Acacia melvillei and myall A. pendula communities. This species may be associated with remnant and regrowth regional ecosystem types: 11.3.1, 11.3.2, 11.3.17, 11.9.5 and 11.9.10 within the Project Area. The Project Area provides 319.4 ha potential habitat for Belson's panic. No Belson's panic individuals were recorded as part of the field surveys. The nearest record of the species is located approximately 6.5 km from the Project Area. No important populations of the species have been identified as a result of field surveys. Only 4.4 ha of potential Belson's panic habitat is proposed to be disturbed. Targeted surveys will be undertaken where habitat is proposed to be disturbed, so that the species will be avoided, as far as practicable. An assessment against Significant Impact Guideline 1.1 indicates proposed development is unlikely to lead to a significant impact to the species (ERM, 2018).
Brigalow	42.3 ha of the Brigalow (Acacia harpophylla dominant and co-dominant) TEC was confirmed present during field surveys in the Project Area. Through the Atlas gas field layout and by implementing the Environmental Protocol for Field Development and Constraints Analysis, there will be no disturbance and therefore no significant impact to the Brigalow TEC (ERM, 2018).
Semi-Evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (SEVT)	1.7 ha of the Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (SEVT) TEC was confirmed present during field surveys in the Project Area. Through the Atlas gas field layout and by implementing the Environmental Protocol for Field Development and Constraints Analysis, there will be no disturbance and no significant impact to the SEVT TEC (ERM, 2018).

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

Species	Impact
fork-tailed swift (Apus pacificus)	The fork-tailed swift was considered to have a high likelihood of occurrence within the Project Area, however, this species is almost entirely aerial and no migratory species were detected during the field surveys. An assessment against Significant Impact Guideline 1.1 indicates proposed development is unlikely to lead to a significant impact to the species (ERM, 2018).
white-throated needletail (Hirundapus caudacutus)	The white-throated needletail was considered to have a high likelihood of occurrence within the Project Area, however, this species is almost entirely aerial, and no migratory species were detected during the field surveys. An assessment against Significant Impact Guideline 1.1 indicates proposed development is unlikely to lead to a significant impact to the species (ERM, 2018).

2.5.2 Do you consider this impact to be significant?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

Yes

2.9.1 Impact table

Water Resource	Impact
Klohn Crippen Berger Ltd (KCB) has undertaken groundwater, surface water and water dependent ecosystem assessments for Project Atlas (KCB, 2018). The assessment utilised the Qld Office of Groundwater Impact Assessment(OIGA) data, numerical model outputs and results of field assessment to identify water related impacts to MNES values, taking into consideration the requirements of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) Guideline/checklist.	The following section provides a summary of the key results from the assessment. It is not considered that there is a significant impact to a water resource as a result of Project Atlas. Refer to Attachment 4 for further details including Significance Assessment against DoEE Significant Impact Guideline 1.3: Coal seam gas and large coal mining developments – impacts on water resources'.
Groundwater	CSG water production occurs as part of the CSG extraction process. Groundwater is removed via CSG production wells to depressurise the coal seams, which liberates gas flow. This depressurisation and gas flow sustains groundwater flow to maintain the target producing operational pressure. This has the potential to impact groundwater and associated water dependent assets. This includes the decline in groundwater level / pressure at water bores and groundwater dependent ecosystems (GDEs). Drawdown impacts were assessed using outputs from the OGIA numerical groundwater model, which was developed as part of the Surat Cumulative Management Area (CMA) Underground Water Impact Report (UWIR). Modelling outputs for the Project Only scenario predicted a groundwater level decline in the Springbok Sandstone, Walloon Coal Measures (WCM) and Hutton Sandstone as a result of CSG production for Project Atlas. Potential long-term impacts to groundwater bores have been assessed against the Water Act 2000 bore trigger threshold of 2 m for an unconsolidated aquifer (e.g. alluvium) and 5 m for a consolidated aquifer (e.g. Surat Basin units) using the outputs and drawdown predictions from the UWIR model. The results of the impact assessment indicate that there is only one bore, screened across the Springbok Sandstone, predicted to have a drawdown of more than 5m in the Project (project only

Water Resource	Impact
	scenario) (Table 1 & Figure 8). The bore was already triggered by adjacent developments (e.g. without any contribution from the Project). Within 25km radius of the project area, 62 bores are triggered to have a drawdown greater than 5m in the cumulative assessment with the other projects. The contribution of the Project Atlas development does not result in any additional bores being triggered in the cumulative scenario (Table 2). No spring complexes or watercourse springs are located within the project area. Four Great Artesian Basin (GAB) watercourse springs are located within 25km of the project area (refer to Figure 9), as identified in the UWIR (OGIA 2016a). These are reported to source groundwater from the Gubberamunda Sandstone, and Mooga Sandstone / Orallo Formation (OGIA 2016a). The Project does not contribute to any drawdown at these watercourse springs. Potential terrestrial GDEs associated with Woleebee and Wandoan Creeks are considered to source groundwater from the shallow alluvium, rather than the underlying Surat Basin units. Analytical modelling has indicated that drawdown is not predicted in the alluvium and therefore impacts to terrestrial vegetation potentially dependent on groundwater are considered unlikely. The potential impacts from groundwater extraction will be managed by adopting and implementing the appropriate monitoring, management and mitigation strategies, including meeting UWIR obligations as a resource tenure holder within the Surat CMA. These strategies are outlined in the CSG Water Management Plan (SENEX-ATLS-PLN-EN-006), Water Monitoring and Management Plan (SENEX-ATLS-PLN-EN-004), Environmental Management Plan (SENEX-ATLS-EN-PLN-001).
Surface Water	Impacts to surface water from the Project are expected to be minimal and are not considered to be significant (KCB,2018). The project does not include any abstraction or discharges associated with surface water and watercourses. Surface water diversions are not proposed. Surface water volumes are not anticipated to be impacted as the watercourses

Water Resource	Impact
	in this area are ephemeral, with significant flow following rain events rather than baseflow from groundwater. Beneficial use activities have the potential to impact shallow groundwater systems should over-irrigating occur, or the relevant beneficial use quality guidelines not be adhered to. These impacts are mitigated and will be managed by adopting the appropriate monitoring, management and mitigation strategies outlined in the CSG Water Management Plan [SENEX-ATLS-EN-PLN-006] and are not considered to be significant, There are no surface water users identified within the vicinity or immediately downstream of the Project.

2.9.2 Do you consider this impact to be significant?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

Much of the Project Area has been extensively cleared, though some comparatively extensive areas of remnant vegetation are retained in two State Forests (refer to Figure 9). Existing land use within the Project Area has primarily been agricultural (grazing of livestock, with some areas of dryland and irrigated fodder cropping). Evidence of forestry activity within the State Forests is apparent but does not appear to have been, or continue to be, a significant resource. Disturbances other than grazing and cropping include farm access tracks and infrastructure (e.g. power lines, dams, fences) and SunWater pipeline infrastructure.

Terrestrial Habitats

Habitats for native species were assessed during field survey events, with a focus on detecting habitat values considered important for listed threatened species. In general, the habitat types represented within the Project Area can be aligned with regional ecosystem (RE) communities. Key habitats identified include:

Eucalypt-dominated woodlands and open forests on riparian and floodplain areas (associated with RE 11.3.2, 11.3.4, 11.3.17, 11.3.25, 11.3.39)Eucalypt-dominated woodlands and open forests on uplands and non-alluvial plains (associated with RE 11.5.1, 11.9.2, 11.9.9, 11.9.10, 11.10.1)Brigalow *Acacia harpophylla* and/or belah *Casuarina cristata* open forests (associated with RE 11.3.1, 11.9.5)Semi-evergreen vine thicket (associated with RE 11.9.4)Ephemeral wetlands associated with riparian areas and drainage lines (associated with RE 11.3.27, farm dams)

Aquatic Habitats

Within the Project Area, natural water features include creeks, drainage lines and floodplains that are typically intermittent and ephemeral. Wetlands included dams and intermittent swamps that were defined based on the dominant flora. The majority of aquatic habitats surveyed are of limited ecological value. However, a number of artificial dams across the site as well as few permanent and semi-permanent watercourses are likely to provide a more constant source of water. All sites surveyed were impacted by the presence of cattle, vegetation clearing and invasive flora and erosion to varying extents. The aquatic habitat has a local value on a tributary scale, with persistent waterholes providing refugia for aquatic fauna and flora during dry conditions (KCB, 2018).

Though much of the Project Area has been cleared for agricultural purposes, the diversity of topography and soils, and therefore vegetation types, provides several broad habitat types where vegetation has been retained. The presence of ephemeral waterbodies within some

vegetation communities enhances their value to many woodland and open forest fauna, as well as directly supporting fauna that are specialist feeders in or at the margins of the water, such as waders, herons and waterfowl (ERM, 2018).

3.2 Describe the hydrology relevant to the project area (including water flows).

Project Atlas is located within the Upper Dawson River sub-basin, which is part of the Fitzroy River Basin. The Fitzroy River Basin is the second largest externally drained basin in Australia and the largest on the eastern coast. Covering an area of 150,000 km2, the basin contains several significant tributaries, including the Nogoa, Comet, Mackenzie and Dawson Rivers. The basin discharges into the Coral Sea, east of Rockhampton.

The divide between the upper Dawson sub-basin and the Condamine-Balonne Rivers sub-basin is located ~16 km to the south of the project area.

Key watercourses, as shown on Figure 11, within the vicinity of Project Atlas include:

Woleebee Creek, which flows north from its headwaters flanking the eastern boundary of the project to join Juandah Creek to the northeast.Smaller headwater tributaries of Woleebee Creek present within the Project area include Wandoan Creek, Splitter Creek and Ogle Creek. The Project Atlas petroleum lease lies almost entirely within the sub-catchment of Woleebee Creek.Watercourses across the Project area are characteristically ephemeral and typically flow only during significant runoff events. This is likely a result of the Project area being located in the upper most reaches of the catchments with limited runoff area

Watercourses within the Project Atlas area are classified as Stream Orders 1 to 5 using the Strahler method, with the majority being Stream Order 1 (minor streams) (DNRM 2017a). Reaches of Stream Order 5 (major streams) are associated with Woleebee Creek in the east.

The Surat Basin forms part of the Great Artesian Basin (GAB), which comprises several aquifers and confining aquitards. Aquifers of the Surat Basin are a significant source for water used for stock, public water and domestic supply.

The main aquifers within the GAB, from the deepest to the shallowest, are the Precipice Sandstone, Hutton Sandstone, Springbok Sandstone, Gubberamunda Sandstone and Mooga Sandstone. These aquifers are typically laterally continuous on a regional scale, have significant water in storage largely under confined conditions, and are extensively developed for water supply. The major aquitards in the Surat Basin are the Evergreen Formation, Eurombah Formation and Westbourne Formation.

Project Atlas is situated in an area where the Orallo Formation, Gubberamunda Sandstone and Westbourne Formation outcrop. Within these outcrop areas, particularly within the aquifer units, diffuse aquifer recharge is likely to occur.

Quaternary-age alluvium has been mapped as occurring within the Project area and is associated with Wandoan, Woleebee and Ogle Creeks, as shown on Figures 11. The alluvium is mapped as relatively thin across the Project Atlas lease, with increased lateral extent towards the north as Wandoan and Ogle Creeks flow into Woleebee Creek.

There are 318 registered third-party groundwater bores that have been identified (within a 25 km radius of Project Atlas) as being used for water supply purposes (OGIA 2017b). OGIA estimate that 1,345 ML/year is abstracted from these bores (OGIA 2017b), with the majority of the abstracted water attributed to the Hutton and Precipice Sandstone from a limited number of bores.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The Roma 1:250,000 series SG 5512 map (Milligan et al. 1967) broadly shows the geological units present within the Project Area. Lithic sandstone, siltstone and mudstone including bentonite and fossil wood of the Orallo Formation (Juo) and quartzose sandstone, conglomerate and siltstone of the Gubberamunda Sandstone (Jug) are prominent in the majority of the Project Area. Soils formed on these units include clays, sandy loams and clay loams.

The Project Area straddles the boundary of two subregions within the Brigalow Belt bioregion, Taroom Downs and Southern Downs. The vegetation of the Taroom Downs is dominated by forests of Brigalow (*Acacia harpophylla*), other communities typical of the Southern Downs subregion are present, including belah (*Casuarina cristata*), poplar box (Eucalyptus populnea), mountain coolibah (*E. orgadophila*) and narrow-leaved ironbark (*E. crebra*) communities.

Regional ecosystems were ground-truthed following field surveys within the Project Area. Regional Ecosystems confirmed to be present are illustrated in Figure 9.

Watercourses

The Project Area lies within the North East Coast drainage division, Fitzroy River drainage basin in the Upper Dawson catchment. The Vegetation Management Watercourse and Drainage Feature map (under the Queensland *Vegetation Management Act*) shows stream order 1, 2, 3, 4 and 5 watercourses within the Project Area. The extent of most REs associated with watercourses in the Project Area is very limited, exceptions include retained riparian vegetation (RE 11.3.4, 11.3.25) on major drainage lines. The RE 11.3.25 on Wandoan and Wolleebee Creeks are potential groundwater dependent ecosystems (GDEs)

Wetlands

As per the EPBC Wetland definition, intermittent wetlands occurring within the Project Area vary with some dominated by native flora, and others dominated by invasive species, particularly *Vachellia farnesiana*. There is 1.9 ha validated as RE11.3.27 freshwater wetlands (least concern), described as variable vegetation including open water with or without aquatic species and fringing sedgelands and eucalypt woodlands.

Artificial dams support limited vegetation and have been heavily impacted by the presence of cattle.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

No outstanding natural features and/or any other important or unique values relevant to the project area have been identified.

3.5 Describe the status of native vegetation relevant to the project area.

The extent of native vegetation in the Project Area is limited. Exceptions include retained riparian vegetation (regional ecosystems 11.3.4 and 11.3.25) on the major drainage lines, which is also described as potential GDE; and vegetation within Juandah and Hinchley State Forests (SF).

Of particular interest in Juandah SF is the presence of extensive areas of belah (*Casuarina cristata*) dominated open forest on clay loam soils. These are best described as RE 11.9.5 (Endangered), however it does not match the description for Brigalow under the criteria for the Threatened Ecological Community (TEC) (ERM, 2018). In addition, within the SF (and to a lesser extent to the south in cleared pastoral properties) are woodlands of Narrow-leaved Ironbark (*Eucalyptus crebra*) and white cypress pine (*Callitris glaucophylla*) on gravelly sands and duplex soils. State mapping and field assessment confirmed these woodlands are equivalent to RE 11.5.1.

A relatively small proportion of Hinchley SF is within the Project Area, where an intact area of Brigalow-dominant vegetation (RE 11.9.5) and two patches of semi-evergreen vine thicket (RE 11.9.4) occur.

Of the Project Area:

- 88.3% is non-remnant and previously subjected to land clearing

- 10.5% is remnant vegetation

- 1.2 % is mature regrowth.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The landscape of the Petroleum Lease is predominantly composed of undulating rises to low hills. There are small level floodplain areas associated with minor streams (1% slopes), and some steeper areas, generally to the north west. Slopes average approximately 2.4% with maximum slopes of up to 11% across the area.

The topography of the Project Atlas area is presented in Figure 10. Elevations across the area range between 250 m Australian Height Datum (AHD) and 360 mAHD. Topographic highs are located in the north western corner of the project area while lower areas are associated with Woleebee Creek and associated tributaries.

3.7 Describe the current condition of the environment relevant to the project area.

Project Area is within a rural landscape with cattle grazing and petroleum activities dominating the region. As a result, there are substantial areas of cleared land to facilitate associated land uses. Based on ground-truthed data, the Project Area is 88.3% cleared with 10.5% remnant vegetation and 1.2% mature regrowth. There are limited large tracts of vegetation within the Project Area, including part of Hinchley SF in the north-west of the Project Area, Juandah SF is the single largest patch in the PL of remnant vegetation; and there are strips and patches of riparian regrowth and remnant vegetation, most notably in continuous corridors of woodland on the banks and floodplains of Wandoan and Woleebee Creeks, which is potential GDE. Smaller areas of riparian habitat are present on Ogle and Splitter Creeks within the Project Area. Much of the Project Area is impacted by the presence of cattle, native vegetation clearing, invasive plants, and erosion to varying extents.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

There are no registered historical heritage places within the Petroleum Lease, based on a search of the following registers:

- World Heritage Register

- National Heritage List

- Commonwealth Heritage List

-Register of National Estate (non-statutory)

- State Heritage Register

- Reported Places Register (non-statutory)

- Western Downs Regional Council Heritage Overlay.

There is limited potential for historical archaeological deposits to exist across the Petroleum Lease given historic land use. In general, this early pastoral history can be archaeologically represented by:

- building remains (fireplaces, posts, post holes, etc);

- rubbish dumps (discarded bottles, crockery, metal and bone);

- yards and fencing (posts and/or post holes); and

- water infrastructure (bores, windmills, tanks, dams, wool scours and irrigation channels, etc.).

Given that the first structures in the Petroleum Lease were most likely built from bush timber and bark, it is unlikely that any structural elements remain. Instead, they are most likely to be represented by the more durable objects of domestic life, including glass and ceramic refuse. Based on the history of the Petroleum Lease, it is likely any archaeological remains would be of

local significance, providing insight into the settlement of the Wandoan area and the development of the early pastoral industry.

3.9 Describe any Indigenous heritage values relevant to the project area.

The traditional owners of the Project Atlas tenement area are the Iman People. The Iman People #2 has a determined Native Title claim over the majority of PL 1037, whilst the Iman People #4 have lodged a claim over the remaining area (which is yet to be accepted for registration). The Iman People #4 have asserted that they are the Aboriginal Party under section 35(7) *Aboriginal Cultural Heritage Act 2003* (Qld) for this unclaimed area.

The Iman People have identified Cultural Heritage on the tenement area and undertake site surveys for Senex prior to the carrying out of any project activities, under our Cultural Heritage Management Agreement.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The majority of the project area is freehold (approximately 89%), state forest (approximately 7.2%) and the remainder a combination of lands lease, reserve and road reserves.

3.11 Describe any existing or any proposed uses relevant to the project area.

Land use within and surrounding the Petroleum Lease is predominantly focused on primary agricultural resources. Rural/agricultural production associated with cattle grazing and cropping exists, along with petroleum activities proposed within the project area.

The Juandah State Forest is located within the Petroleum Lease, comprising an area of approximately 398ha. In addition, the eastern extent of the Hinchley State Forest (25 ha) is located within the northern extent of the Petroleum Lease.

The Jackson Wandoan road passes through the petroleum lease, which is also a travelling stock route. A small reserve is located adjacent to the stock route.

The tenure is surrounded by existing petroleum tenures held by Shell (QGC) and Australia Pacific LNG. There are a range of mining projects present in the greater region, which are at varying stages of development, as well as an exploration permit (EPQ7) for greenhouse gas over the Petroleum Lease and EPC 1164.

Land use is illustrated on Figure 12 and the extent of existing resource tenures in the surrounding area is illustrated on Figure 13.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

Measures to avoid or reduce impacts of the proposed action include the adoption of disturbance limits and implementation of the following management plans:

- Senex Queensland Environmental Protocol for Field Development and Constraints Analysis [SENEX-QLD-EN-PRC-019]

- Project Atlas Environmental Management Plan [SENEX-ATLS-EN-PLN-001]

- Project Atlas Rehabilitation Management Plan [SENEX-ATLS-EN-PLN-003]

- Project Atlas Significant Species Management Plan [SENEX-ATLS-EN-PLN-007]

- CSG Water Management Plan [SENEX-ATLS-EN-PLN-006]

- CSG Water Monitoring and Management Plan [SENEX-ATLS-EN-PLN-005]

- UWIR obligations for monitoring and reporting as a tenure holder in Surat CMA.

The following section provides a summary of the key measures that will be undertaken to minimise potential impacts associated with the proposed action.

Senex has sought to avoid important TEC’s and habitat where practicable. Therefore, by implementing the Queensland Environmental Protocol for Field Development and Constraints Analysis disturbance will not exceed the following :

- Brigalow TEC – 0 ha

- SEVT TEC – 0 ha

- Potential Ooline Habitat – 5 ha

- Potential Belsons Panic Habitat- 5 ha

- Potential Koala Habitat- 2 ha

- Potential Dulucca Woodland Snail Habitat – 6 ha

Impact - Clearing remnant and regrowth vegetation and the resultant loss of habitat for native MNES flora and fauna

Measures to be adopted:

- Environmental Protocol for Field Development and Constraints Analysis will be implemented- and regrowth and remnant vegetation will predominantly be avoided.

- Vegetation will not be cleared unless authorised under a Senex Access to Work (ATW) permit. The ATW will be approved prior to any vegetation clearance or disturbance occurring.

- Infrastructure shall avoid EPBC threatened communities, and threatened flora species and must be preferentially located within non-remnant vegetation.

- Targeted surveys will be undertaken for TEC's and threatened flora species Belson's Panic and Ooline, so that disturbance can be avoided, if they are found to occur.

- Habitat assessment will be undertaken for threatened fauna within the footprint of the proposed infrastructure, where habitat may be present.

- Area of disturbance will be minimised where practicable.

- To prevent unnecessary land and vegetation disturbance, vehicles and equipment will be retained within the approved work zone.

- 'No-go' areas will be GPS located and clearly marked e.g. with signage, bunting, flagging tape.

Impact - Indirect impacts to adjacent habitat areas as a result of noise, dust, runoff and erosion, including impacts to downstream environments

Measures to be adopted:

- The Queensland Fauna Stock Management Procedure will be implemented.

- Where identified, as required a qualified fauna spotter-catcher will manage the handling of any fauna or interference with potential breeding places. This may include a search immediately prior to clearing of vegetation for the presence of fauna species.

- Where fauna are detected, the spotter catcher will assess and implement the most appropriate method to avoid or minimise impacts on that fauna as a result of clearing.

- Staff and contractors will be made aware through general site induction and training of the

potential to generate dust emissions and mitigation and management measures that should be implemented.

- Vehicles, plant and machinery will comply with site-specific speed limits to minimise dust generation.

- Sediment and erosion control to be managed consistent with the Queensland Erosion and Sediment Control Procedure and the Contractor’s erosion and sediment control procedures.

- Where required, watercourse crossing points will be adequately stabilised to prevent erosion.

- RoW construction period in waterways will be minimised as far as practicable.

- Construction activities will avoid interfering or blocking natural drainage e.g. disturbing channel contours.

Potential Impact - Indirect impacts to adjacent habitat areas as a result of an introduction or spread or weed and pest species

Proposed Mitigations:

- Queensland Weed Hygiene Procedure will be implemented.

- A biosecurity plan will be developed and implemented for the Project.

- Activities will be planned so that movement of vehicles, plant, machinery and equipment avoid moving between properties as required.

- Access to a landholders property will not occur unless authorised under a Senex Access to Work (ATW) permit.

- Designated access routes will be developed and utilised.

- Site specific weed management requirements will be defined prior to access to any property or work site.

- Weed management and control methods will depend upon the location, weed species identified, the degree of the infestation, relevant landholder agreement or conduct and compensation agreements provisions, and local, state and national regulatory requirements.

- Imported material able to transport weed seed will be assessed to ensure they are free of contamination, disease and invasive weeds.

Potential Impact - Direct mortality or injury to native fauna during construction.

Measures to be adopted:

- The Queensland Fauna Stock Management Procedure will be implemented.

- Desktop and field assessment (where required) will be conducted to identify the likelihood of habitat features to support fauna, particularly threatened species;

- Excavations and trenches must be inspected for trapped fauna on a daily basis during construction.

- Measures to prevent fauna entrapment and facilitate escape must be implemented within open trenches.

- Where identified as required a qualified fauna spotter-catcher will manage the handling of any fauna or interference with potential breeding places. This may include search immediately prior to clearing of vegetation for the presence of fauna species. Where fauna are detected, the spotter catcher will assess and implement the most appropriate method to avoid or minimise impacts on that fauna as a result of clearing.

- Designated access routes will be developed and utilised.

- Vehicle speed limits will apply throughout construction.

Potential Impact - Fragmentation of connectivity areas

Measures to be adopted:

- Implementing the Senex Queensland Environmental Protocol for Field Development and Constraints Analysis [SENEX-QLD-EN-PRC-019]

- Infrastructure will be located preferentially avoiding, then minimize isolating, fragmenting, edge effects or dissecting tracts of native vegetation.

- Pipeline infrastructure and access routes will maximize co-location.

- RoW widths in native vegetation and waterway crossings will be minimised where practicable.

Potential Impact - water resources

Key mitigation and management measures related to water resources are presented in the CSG Water Management Plan [SENEX-ATLS-EN-PLN-006] and the CSG Water Monitoring and Management Plan [SENEX-ATLS-EN-PLN-005]. A summary of the mitigation and management measures is provided in the following:

- As per the requirements outlined in the Petroleum and Gas (Production and Safety) Act 2004, the volume of CSG water produced will be monitored and recorded and provided to the relevant authority as required.

- Groundwater monitoring will be the key mechanism for the early identification of the response to CSG water production, within the Walloon Coal Measures and other formations where groundwater receptors exist. Senex are not currently required by OGIA to install any

groundwater monitoring facilities within Project Atlas. A DNRM monitoring bore (RN 13030810) was installed in the Woleebee Creek alluvial aquifer immediately east of the Atlas tenement. Shallow groundwater monitoring data has been recorded at this bore by DNRM as far back as 2004, therefore this publicly available information effectively provides baseline alluvial groundwater levels in the vicinity of the Project. Senex will evaluate the possibility of obtaining access to this bore from DNRM, with a view to potentially conducting ongoing monitoring of the shallow alluvial groundwater. Senex will comply with any updates to the Water Monitoring Strategy that may be required in any future updates of the Underground Water Impact Report (UWIR). Further information related to groundwater monitoring associated with CSG production is provided in the CSG Water Monitoring and Management Plan [SENEX-ATLS-EN-PLN-005].

- Under the Water Act 2000, Senex is required to carry out baseline assessments of water bores prior to commencement of production. Senex have undertaken a baseline assessment program across all of the Atlas area. To date baseline assessments have been completed for 8 of the 13 bores originally identified within the Project Atlas Tenure. Of the remaining 5 bores, three were confirmed by the relevant landholder as not existing and two bores have not been assessed due to land access constraints. Senex will continue the baseline assessment program as access becomes available.

- The Water Act 2000 outlines requirements for make good obligations of a resource tenure holder for a bore located in immediately affected areas (IAA). The UWIR assigns IAA bores to tenure holders. Tenure holders must carry out a bore assessment and enter into a make good agreement with the bore owner if the bores are located within an IAA. Senex will comply with any updates to the make good agreements required in future updates of the UWIR, and undertake bore assessments as required as a result of make good obligations.

- Senex has developed the CSG Water Management Strategy, detailed in the CSG Water Management Plan, to maximise beneficial use of CSG water. To minimise impacts to landowner bores, Senex proposes to establish Landowner Water Supply Agreements (WSAs).

- Untreated CSG water quality will be monitored regularly. The water quality data from untreated CSG water will be used to inform the water treatment facility design and operation; and monitor the water quality for suitability of the designated beneficial use and in accordance water quality objectives in the relevant Qld State requirements, including the ‘General beneficial use approval’ (DEHP, 2014), or subsequent authorisations.

- Water quality data from treated CSG water will be monitored regularly and used to ensure the water quality is suitable for the designated beneficial use or water supply arrangement and in accordance water quality objectives in the ‘General beneficial use approval’ (DEHP, 2014) or subsequent updates to those objectives; and confirm the water treatment facility is effectively treating the CSG water.

- CSG produced water and brine, if produced, will be stored in facilities designed to minimise potential to impact the shallow groundwater quality. CSG water storage ponds will be constructed and operated in accordance with the ‘Manual for Assessing Consequence Categories and Hydraulic Performance of Structures’ (DEHP, 2016a) and relevant EA conditions.

- Senex will establish a seepage monitoring program surrounding water storage ponds, where

required. The program will be designed and undertaken to monitor for dam seepage in accordance with the relevant EA conditions, and the requirements outlined in the ‘Streamlined Model Conditions for Petroleum Activities’ (DEHP, 2016b).

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The following environmental outcomes (EO) are proposed for the production gasfield:

EO1 The extent of disturbance within remnant vegetation supporting habitat for MNES will be minimised by implementing the Senex Queensland Constraints Protocol.

EO2 Land disturbance to MNES threatened ecological communities (TECs) will be avoided.

EO3 No uncontrolled spread of restricted invasive, prohibited invasive, or high priority, pest flora or fauna species within or outside of the works area due to project activities.

EO4 Maintain continued MNES species population viability in the project area by managing activities associated with risk of fauna mortality.

EO5 Identify early-warning of drawdown impacts by groundwater monitoring as per Surat CMA UWIR reporting requirements.

EO6 Groundwater and surface water environmental values are not adversely impacted by water storage facilities. CSG water storage facilities are constructed and operated to minimise adverse impacts.

EO7 Implement the Atlas Water Monitoring and Management plan.

EO8 To the greatest extent practicable, CSG produced water is used for beneficial use consistent with the Queensland government’s prioritised hierarchy.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

World Heritage Properties

No world heritage properties occur within the project area; the closest is the Great Barrier Reef on the coast, approximately 290 km from the project area (Hydrobiology, 2018). The project is not likely to have a significant impact on the project after implementing the management and mitigation measures outlined, and considering the location of the project in the Upper Dawson River sub-basin of the Fitzroy River catchment.

National Heritage Places

No National Heritage Places occur within the project area; the closest is the Great Barrier Reef, approximately 290 km from the project area (KCB 2018). The project is not likely to have a significant impact on the project after implementing the management and mitigation measures outlined, and considering the location of the project in the Upper Dawson River sub-basin of the Fitzroy River catchment.

Wetlands of International Importance (declared Ramsar Wetlands)

The distance from the project area to Narran Lake Nature Reserve (the closest identified wetland) is more than 400 km. The wetland is in another surface water catchment from the Project Area, and it is unlikely activities within the project will impact any Ramsar sites (ERM,2018, KCB, 2018).

Listed migratory species Listed migratory species

Two migratory species considered ‘fly over species’ were assessed to have a high likelihood occurrence in the project area. The species were assessed against the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE 2013) and determined that impacts to these species are not significant (ERM, 2018 - Refer to section 7.1 and Annex E of the report).

Listed threatened species or any threatened ecological community

Two TECs were confirmed to be present in the Project Area from field surveys: Brigalow TEC of (42.3 ha) and SEVT TEC (1.7 ha). Both TECs are limited in extent in the project area. Senex will

implement the Senex Queensland Environmental Protocol for Field Development and Constraints Analysis SENEX-QLD-EN-PRC-019, and the field layout will avoid impacting the threatened ecological communities. Therefore it is unlikely that the project will have a significant impact on any TEC (ERM, 2018 - Refer to section 7.1).

Four threatened species were identified as having a high likelihood of occurrence in the project area. The significance of impacts to the species were assessed against the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE 2013). For each species, the impact assessment of indicative field layout on potential habitat found that it was unlikely to lead to a significant impact to the species. (ERM, 2018 - Refer to section 7.1 of the report).

Avoidance measures for potential threatened species habitat will be ensured by using the Environmental Protocol for Field Development and Constraints Analysis [SENEX-QLDS-EN-PRC-019], consequently, areas of Ecological Value are largely avoided for infrastructure development and production activities.

Environmental management practices have been developed to manage the potential impacts to terrestrial ecology associated within the Project Area. Indirect disturbances to terrestrial ecosystems, as well as potential for mortality of fauna, will be effectively managed by implementing the environmental management practices including the Significant Species Management Plan (SSMP) [SENEX-ATLS-EN-PLN-006].

Potential impacts managed through the SSMP includes identifying requirements for managing potential impacts to significant species (TEC, threatened species and migratory species) during pre-construction, construction and operational phases of the Project; and associated monitoring and reporting.

It is expected that there will be no significant impact upon the MNES TEC, threatened flora and fauna and migratory species within the Project Area; and offsets for MNES will not be required as part of this proposal.

Commonwealth marine environment

None occur within the project area; the closest is the Great Barrier Reef, approximately 290 km from the project area. The project is not likely to have a significant impact on the project after implementing the management and mitigation measures outlined, and considering the location of the project in the Upper Dawson River sub-basin of the Fitzroy River catchment.

Protection of the environment from actions involving Commonwealth land

There is no Commonwealth land within or adjacent to the Project area that will be impacted by the project.

Great Barrier Reef Marine Park

The project area does not traverse the Great Barrier Reef Marine Park; the project is situated approximately 290 km from the coastline (KCB, 2018). The project is not likely to have a significant impact on the project after implementing the management and mitigation measures outlined, and considering the location of the project in the Upper Dawson River sub-basin of the

Fitzroy River catchment.

Protection of the environment from nuclear actions

Nuclear actions are not proposed as part of the proposed action.

Protection of the environment from Commonwealth actions

The proposed project is not a Commonwealth action.

Commonwealth Heritage places overseas

The project area is located within Queensland and will not impact an overseas Commonwealth Heritage place.

A water resource, in relation to coal seam gas development and large coal mining development

Klohn Crippen Berger Ltd (KCB) has undertaken groundwater, surface water and water dependent ecosystem assessments for Project Atlas (KCB, 2018). The assessment utilised the Qld Office of Groundwater Impact Assessment(OIGA) data, numerical model outputs and results of field assessment to identify water related impacts to MNES values, taking into consideration the requirements of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) Guideline/checklist.

Groundwater modelling scenarios for the proposed gas production field were run by the Queensland Office of Groundwater Impact Assessment (OGIA) using their numerical groundwater model of the Surat Cumulative Management Area (CMA). The outputs of the model were then provided to Senex to undertake analysis and determine the extent and magnitude of the drawdown impacts to groundwater. OGIA modelled a ‘Project only’ scenario, which includes only CSG water production from the Atlas Project and a cumulative scenario to assess potential impacts in combination with surrounding operators.

For the ‘Project only’ scenario, the predicted long-term drawdown impacts associated with the Atlas Project are limited to the lower Springbok Sandstone, Walloon Coal Measures and upper Hutton Sandstone.

Potential impacts to spring complexes and watercourse springs were considered with respect to the *Water Act 2000* trigger threshold for springs (0.2 m drawdown) using the predicted drawdown for both the ‘Project only’. Spring trigger threshold exceedance were not predicted as a result of the CSG water production from the proposed action in either scenario.

Groundwater levels are predicted to decline (over the Project-life) within the Springbok Sandstone, WCM and Hutton Sandstone. This decline is a result of CSG water production, authorised under the *Petroleum and Gas (Production and Safety) Act 2004*.

Potential long-term impacts to groundwater bores have been assessed against the *Water Act 2000* bore trigger threshold of 2 m for an unconsolidated aquifer (e.g. alluvium) and 5 m for a consolidated aquifer (e.g. Surat Basin units) using the outputs and drawdown predictions from

the UWIR model. The results of the impact assessment indicate that only one bore screened across the Springbok Sandstone has a predicted drawdown of more than 5 m as a result of the Project development. The bore was already triggered by adjacent developments (e.g. without any contribution from the Project).

Non-drawdown related impacts may potentially occur as a result of CSG activities. These may include impacts associated with drilling and construction of CSG production wells, CSG produced water storage facilities, localised incidental CSG activities such as fuel spills or improper storage of chemicals and beneficial use activities, such as irrigation and stock watering. These potential impacts are mitigated and managed by adopting the appropriate standards and controls.

Direct impacts to surface water are not anticipated. Proposed activities of the Project do not include abstraction or discharges from / to watercourses.

Significance assessment against DoEE Guidelines have indicated that the potential impacts are not considered to be significant.

Summary of Potential Impacts Against the Significant Impact Criteria 1.3, Changes to Hydrological Characteristics (DoEE 2013)

Flow Regime (volume, timing, duration and frequency of surface water flows)

Project Atlas does not include any abstraction or discharges associated with surface water and watercourses.

CSG water production for Project Atlas is limited to the coal seams of the WCM. Groundwater abstracted as part of the CSG production process will be transported, treated and contained within Senex's planned water management infrastructure, located within the Project Atlas lease. The location of the infrastructure will be planned in accordance with Senex's 'Environmental Protocol for Field Development and Constraints Analysis'.

Potential impacts to the flow regime could include a reduction in baseflow to watercourses. Watercourse springs that may provide 'baseflow' and connectivity between the groundwater and surface water systems in the area are considered to source groundwater from the alluvium. Based on the results of the impact assessment, drawdown is not predicted in the alluvium, therefore unlikely to significantly change the flow regime.

Recharge rates to groundwater

Project Atlas is located in an area where the Westbourne Formation and Gubberamunda Sandstone outcrop. These outcrop areas are considered to be the location where diffuse rainfall recharge occurs to GAB formations. There is no drawdown predicted in these areas as a result of the Project Atlas, therefore recharge rates are unlikely to be impacted.

Aquifer pressure or pressure relationship between aquifers, groundwater table and potentiometric surface levels and Inter-aquifer connectivity

CSG water production for Project Atlas is limited to the coal seams of the WCM. In order to produce CSG, the formation pressure must be reduced, which as a result may induce leakage into the formation from overlying or underlying formations.

Modelling outputs from the UWIR model, reviewed as part of this assessment predicted a groundwater level decline in the Springbok Sandstone, WCM and Hutton Sandstone as a result of CSG production from Project Atlas. A review of the available groundwater elevation data suggests a downwards hydraulic gradient from the Springbok Sandstone to the WCM, and an upwards hydraulic gradient from the Hutton Sandstone to the WCM. Based on the magnitude of drawdown predicted, there is limited potential for a change in the pressure relationship between the WCM and overlying and underlying aquifers (Springbok Sandstone and Hutton Sandstone).

CSG production wells are drilled and constructed in accordance with the Code of Practice for the construction and abandonment of coal seam gas and petroleum wells, and associated bores in Queensland Version 1 (DNRM 2018e).

This code outlines the mandatory requirements and good practice to reduce the risk of environmental harm throughout the drilling process from overlying aquifers. Therefore, the impact to inter-aquifer connectivity is not considered significant.

Groundwater / surface water interactions, river / floodplain connectivity

CSG water production for Project Atlas is limited to the coal seams of the WCM. Project Atlas does not involve any abstraction or discharge from / to watercourses. Groundwater abstracted as a result of CSG production from Project Atlas will be treated / stored in site-specific infrastructure, which will be constructed and monitored in accordance with relevant standards / guidelines.

Groundwater systems which may provide ‘baseflow’ and connectivity between the groundwater and surface water systems in the area are identified to be limited to the alluvium. Based on the results of the impact assessment, no drawdown is predicted in the alluvium and therefore surface water baseflow volumes are not predicted to be impacted.

Therefore, potential impacts to groundwater and surface water interactions as a result of Project Atlas are not anticipated; and, will not result in any changes to river / floodplain connectivity.

Coastal processes

Project Atlas is located in south central Queensland. Given the distance to the coast and no potential impacts to surface water from Project Atlas, changes to coastal processes will not occur.

Summary of Potential Impacts Against the Significant Impact Criteria 1.3, Changes to Hydrological Characteristics (DoEE 2013)

Create risks to human or animal health or to the condition of the natural environment as a result of the change in water quality

Changes to groundwater or surface water quality as a result of CSG water production are not

anticipated.

Groundwater abstracted as a result of CSG production from Project Atlas will be treated / stored in site infrastructure, which will be constructed in accordance with relevant standards / guidelines and appropriately isolated to remove any potential human / animal interaction.

CSG production wells are drilled and constructed in accordance with the Code of Practice for the construction and abandonment of coal seam gas and petroleum wells, and associated bores in Queensland Version 1 (DNRM 2018e). This code outlines the mandatory requirements and good practice to reduce the risk of environmental harm throughout the drilling process from overlying aquifers.

It is not likely that Project Atlas would result in a risk to human or animal health, or to the condition of the environment as a result of a change in water quality.

Substantially reduces the amount of water available for human consumptive uses or for other uses, including environmental uses which are dependent on water of the appropriate quality

Groundwater within the vicinity of Project Atlas is utilised by a number of third-party users, with stock and domestic use being the dominant purpose.

Drawdown of a significant magnitude is limited to the WCM and there are no identified groundwater users that would be impacted as a result of Project Atlas.

Surface water volumes are not anticipated to be impacted as groundwater drawdown in baseflow contributing formations is limited.

It is not anticipated that Project Atlas would substantially reduce the amount of water available.

Causes persistent organic chemicals, heavy metals, salt or other potentially harmful substances to accumulate in the environment

Groundwater abstracted as a result of CSG production from Project Atlas will be treated / stored in site-specific infrastructure, which will be constructed and monitored in accordance with relevant standards / guidelines.

Fuel and chemicals used during drilling and operations will be stored and handled in accordance with the relevant Australian Standards (e.g. AS 3780:2008, AS 1940:2004, AS 3833:2007) and regulatory requirements.

No hydraulic stimulation is anticipated as part of Project Atlas and all CSG production wells will be designed, constructed and abandoned in accordance with “Code of Practice for the construction and abandonment of coal seam gas and petroleum wells, and associated bores in Queensland Version 1” (DNRM 2018e). This code outlines the mandatory requirements and good practice to reduce the risk of environmental harm. CSG production wells will be designed to prevent any interconnection between hydrocarbon bearing formations and aquifers, ensure that gas is contained within the well and associated pipework and equipment without leakage, ensure zonal isolation between different aquifers is achieved and not introduce substances that may cause environmental harm.

Beneficial use activities such as irrigation, proposed as part of Project Atlas will be undertaken so that the water quality objectives in the ‘General beneficial use approval’ (DEHP 2014) are met, and Senex will develop irrigation operation procedures to ensure that the quality and quantity of CSG water is appropriate for the receiving environment.

Activities associated with Project Atlas are unlikely to introduce organic chemicals, heavy metals, salt or other potentially harmful substances to the environment.

Seriously affects the habitat or lifecycle of a native species dependent on a water resource

The alluvium is identified as potentially providing ‘baseflow’ and species may be dependent on this water resource from baseflow. Drawdown is not predicted in the alluvium and therefore surface water baseflow volumes and species dependent on water resources are not predicted to be impacted.

No changes to groundwater or surface water quality have been identified as a result of Project Atlas, therefore, no changes to habitat or lifecycle of a native species dependent on a water resource are expected.

Causes the establishment of an invasive species (or the spread of an existing invasive species) that is harmful to the ecosystem function of the water resource

No changes to groundwater and surface water quality have been identified as a result of Project Atlas. Therefore, no changes to the water resource that may cause the establishment of an invasive species (or the spread of an existing invasive species) are expected.

There is a significant worsening of local water quality (where current local water quality is superior to local or regional water quality objectives)

Groundwater quality data sourced from the GWDB within the vicinity of Project Atlas indicate there is generally a distinction between the water chemistry for shallower formations (alluvium, Gubberamunda Sandstone) and the other deeper formations (e.g. WCM, Springbok Sandstone), which show a sodium-chloride signature, while the upper formations indicate a calcium / magnesium-bicarbonate water type.

All formations are currently used by third-party users and the water quality is considered appropriate for their uses. Surface water is not generally used as a sustainable water source due to the ephemeral nature of the watercourses, and no discharges are proposed to the surface water system. No changes to water quality have been identified as a result of Project Atlas. Therefore, no significant worsening of local water quality is anticipated.

High quality water is released into an ecosystem which is adapted to a lower quality of water

Groundwater abstracted as a result of CSG production from Project Atlas will be treated / stored in site-specific infrastructure, which will be constructed and monitored in accordance with relevant standards / guidelines.

Beneficial use activities such as irrigation, proposed as part of Project Atlas, will be undertaken so that the water quality objectives in the ‘General beneficial use approval’ (DEHP 2014) are

met, and Senex will develop irrigation operation procedures to ensure that the quality and quantity of CSG water is appropriate for the receiving environment.

Surface water discharge is not proposed. Therefore, no changes to ecosystem water qualities are anticipated.

In conclusion, the potential impacts from the proposed action of the Project have been assessed, and where appropriate, suitable mitigation measures have been developed. It is considered that implementing these measures will ensure any potential adverse impacts are appropriately avoided, managed or mitigated; enabling Project Atlas to be developed without having a significant impact on Matters of National Environmental Significance, while meeting the principles of sustainable development.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Yes, Senex is demonstrating good environmental management practice in implementing its projects in South Australia and Queensland.

Senex Assets Pty Ltd is a wholly owned subsidiary of Senex Energy Limited (Senex) and conducts its operations in accordance with Senex Energy management systems. Senex Energy conducts activities under its Health, Safety and Environment Management System (HSEMS) Management System [SENEX-CORP-HS-STD- 001] which is applicable to all Senex worksites and personnel working for, or on behalf of Senex. Potential environmental impacts and effects of Senex operations and activities are identified and managed, using a risk based and systematic approach. The HSEMS contains Senex's environmental management policy and is the framework under which environmental compliance is achieved across the operations.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Senex has not been involved in any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Senex Energy conducts activities under its Health, Safety and Environment Management System (HSEMS) Management System [SENEX-CORP-HS-STD- 001] which is applicable to all Senex worksites and personnel working for, or on behalf of Senex. Potential environmental impacts and effects of Senex operations and activities are identified and managed, using a risk

based and systematic approach. The HSEMS contains Senex's environmental management policy and is the framework under which environmental compliance is achieved across the operations.

Senex is committed to conducting its operations and activities in an environmentally sound and responsible manner. Activities are planned and managed to minimise disturbance to the environment as far as practicable by utilising environmental standards consistent with developments in technology, industry codes of practice and relevant statutory requirements.

Senex will manage potential impacts of the proposed activities in a manner consistent with the management approaches commensurate with production phase activities. There are a variety of management procedures and plans to be implemented that are relevant to the scope of these activities.

Key management documents to be implemented for the project include:

- Senex Queensland Environmental Protocol for Field Development and Constraints Analysis SENEX-QLD-EN-PRC-019

- Project Atlas Environmental Management Plan [SENEX-ATLS-EN-PLN-001]

- Project Atlas Rehabilitation Management Plan S[ENEX-ATLS-EN-PLN-003]

- Project Atlas Significant Species Management Plan [SENEX-ATLS-EN-PLN-007]

- CSG Water Management Plan [SENEX-ATLS-EN-PLN-006]

- CSG Water Monitoring and Management Plan [SENEX-ATLS-EN-PLN-005]

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
DEHP, 2014. General Beneficial Use Approval – Associated Water (including coal seam gas water)	High	Low
DEHP 2016a. Manual for Assessing Consequence Categories and Hydraulic Performance of Structures'	High	Low
DEHP, 2016b. Streamlined Model Conditions for Petroleum Activities'	High	Low
DES. 2018. "Queensland Groundwater Dependent Ecosystems and Potential GDE Aquifer Mapping, Version 1.5." State of Queensland, Department of Environment and Science. https://wetlandinfo.ehp.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/	High	Reflected in the mapping
DNRM, 2017. Code of Practice for constructing and abandoning coal seam gas wells and associated bores in Queensland	High	Low
ERM, 2018. Production Area Ecological Assessment Report	High	Stated in Report
KCB, 2018. EPBC Referral – Water Report	High	Stated in Report
Milligan et al., 1967. Roma 1: 250,000 series SG 55-12 map	High	Low
OGIA, 2016b. 'Hydrogeological Conceptualisation Report for the Surat Cumulative Management Area'. State of Queensland, The Office of	High	Low

Reference Source	Reliability	Uncertainties
Groundwater Impact Assessment, Department of Natural Resources and Mines		
2016a. ‘Underground Water Impact Report for the Surat Cumulative Management Area’. Brisbane: State of Queensland, The Office of Groundwater Impact Assessment, Department of Natural Resources and Mines.	High	Stated in Report
OGIA, 2017a. ‘Identification of Gaining Streams in the Surat Cumulative Management Area; Hydrogeological Investigation Report’. State of Queensland, The Office of Groundwater Impact Assessment, Department of Natural Resources and Mines	High	Low
OGIA, 2017b. ‘Surat CMA Aquifer Attribution and Water Use Estimate (Senex_WU_Formations_23032017.Xlsx)’. State of Queensland, The Office of Groundwater Impact Assessment, Department of Natural Resources and Mines	High	Low

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

PL 1037 was granted by the Queensland Government in March 2018 and the project is restricted to extracting gas from the stated tenure. The proponent has investigated alternatives within the Project Area (e.g. number of wells, well layout, infrastructure location) to maximise commercial outcomes of the proposed Atlas development as well as avoid and minimise environmental disturbance, which has resulted in disturbance of threatened species, ecological communities and their habitat largely being avoided.

Taking no action has not been considered. Australia has an identified shortfall in domestic gas supply on the east coast, and there is a ready market identified to supply other proponents, thereby supporting Queensland’s economic viability.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Project Director

9.2.2 First Name

Darren

9.2.3 Last Name

Stevenson

9.2.4 E-mail

Darren.Stevenson@senexenergy.com.au

9.2.5 Postal Address

GPO Box 2233
Brisbane QLD 4001
Australia

9.2.6 ABN/ACN

ABN

48160649338 - SENEX ASSETS PTY LTD

9.2.7 Organisation Telephone

07 3335 9000

9.2.8 Organisation E-mail

Darren.Stevenson@senexenergy.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Darren Brett Stevenson, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 12/11/2018

I, Darren Brett Stevenson, the person proposing the action, consent to the designation of Senex Assets Pty Ltd as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 12/11/2018

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Project Director

9.5.2 First Name

Darren

9.5.3 Last Name

Stevenson

9.5.4 E-mail

Darren.Stevenson@senexenergy.com.au

9.5.5 Postal Address

GPO Box 2233
Brisbane QLD 4001
Australia

9.5.6 ABN/ACN

ABN

48160649338 - SENEX ASSETS PTY LTD

9.5.7 Organisation Telephone

07 3335 9000

9.5.8 Organisation E-mail

Senex@senexenergy.com.au

Proposed designated proponent - Declaration

I, Darren Brett Stevenson, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:..... Date: 12/11/2018

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Project Director

9.8.2 First Name

Darren

9.8.3 Last Name

Stevenson

9.8.4 E-mail

Darren.Stevenson@senexenergy.com.au

9.8.5 Postal Address

GPO Box 2233
Brisbane QLD 4001
Australia

9.8.6 ABN/ACN

ABN

48160649338 - SENEX ASSETS PTY LTD

9.8.7 Organisation Telephone

07 3335 9000

9.8.8 Organisation E-mail

Senex@senexenergy.com.au

Referring Party - Declaration

I, Darren Brett Stevenson, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:..... Date: 12/11/2018.....

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. Att 2_SENEX-ATLS-EN-APA-005_EPBC_Figures.pdf
2. Att 3a Atlas Biodiversity Ecology Report PART 1_MAIN REPORT.pdf
3. Att 3b Atlas Biodiversity Ecology Report PART 2_MAIN REPORT.pdf
4. Att 3c Atlas Biodiversity Ecology Report APPENDICES.pdf
5. Att 4a Water Report_Vol1.pdf
6. Att 4b Water Report_Vol2.pdf
7. Att 4c Water Report_Vol3.pdf
8. Att 4d Water Report_Vol4.pdf
9. Att 4e Water Report_Vol5.pdf
10. Att 4f Water Report_Vol6.pdf
11. Att 4g Water Report_Vol7.pdf
12. Att 4h Water Report_Vol8.pdf
13. Att 5_ Atlas EA00001207.pdf
14. Att 6_streamlined-model-conditions-petroleum.pdf
15. Att 7_SENEX-QLDS-EN-PRC-019 QLD Environmental Constraints Protocol .pdf
16. Att 9_SENEX-ATLS-EN-PLN-003-Atlas Rehab Plan Rev1.pdf
17. Att 13_SENEX-CORP-EN-POL-001 - Env Policy.pdf
18. Att 14_SENEX-CORP-HS-STD-001- HSE System.pdf
19. MAA-132 Project Atlas Block Description.jpg
20. SENEX-ATLAS-EN-PLN-001_3 Project Atlas EMP.pdf
21. SENEX-ATLS-EN-PLN-003_2 - Atlas Rehabilitation Plan.pdf
22. SENEX-ATLS-EN-PLN-004_0 Project Atlas WMMP.pdf
23. SENEX-ATLS-EN-PLN-006_0 Atlas CSG Water Management Plan.pdf
24. SENEX-ATLS-EN-PLN-007_0 - Atlas Significant Species Management Plan.pdf
25. Signed declaration.pdf