

Attachment E: PoO Proposed Activities

ACTIVITY	DISTURBANCE DETAILS														
	YEAR 1			YEAR 2			YEAR 3			YEAR 4			YEAR 5		
	TENURE	ADDITIONAL PARAMETERS	DISTURBANCE AREA (ha)	TENURE	ADDITIONAL PARAMETERS	DISTURBANCE AREA (ha)	TENURE	ADDITIONAL PARAMETERS	DISTURBANCE AREA (ha)	TENURE	ADDITIONAL PARAMETERS	DISTURBANCE AREA (ha)	TENURE	ADDITIONAL PARAMETERS	DISTURBANCE AREA (ha)
DOMAIN 1: EXPLORATION															
Seismic	PLs 227 (1069), 511 and 71 (1068)	1,262km	252.4												
Total Domain Disturbance Area (ha)	252.4														
DOMAIN 2: ROADS, TRACK, LAYDOWN AND BORROW PITS															
Track	PLs 227 (1069) and 511	11.5km	6.19												
Total Domain Disturbance Area (ha)	6.19														
DOMAIN 5: WELL PADS AND ASSOCIATED INFRASTRUCTURE															
Wells	PLs 227 (1069) and 511	7	8												
Total Domain Disturbance Area (ha)	8														
DOMAIN 6: PIPELINES															
Gathering	PLs 227 (1069) and 511	11.5	1												
Total Domain Disturbance Area (ha)	1														
TOTAL DISTURBANCE AREA (ha) per year	267.59														

Attachment F: PoO Action Program

Condition	Condition Description	Internal Process	Environmental Management Strategy
A1	This environmental authority authorises the carrying out of the following resource activities: a) The petroleum activities and specified relevant activities listed in Table 1 –Authorised Petroleum Activities to the extent they are carried out in accordance with the activity's corresponding scale or intensity or both (where applicable); and b) Incidental activities that are not otherwise specified relevant activities.	The ADZ Energy Surat Operations Environmental Management Plan ADZ-SUR-HSEQ-GEN-PLN-004 Section 2.2 Annual Return	Prior to commencing construction, the existing and proposed activities and disturbance will be assessed against the authorized activities in Table 1 to ensure the scale and intensity quantities are not exceeded. A review of activities and disturbance carried out under the EA is completed annually as part of the preparation of the Annual Return. This includes assessment of compliance with Table 1.
A2	The authorised resource activities are authorised subject to the conditions of this environmental authority.		
A3	This environmental authority does not authorise environmental harm unless a condition contained in this environmental authority explicitly authorises that harm. Where there is no condition, the lack of a condition shall not be construed as authorising harm.		
A4	Monitoring Standards All monitoring must be undertaken by a suitably qualified person.	The ADZ Energy Surat Operations Environmental Management Plan ADZ-SUR-HSEQ-GEN-PLN-004 Section 2.3 HSEQ Compliance Schedule	Specialist monitoring services are and will be undertaken by suitably qualified persons within the respective discipline areas. ADZ Energy has engaged the following specialist environmental consultants to undertake monitoring. 1. Assured Environmental - Stack Emission Testing and Ambient Air Quality modelling 2. Earth search – Baseline groundwater, Shallow Groundwater and Drinking water monitoring. 3. Boobook- ecological and biodiversity assessments 4. Tetra Tech Coffey – Soil sampling and monitoring
A5	If requested by the administering authority in relation to investigating a complaint, monitoring must be commenced within 10 business days.	The ADZ Energy Incident Management Procedure (ARM-SUR HSEQ-GEN-PRC-015)	ADZ Energy will respond in a timely manner to requests for monitoring by the administering authority and will endeavor to meet any requests and timeframes for completion of monitoring.
A6	All laboratory analyses and tests must be undertaken by a laboratory that has NATA accreditation for such analyses and tests.		All laboratory samples are submitted to ALS or SGS for analyses. ALS & SGS are NATA accredited

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A7	Notwithstanding Condition A6, where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.		laboratories for the analysis that is required under the EA.
A8	Monitoring and sampling must be carried out in accordance with the requirements of the following documents (as relevant to the sampling being undertaken), or a later published version: a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – <i>Environmental Protection (Water and Wetland Biodiversity) Policy 2019</i>; b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat #6890.1); c) for noise, the Environmental Protection Regulation 2019; d) for air, the Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions, as appropriate for the relevant measurement; e) for soil, the Guidelines for Surveying Soil and Land Resources, 2nd edition (McKenzie et al. 2008), and/or the Australian Soil and Land Survey Handbook, 3rd edition (National Committee on Soil and Terrain, 2009); or f) for dust, Australian Standard AS3580.	The ADZ Energy Surat Operations Environmental Management Plan Section 2.3 HSEQ Compliance Schedule	The ADZ Energy HSEQ Compliance Schedule provides an overview of environmental monitoring requirements across the individual development areas. This includes reference to the mandatory documents identified in Condition A8.
A9	Notification Requirements In addition to the requirements under Chapter 7, Part 1, Division 2 of the Environmental Protection Act 1994, the administering authority must be notified through the Pollution Hotline and in writing, as soon as possible, but within 48 hours of becoming aware of any of the following events: a) any unauthorised significant disturbance to land; b) potential or actual loss of structural or hydraulic integrity of a dam; or c) potential or actual loss of structural or hydraulic integrity of a flow back water containment structure; d) when the level of the contents of any regulated dam reaches the mandatory reporting level; e) when a regulated dam will not have available storage to meet the design storage allowance on 1 November of any year; f) potential or actual loss of well integrity;	The ADZ Energy Incident Management Procedure (ARM-SUR- HSEQ-GEN-PRC-015)	The ADZ Energy Incident Management Procedure (ARM-SUR-HSEQ-GEN-PRC- 015) details reporting procedures and requirements that must be implemented following an environmental incident. This procedure includes provision for determining whether an incident is subject to the notification requirement under Condition A9 and provides instructions for providing notification through the Pollution Hotline, where required.

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	g) when the seepage trigger action response procedure required under Condition G11(g) is or should be implemented; h) unauthorised releases of any volume of prescribed contaminants to waters. i) unauthorised releases of volumes of contaminants, in any mixture, to land greater than: i) 200 L of hydrocarbons; or ii) 200 L of stimulation additives; or iii) 500 L of stimulation fluids; or iv) 500L of flow back waters; or v) 1 000 L of brine; or vi) 5 000 L of raw sewage; or vii) 10 000 L of treated sewage effluent. j) the use of restricted stimulation fluids; k) groundwater monitoring results from a landholder's active groundwater bore monitored under the stimulation impact monitoring program which is a 10% or greater increase from a previous baseline value for that bore and which renders the water unfit for its intended use; or l) monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.		
A10	Contingency Procedures Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents which include, but are not necessarily limited to: a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity; b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity; c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring; d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused; e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land;	The ADZ Energy Emergency Response Plan - Surat Basin (ARM-SUR-HSEQ-GEN-PLN-002)	The ADZ Energy Emergency Response Plan - Surat Basin (ARM-SUR-HSEQ- GEN-PLN-002) prescribes the responses to be undertaken in the event of an Environmental Emergency. In addition, emergency response exercises are completed regularly to practice response to emergency situations.

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	f) training of staff to enable them to effectively respond; and g) procedures to notify the administering authority, local government and any potentially impacted landholder.		
A11	Maintenance of Plant and Equipment All plant and equipment must be maintained and operated in their proper and effective condition.	CMM (Pronto)	Maintenance of plant and equipment is scheduled and tracked through the ADZ CMMS (Pronto), in accordance with OEM recommendations.
A12	The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable: a) regulated dams and low consequence dams; b) exploration, appraisal and development wells; c) water treatment facilities; d) brine encapsulation facilities; e) landfill cells; f) sewage treatment facilities; g) specifically authorised discharge points to air and waters; h) any chemical storage facility associated with the environmentally relevant activity of chemical storage; i) field compressor stations; j) central compressor stations; k) gas processing facilities; and l) pipeline compressor stations.		Key infrastructure listed in Condition A12 have appropriate signage in place identifying the facility. ADZ Energy operates the following 'infrastructure that are easily identified through signage and GIS mapping; 1. Conventional oil and gas Wells 2. Pipelines 3. Evaporation Pond/Dams 4. Field Compressor Facilities 5. Gas injection and storage wells 6. Gas processing facility
A13	Measures to prevent fauna being harmed from entrapment must be implemented during the construction and operation of well infrastructure, dams and pipeline trenches.	The ADZ Energy Fauna Management Plan (ARM-SUR-HSS-GEN-PRC- 002)	All activities are undertaken in accordance with the ADZ Fauna Management Plan (ARM-SUR-HSS-GEN-PRC-002), which details strategies to be undertaken for minimising the potential for harm to fauna. These include, use of a spotter-catcher for clearing activities, fencing to prevent wildlife and livestock ingress and measures for preventing entrapment.

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A14	Erosion and Sediment Control For activities involving significant disturbance to land, control measures that are commensurate to the site-specific risk of erosion, and risk of sediment release to waters must be implemented to: a) allow stormwater to pass through the site in a controlled manner and at non-erosive flow velocities; b) minimise soil erosion resulting from wind, rain, and flowing water; c) minimise the duration that disturbed soils are exposed to the erosive forces of wind, rain, and flowing water; d) minimise work-related soil erosion and sediment runoff; and e) minimise negative impacts to land or properties adjacent to the activities (including roads).	The ADZ Energy Erosion & Sediment Control Plan (ARM- SUR-HSS-GEN-PLN-005)	The ADZ Energy Erosion & Sediment Control Plan (ARM-SUR-HSS-GEN-PLN- 005) details requirements for erosion and sediment control for construction and operational activities. These include the development of erosion and sediment control plans for high-risk activities, completion of routine inspections during construction and operations to provide for early identification of potential erosion.
A15	The control measures required by Condition A14 must be in accordance, to the greatest practicable extent, with the International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control (BPESC) document and/or the Australian Pipeline Industry Association (APIA) Code of Environmental Practice: Onshore Pipelines (2017).		
A16	Environmental Nuisance Petroleum activities must not cause environmental nuisance at a sensitive place, other than where an alternative arrangement is in place.	The ADZ Energy Incident Management Procedure (ARM-SUR- HSEQ-GEN-PRC-015) details reporting requirements for complaints. The ADZ Air Receiving Environment Monitoring Plan (AREMP) (ARM-SUR-HSEQ-GEN-PLN-011) also provides for response to complaints regarding dust & nuisance	Prior to commencing new activities, potential environmental nuisance risks to potential sensitive receptors (such as noise) are reviewed to ensure that appropriate mitigation measures (including alternative arrangements) are implemented, as appropriate. This includes consideration of the nature of the activities (i.e., potential noise levels, generation of dust, etc) and distances to potential sensitive receptors (i.e., homesteads in the vicinity of the activities).

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A17	Documentation A certification must be prepared by a suitably qualified person within 30 business days of completing every plan, procedure, program and report required to be developed under this environmental authority, which demonstrates that: a) relevant material, including current published guidelines (where available) have been considered in the written document; b) the content of the written document is accurate and true; and c) the document meets the requirements of the relevant conditions of the environmental authority.	All plans will be certified by a suitably qualified ADZ Energy representative or third party if required.	Certification by a suitably qualified person will be provided for all documents required under the environmental authority. This will include, but is not limited to the following documents: • ADZ Erosion & Sediment Control Plan (ARM-SUR-HSS-GEN-PLN-005) • ADZ Fauna Management Plan (ARM-SUR-HSS-GEN-PRC-002) • ADZ AREMP (ARM-SUR-HSEQ-GEN-PLN-011) • ESS01 Rehabilitation Plan (Kincora Gas Project) (ARM-SUR-HSEQ-GEN-PRC-009) • ADZ Energy Stimulation Impact Monitoring Plan (ARM-SUR-HSEQ-GEN-PLN-012)
A18	All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.	ADZ Energy Health, Safety, Environmental & Quality Management System (HSEQMS)	All HSEQMS documentation is stored on and is accessible to operators for use through a shared drive: (K: Drive). ADZ is currently developing a share point site that will gradually replace the K: Drive and will provide access to and retention of relevant documents. Relevant documents will be retained for at least 5 years. Operator inductions and periodic audits/inspections will be undertaken to assure appropriate implementation of procedures.
A19	All documents required to be developed under this environmental authority must be kept for five years.		
A20	All documents required to be prepared, held or kept under this environmental authority must be provided to the administering authority upon written request within the requested timeframe.		
A21	A record of all complaints must be kept including the date, complainant's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.	ADZ Energy Incident Management System (SharePoint)	All complaints are recorded as incidents. SharePoint is a platform/system designed and modified to meet ADZ Incident Management requirements.
B1	General Waste Management Measures must be implemented so that waste is managed in accordance with the waste and resource management hierarchy and the waste and resource management principles	The ADZ Energy Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-	For all waste that is not beneficially re-used under an End of Waste Code or under a provision of the environmental authority (e.g., use of produced water for dust suppression), ADZ Energy engages

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B2	Waste, including waste fluids, but excluding waste used in closed-loop systems, must be transported off-site for lawful re-use, remediation, recycling or disposal, unless the waste is specifically authorised by a condition of this environmental authority, to be disposed of or used on site.	004) Section 3.4 Waste End of Waste Code Associated Water (ENEW07547018) Associated Water Usage Register	Cleanaway to collect all waste from the operational sites (including regulated waste) and has appointed Cleanaway as its Regulated Waste Transport Agent. No green waste has been burned or reused on site. Note that Armour Energy (Surat Basin) Pty Limited is registered as Resource Producer for an End of Waste Code on 06/06/2019.
B3	Waste fluids, other than flare precipitant stored in flare pits, or residual drilling material or drilling fluids stored in sumps, must be contained in either: a) an above ground container; or b) a structure which contains the wetting front.		
B4	Green waste may be used on-site for either rehabilitation or sediment and erosion control, or both.		
B5	Vegetation waste may be burned if it relates to a state forest, timber reserve or forest entitlement area administered by the <i>Forestry Act 1959</i> and a permit has been obtained under the <i>Fire and Rescue Service Act 1990</i> .		
B6	Pipeline Wastewater Pipeline waste water may be released to land provided that it: a) can be demonstrated it meets the acceptable standards for release to land; and b) is released in a way that does not result in visible scouring or erosion or pooling or run-off or vegetation die-off	End of Waste Code Associated Water (ENEW07547018) Associated Water Usage Register	Water applied to land under these conditions is sampled where required, and otherwise the application and area is monitored to ensure compliance with the relevant conditions. Note that some of these uses are implemented under the End of Waste Code (EOWC) for Produced Water, and in such cases monitoring, environmental controls and record-keeping is implemented in accordance with the EOWC. Note that Armour Energy (Surat Basin) Pty Limited Registered as Resource Producer for an End of Waste Code on 06/06/2019.
B7	Authorised Uses of Produced Water Produced water may be re-used in: a) drilling and well hole activities; or b) stimulation activities.		
B8	Produced water may be used for dust suppression provided the following criteria are met: a) the amount applied does not exceed the amount required to effectively suppress dust; and b) the application: i. does not cause on-site ponding or runoff; ii. is directly applied to the area being dust suppressed; iii. does not harm vegetation surrounding the area being dust suppressed; and iv. does not cause visible salting.		

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B9	Produced water may be used for construction purposes provided the use: a) does not result in negative impacts on the composition and structure of soil or subsoils; b) is not directly or indirectly released to waters; c) does not result in runoff from the construction site; and d) does not harm vegetation surrounding the construction site.		
B10	If there is any indication that any of the circumstances in Condition B8(b) or B9 is occurring the use must cease immediately and the affected area must be remediated without delay.		
B11	Sewage Treatment Treated sewage effluent or greywater can be released to land provided it: a) meets or exceeds secondary treated class B standards for a treatment system with a daily peak design capacity of between 150 EP and 1500 EP; or b) meets or exceeds secondary treated class C standards for a treatment system with a daily peak design capacity of less than 150 EP.		NA - ADZ Energy does not, nor plans to operate any sewage treatment works during the Plan of Operations Period (refer to A12).
B12	The release of treated sewage effluent or greywater authorised in Condition B11 must: a) be to a fenced and signed contaminant release area(s) b) not result in pooling or run-off or aerosols or spray drift or vegetation die-off c) be to a contaminant release area(s) that is kept vegetated with groundcover, that is: i. not a declared pest species; ii. kept in a viable state for transpiration and nutrient uptake; and iii. grazed or harvested and removed from the contaminant release area as needed, but not less than every three months.		
B13	Residual Drilling Material If sumps are used to store residual drilling material or drilling fluids, they must only be used for the duration of drilling activities.		Residual drilling material will be transported off site for disposal at an appropriately licensed facility. A licensed regulated waste transporter will be used for transport of waste to the facility

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B14	Residual drilling material can only be disposed of on-site: a) by mix-bury-cover method if the residual drilling material meets the approved quality criteria; or b) if it is certified by a suitably qualified third party as being of acceptable quality for disposal to land by the proposed method and that environmental harm will not result from the proposed disposal.		
B15	Records must be kept to demonstrate compliance with Conditions B13 and B14.		
C1	Notwithstanding condition A16, noise from the petroleum activity(ies) at levels less than those specified in Table 2 —Noise nuisance limits are not considered to be environmental nuisance.	The ADZ Energy Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004) section 3.3 Noise	Prior to commencing new activities, potential noise nuisance risks to potential sensitive receptors (such as noise) are reviewed to ensure that appropriate mitigation measures (including alternative arrangements) are implemented, as appropriate. This includes consideration of the potential noise levels and distances to potential sensitive receptors (i.e., homesteads in the vicinity of the activities).
C2	If the noise subject to a valid complaint is tonal or impulsive, the adjustments detailed in <i>Table 3—Adjustments</i> to be added to noise levels at sensitive receptors are to be added to the measured noise level(s) to derive LAeq, adj, 15 min.	The ADZ Energy Incident Management Procedure (ARM-SUR- HSEQ-GEN-PRC-015)	To date, ADZ Energy has not received a noise nuisance complaint and therefore, no measurements have been required under these provisions.
C3	Notwithstanding Condition C1, emission of any low frequency noise must not exceed the following in the event of a valid complaint about low frequency noise being made to the administering authority: a) 60 dB(C) measured outside the sensitive receptor; and b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or c) 50 dB(Z) measured inside the sensitive receptor; and d) the difference between the internal A-weighted and Z-weighted (Max LpZ, 15 min) noise levels is no greater than 15 dB.		In the event of a complaint, ADZ Energy will undertake an investigation to determine compliance with these provisions and will report any non-compliance to the Administering Authority if required by the environmental authority.

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D1	Unless venting is authorised under the <i>Petroleum and Gas (Production and Safety) Act 2004</i> or the <i>Petroleum Act 1923</i>, waste gas must be flared in a manner that complies with the following: a) an automatic ignition system is used; and b) a flame is visible at all times while the waste gas is being flared; and c) there are no visible smoke emissions other than for a total period of no more than 5 minutes in any 2 hours; or d) it uses an enclosed flare.		The Kincora Gas Plant has a vertical flare fitted with an automatic ignition system and has a visible flare. To date, no complaints received regarding smoke emissions.
D2	Fuel Burning and Combustion Facilities – Ambient Air Quality Monitoring The operation of fuel burning or combustion facilities must not result in ground level concentrations of contaminants exceeding the maximum limits specified in, <i>Table 4 —Maximum ground level concentration of contaminants to air</i>.	The Kincora Emissions Monitoring and Dispersions Modelling.	The Kincora Emissions Monitoring and Dispersions Modelling Report dated 30th Sept 2023 and completed by Airlabs, demonstrates compliance with condition D3.
D3	Air Receiving Environment Monitoring Program An air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in <i>Table 4 —Maximum ground level concentration of contaminants to air</i>.		An AREMP will be completed in accordance with Condition D3 and D4. Stack emissions monitoring and reporting will be conducted on an annual basis and certified in accordance with Conditions D5 to D7 (and D8, if applicable).
D4	The AREMP must include, but not necessarily be limited to: a) the delineation of the relevant air shed(s); b) the identification of background reference sites and impact monitoring sites within the relevant air shed(s), including sensitive places; c) a monitoring program to be carried out annually that; i. includes background reference and impact monitoring sites; ii. includes an assessment of meteorological conditions (wind speed and direction); iii. is sufficient to determine compliance with the limits listed in, Table 4- Maximum ground level concentration of contaminants to air; iv. identifies the effects of the authorised contaminants released to air in the relevant air shed(s); v. is representative of when the fuel burning or combustion facilities are operating under maximum operating conditions for the annual period; d) an assessment of the condition of each fuel burning or combustion facility; and e) a description of other significant point sources in the air shed and		

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	surrounding land use including sensitive places.		
D5	An AREMP report must be written annually which includes the information required by condition D4 and an assessment of the extent to which monitoring data for ground level concentrations complies with the air contaminant limits listed in <i>Table 4 — Maximum ground level concentration of contaminants to air</i> .		
D6	Where monitoring data collected under condition D2 indicates that ground level concentrations listed in <i>Table 4 — Maximum ground level concentration of contaminants to air</i> have not been met, the AREMP report required by condition D5 must also include an assessment of: a) the extent to which the values of the air environment in the relevant air shed(s) are being protected; b) an assessment of whether contaminant releases to the air environment are consistent with the air management hierarchy in the Environmental Protection (Air) Policy 2019; and c) any corrective actions that have been implemented or proposed to be implemented to become consistent with the air management hierarchy and achieve compliance with <i>Table - 4 Maximum ground level concentration of contaminants to air</i>.		
D7	A statement of compliance prepared by a suitably qualified person must accompany each AREMP report required by Condition D5 and if applicable, Condition D6 stating: a) whether the AREMP as most recently implemented complies with the requirements of Condition A4, Condition A8, Condition D4 and D5; b) that, to the best of the suitably qualified person's knowledge, the assessment required by condition D5 and if applicable, condition D6 is true, correct and complete; and c) that, to the best of the suitably qualified person's knowledge, all information provided as part of the statement of compliance, including attachments, is true, correct and complete.		
D8	Where condition D6 applies, the documents required by Conditions D5, D6 and D7 must be given to the administering authority within 5 business days after the AREMP report is written.		

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E1	General Contaminants must not be directly or indirectly released to land except for those releases authorised by a condition of this environmental authority.	The ADZ Energy Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004) The ADZ Energy Incident Management Procedure (ARM-SUR- HSEQ-GEN-PRC-015) The ADZ Energy Spill SOP-ENV-01	The ADZ Energy Surat Operations Environmental Management Plan (ARM- SUR-HSEQ-GEN-PLN-004) includes control strategies for spill prevention and management, and incidental releases to ground are not authorised. The Incident Management Procedure contains provision for internal and regulatory reporting of spills/releases, incident response and implementation of response actions.
E2	Topsoil Management Top soil must be managed in a manner that preserves its biological and chemical properties.	The ADZ Energy Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004) <i>Section 3.5 Land</i>	The ADZ Energy Surat Operations <u>Environmental Management Plan (ARM- SUR-HSEQ-GEN-PLN-004)</u> contains control strategies to mitigate the level of impacts to topsoil and land. This includes managing topsoil in a way that preserves its biological and chemical integrity, and implementation of erosion and sediment control measures. Note that acid sulphate soils are not expected to be present within the development area.
E3	Land Management Land that has been significantly disturbed by the petroleum activities must be managed to ensure that mass movement, gully erosion, rill erosion, sheet erosion and tunnel erosion do not occur on that land.	The ADZ Energy Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004) <i>Section 3.5 Land</i>	The ADZ Energy Surat Operations <u>Environmental Management Plan (ARM- SUR-HSEQ-GEN-PLN-004)</u> contains control strategies to mitigate the level of impacts to topsoil and land. This includes managing topsoil in a way that preserves its biological and chemical integrity, and implementation of erosion and sediment control measures.
E4	Acid Sulfate Soils Acid sulfate soils must be treated and managed in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.		Note that acid sulphate soils are not expected to be present within the development area.

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E5	Chemical Storage Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.	The ADZ Energy HSS07 Chemical Substance Management Chemical Substance Register (ARM-SUR-HSEQ-GEN-REG-010)	Tanks and vessels will be routinely inspected for potential integrity issues. Earthen secondary containment bunds are located at Kincora GPF that enable the recovery of any spilled contaminants. The IOR fuel cell is double skinned tank with internal bund.
E6	Pipeline Operation and Maintenance Pipeline operation and maintenance must be in accordance, to the greatest practicable extent, with the relevant section of the APIA Code of Environmental Practice: Onshore Pipelines (2009).	ADZ Energy Pipeline Management System (PMS) ADZ Energy Pipeline Integrity Management Plan (PIMP)	Pipeline integrity, including operations and maintenance will be managed in accordance with a PMS & PIMP, which have been developed in accordance with the APIA Code of Environmental Practice: Onshore Pipelines (2009).
E7	Pipeline Reinstatement and Revegetation Pipeline trenches must be backfilled and topsoils reinstated within three months after pipe laying.		Pipeline construction plans will provide for reinstatement of pipeline alignments in accordance with Conditions E7 to E9.
E8	Reinstatement and revegetation of the pipeline right of way must commence within 6 months after cessation of petroleum activities for the purpose of pipeline construction.		
E9	Backfilled, reinstated and revegetated pipeline trenches and right of ways must be: a) a stable landform; b) re-profiled to a level consistent with surrounding soils; c) re-profiled to original contours and established drainage lines; and d) vegetated with groundcover which is not a declared pest species, and which is established and growing.		
F1	Confirming Biodiversity Values Prior to undertaking activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground biodiversity values of the native vegetation communities at that location must be undertaken by a suitably qualified person.	The ADZ Energy Surat operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004)	The Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004) include provision for constraints planning, which is conducted prior to the commencement of construction for new activities. This includes the completion of an environmental constraints assessment based on ecological mapping and ground truthed ecological surveys to confirm on-the-ground biodiversity values
F2	A suitably qualified person must develop and certify a methodology so that Condition F1 can be complied with and which is appropriate to confirm on-the-ground biodiversity values.		

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F3	For Conditions F4 to F6, where mapped biodiversity values differ from those confirmed under Conditions F1 and F2 petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on-the-ground biodiversity values.		of the native vegetation communities. Ecological surveys are conducted by a suitably qualified ecologist. ADZ Energy will engage suitably qualified consultants (including Boobook Ecological Consultants, SLR and E2M Consultants) to undertake ecological and biodiversity surveys of proposed disturbance areas. These consultants have established protocols to assure that the surveys comply with the requirements of Condition F1, F2 and related conditions.
F4	Planning for Land Disturbance The location of the petroleum activity(ies) must be selected in accordance with the following site planning principles: a) maximise the use of areas of pre-existing disturbance; b) in order of preference, avoid, minimise or mitigate any impacts, including cumulative impacts, on areas of native vegetation or other areas of ecological value; c) minimise disturbance to land that may result in land degradation; d) in order of preference, avoid then minimise isolation, fragmentation, edge effects or dissection of tracts of native vegetation; and e) in order of preference, avoid then minimise clearing of native mature trees.	The ADZ Energy Surat operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004	The Plan includes provision for constraints planning, which is conducted prior to the commencement of construction for new activities. This is based on and incorporates the following principles: • Minimising adverse environmental impacts and enhancing environmental benefits associated with Project activities, products or services; conserving and protecting the biodiversity values and water resources in its operational areas. • Avoiding direct and indirect adverse impacts on environmental values including MNES where practicable. • Mitigating and managing direct and indirect adverse impacts to minimise cumulative adverse impacts on environmental values including MNES. • This also requires checks against specific biodiversity constraints in the environmental authority prior to conducting new activities.
F5	Linear infrastructure construction corridors must: a) maximise co-location; b) be minimised in width to the greatest practicable extent; and c) for linear infrastructure that is an essential petroleum activity authorised in an environmentally sensitive area or its protection zone, be no greater than 40m in total width.		
F6	Authorised Disturbance to ESAs Where petroleum activities are to be carried out in environmentally sensitive areas or their protection zones, the petroleum activities must be carried out in accordance with <i>Table 5 — Authorised petroleum activities in environmentally sensitive areas and their protection zones</i>.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
F7	Despite Condition F6 of this environmental authority, the infrastructure (and associated activities necessary for construction, operation and maintenance purposes) listed below are permitted within the secondary protection zone of Category B Environmentally Sensitive Areas and within a Category C Environmentally Sensitive Area at the locations specified in <i>Table 6 – Authorised Resource Activity(ies) Disturbance</i> .		A land disturbance report will be prepared/compiled annually in accordance with Condition F8. Land disturbance records will be kept for the life of the tenements and environmental authority.
F8	A report must be prepared for each annual return period for all petroleum activities that involved clearing of any environmentally sensitive area or protection zone which includes: a) records able to demonstrate compliance with Conditions F4, F5 and F6; b) a description of the works; c) a description of the area and its pre-disturbance values (which may include maps or photographs, but must include GPS coordinates for the works); and d) based on the extent of environmentally sensitive areas and primary protection zones on the relevant resource authority(ies), the proportion of native vegetation cleared per environmentally sensitive area and primary protection zone, including regional ecosystem type, over the annual return period.		
F9	Impacts to Prescribed Environmental Matters Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the <i>Environmental Offsets Act 2014</i>.		
F10	Records demonstrating that each impact to a prescribed environmental matter that is not likely to, result in a significant residual impact to that matter must be: a) completed by an appropriately qualified person; and b) kept for the life of the environmental authority.		
G1	Authorised Impacts to Waters The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to any spring, wetland or other surface waters.		
			Considering the nature of development (conventional) and aquifer systems, extraction of produced water is not expected to have an impact on water levels in aquifer supporting springs, wetlands, surface waters

Condition	Condition Description	Internal Process	Environmental Management Strategy
G2	The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to a terrestrial groundwater dependent ecosystem.		or GDEs.
G3	Contaminant Release Contaminants must not be directly or indirectly released to any waters except as permitted under this environmental authority.	The ADZ Energy Incident Management Procedure (ARM-SUR- HSEQ-GEN-PRC-015) details reporting requirements. Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004)	The Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN- PLN-004) prohibits ADZ Energy operators and contractors from releasing materials to waters.
G4	Authorised Activities in Waters Petroleum activities must not occur in or within 200m of a: a) wetland of high ecological significance; b) Great Artesian Basin Spring; or c) subterranean cave GDE.	Surat Operations Environmental Management Plan (ARM-SUR-HSEQ-GEN-PLN-004)	prior to the commencement of construction for new activities. This is based on and incorporates the following principles: • Minimising adverse environmental impacts and enhancing environmental benefits associated with Project activities, products, or services; conserving and protecting the biodiversity values and water resources in its operational areas. • Avoiding direct and indirect adverse impacts on environmental values including MNES where practicable. • Mitigating and managing direct and indirect adverse impacts to minimise cumulative adverse impacts on environmental values including MNES. • This also requires checks against specific watercourse, wetland and biodiversity constraints in
G5	Only construction or maintenance of linear infrastructure is permitted in or within any wetland of other environmental value or in a watercourse.		
G6	The construction or maintenance of linear infrastructure in a wetland of other environmental value must not result in the: a) clearing of riparian vegetation outside of the minimum area practicable to carry out the works; or b) ingress of saline water into freshwater aquifers; or c) draining or filling of the wetland beyond the minimum area practicable to carry out the works.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
G7	After the construction or maintenance works for linear infrastructure in a wetland of other environmental value are completed, the linear infrastructure must not: a) drain or fill the wetland; b) prohibit the flow of surface water in or out of the wetland; c) lower or raise the water table and hydrostatic pressure outside the bounds of natural variability that existed before the activities commenced; d) result in ongoing negative impacts to water quality; e) result in bank instability; or f) result in fauna ceasing to use adjacent areas for habitat, feeding, roosting or nesting.		the environmental authority prior to conducting new activities. A register will be developed to record the requisite details of works conducted in watercourses. This record will be kept for the life of the tenements and environmental authority
G8	The construction or maintenance of linear infrastructure activities in a watercourse must be conducted in the following preferential order: a) firstly, in times where there is no water present; b) secondly, in times of no flow; c) thirdly, in times of flow, providing a bankfull situation is not expected and that flow is maintained.		
G9	The construction or maintenance of linear infrastructure authorised under condition G5 must comply with the water quality limits as specified in <i>Table 7—Release limits for construction or maintenance of linear infrastructure</i>.		
G10	Monitoring must be undertaken at a frequency that is appropriate to demonstrate compliance with Condition G9.		
G11	A register must be kept of all linear infrastructure construction and maintenance activities in a wetland of other environmental value and watercourses, which must include: a) location of the activity (e.g. GPS coordinates (GDA94) and watercourse name); b) estimated flow rate of surface water at the time of the activity; c) duration of works, and d) results of impact monitoring carried out under Condition G10.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
G12	Petroleum activity(ies) on floodplains must be carried out in a way that does not: a) concentrate flood flows in a way that will or may cause or threaten a negative environmental impact; or b) divert flood flows from natural drainage paths and alter flow distribution; or c) increase the local duration of floods; or d) increase the risk of detaining flood flows.		
G13	Seepage Monitoring Program A seepage monitoring program must be developed by a suitably qualified person which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for the detection, and management of any seepage of contaminants to groundwater as a result of storing contaminants.	ADZ Energy Groundwater & Surface Water Monitoring Program Kincora	The ADZ Energy Groundwater & Surface Water Monitoring Program Kincora details groundwater seepage monitoring requirements.
G14	The seepage monitoring program required by Condition G13 must include but not necessarily be limited to: a) identification of the containment facilities for which seepage will be monitored; b) identification of trigger parameters that are associated with the potential or actual contaminants held in the containment facilities; c) identification of trigger concentration levels that are suitable for early detection of contaminant releases at the containment facilities; d) installation of background seepage monitoring bores where groundwater quality will not have been affected by the petroleum activities authorised under this environmental authority to use as reference sites for determining impacts; e) installation of seepage monitoring bores that: i. are within formations potentially affected by the containment facilities authorised under this environmental authority (i.e. within the potential area of impact); ii. provide for the early detection of negative impacts prior to reaching groundwater dependent ecosystems, landholder's active groundwater bores, or water supply bores; and iii. provide for the early detection of negative impacts prior to reaching migration pathways to other formations (i.e. faults, areas of	ADZ Energy Groundwater & Surface Water Monitoring Program Kincora	The ADZ Energy Groundwater & Surface Water Monitoring Program Kincora details groundwater seepage e monitoring requirements.

Condition	Condition Description	Internal Process	Environmental Management Strategy
	unconformities known to connect two or more formations); f) monitoring of groundwater at each background and seepage monitoring bore at least quarterly for the trigger parameters identified in Condition G14(b); g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in Conditions G14(b) and G43(c) trigger the early detection of seepage, or upon becoming aware of any monitoring results that indicate potential groundwater contamination; h) a rationale detailing the program conceptualisation including assumptions, determinations, monitoring equipment, sampling methods and data analysis; and i) provides for annual updates to the program for new containment facilities constructed in each annual return period.		
G15	Seepage Monitoring Bore Drill Logs A bore drill log must be completed for each seepage monitoring bore in Condition G14 which must include: a) bore identification reference and geographical coordinate location; b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details; c) standing groundwater level and water quality parameters including physical parameter and results of laboratory analysis for the possible trigger parameters; d) lithological data, preferably a stratigraphic interpretation to identify the important features including the identification of any aquifers; and e) target formation of the bore.	ADZ Energy Groundwater & Surface Water Monitoring Program Kincora	
H1	Rehabilitation Planning A Rehabilitation Plan must be developed by a suitably qualified person and must include the: rehabilitation goals; and procedures to be undertaken for rehabilitation that will: achieve the requirements of Conditions H2 to H5, inclusive; and provide for appropriate monitoring and maintenance	The ADZ Energy ESS01 Rehabilitation Plan (Kincora Gas Project) ARM-SUR-HSEQ-GEN-PRC-009	Rehabilitation plan attached in Appendix 2. The only significantly disturbance areas that has been deemed as 'no longer required' since the start date of this Environmental Authority is the Waratah Oil facility which is currently in the process of being decommissioned and rehabilitated – a Transitional rehabilitation plan has been developed (ADZ

Condition	Condition Description	Internal Process	Environmental Management Strategy
H2	Transitional Rehabilitation Significantly disturbed areas that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria: a) contaminated land resulting from petroleum activities is remediated and rehabilitated b) the areas are: c) non-polluting; d) a stable landform; e) re-profiled to contours consistent with the surrounding landform; f) surface drainage lines are re-established; g) top soil is reinstated; and - either: i. groundcover, that is not a declared pest species, is growing; or ii. an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.		Energy_SUR_WARATAH_Rehab_Plan_2024)
H3	Final Rehabilitation Acceptance Criteria – Non ESAs All significantly disturbed areas caused by petroleum activities which are not being or intended to be utilised by the landholder or overlapping tenure holder, must be rehabilitated to meet the following final acceptance criteria measured either against the highest ecological value adjacent land use or the pre-disturbed land use: a) greater than or equal to 70% of native ground cover species richness; b) greater than or equal to the total per cent of ground cover; c) less than or equal to the per cent species richness of declared plant pest species; and d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then at least one regional ecosystem(s) from the same broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or pre-disturbed land, must be present.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
H4	Final Acceptance Criteria - ESAs Where significant disturbance to land has occurred in an environmentally sensitive area, the following final rehabilitation criteria as measured against the pre-disturbance biodiversity values assessment (required by conditions F1 and F2) must be met: a) greater than or equal to 70% of native ground cover species richness; b) greater than or equal to the total per cent ground cover; c) less than or equal to the per cent species richness of declared plant pest species; d) greater than or equal to 50% of organic litter cover; e) greater than or equal to 50% of total density of coarse woody material; and f) all predominant species in the ecologically dominant layer, that define the pre-disturbance regional ecosystem(s) are present.		
H5	Remaining Dams Where there is a dam (including a low consequence dam) that is being or intended to be utilised by the landholder or overlapping tenure holder, the dam must be decommissioned to no longer accept inflow from the petroleum activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.		
I1	Drilling Activities Oil based or synthetic based drilling muds must not be used in the carrying out of the petroleum activity(ies).	The ADZ Energy Well Integrity Management Plan (ARM-HSS-GEN-PLN-004)	Each Well has a specific designed Drilling Program that prescribes the parameters for drilling activities. the program is designed by the ADZ Drilling Engineer.
I2	Drilling activities must not result in the connection of the target gas producing formation and another aquifer.	Appendix 1 ADZ Energy Well Integrity Policy	Wells will be installed and maintained in accordance with the <i>Code of Practice For the construction and abandonment of petroleum wells and associated bores in Queensland</i> .
I3	Practices and procedures must be in place to detect, as soon as practicable, any fractures that have or may result in the connection of a target formation and another aquifer as a result of drilling activities.	<i>Code of Practice For the construction and abandonment of petroleum wells and associated bores in Queensland</i>	The purpose of the Well Integrity Management Plan (WIMP) is to describe how ADZ Energy manages the integrity of its wells throughout the well life cycle such that it provides a safe and secure site for employees, contractors & visitors

Condition	Condition Description	Internal Process	Environmental Management Strategy
I4	Stimulation Activities Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in stimulation fluids in concentrations above the reporting limit.	The ADZ Energy Stimulation Management Procedure (ARM-HSS-DRL-PRC- 004) The ADZ Energy Stimulation Impact Monitoring Plan (ARM-SUR-HSEQ-GEN-PLN-012)	A Stimulation risk assessment will be completed in accordance with Schedule I prior to the implementation of any new stimulation activities. Stimulation modelling will be undertaken to assess fracture propagation and the extent of the target stimulation zone.
I5	Stimulation activities must not negatively affect water quality, other than that within the stimulation impact zone of the target gas producing formation.		
I6	Stimulation activities must not cause the connection of the target gas producing formation and another aquifer.		
I7	The internal and external mechanical integrity of the well system prior to and during stimulation must be ensured such that there is: a) no significant leakage in the casing, tubing, or packer; and b) there is no significant fluid movement into another aquifer through vertical channels adjacent to the well bore hole		
I8	Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target gas producing formation and another aquifer.		
I9	Stimulation Risk Assessment Prior to undertaking stimulation activities, a risk assessment must be developed to ensure that stimulation activities are managed to prevent environmental harm.		
I10	The stimulation risk assessment must be carried out for every well to be stimulated prior to stimulation being carried out at that well and address issues at a relevant geospatial scale such that changes to features and attributes are adequately described and must include, but not necessarily be limited to: a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice; b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority; c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target gas producing formation(s); d) naturally occurring geological faults; e) seismic history of the region (e.g. earth tremors, earthquakes); f) proximity of overlying and underlying aquifers;		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	g) description of the depths that aquifers with environmental values occur, both above and below the target gas producing formation; h) identification and proximity of landholder' active groundwater bores in the area where stimulation activities are to be carried out; i) the environmental values of groundwater in the area; j) an assessment of the appropriate limits of reporting for all water quality indicators relevant to stimulation monitoring in order to accurately assess the risks to environmental values of groundwater; k) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity; l) consideration of barriers or known direct connections between the target gas producing formation and the overlying and underlying aquifers; m) a description of the well mechanical integrity testing program; n) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc.); o) practices and procedures to ensure that the stimulation activities are designed to be contained within the target gas producing formation; p) groundwater transmissivity, flow rate, hydraulic conductivity and direction(s) of flow; q) a description of the chemical compounds used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation; r) a mass balance estimating the concentrations and absolute masses of chemical compounds that will be reacted, returned to the surface or left in the target gas producing formation subsequent to stimulation; s) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including: t) toxicological and ecotoxicological information of chemical compounds used; u) information on the persistence and bioaccumulation potential of the chemical compounds used; and		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	v) identification of the chemicals of potential concern in stimulation fluids derived from the risk assessment; w) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities; x) identification and an environmental hazard assessment of using radioactive tracer beads in stimulation activities; y) an environmental hazard assessment of leaving chemical compounds in stimulation fluids in the target gas producing formation for extended periods subsequent to stimulation; z) human health exposure pathways to operators and the regional population; - aa) risk characterisation of environmental impacts based on the environmental hazard assessment; - bb) potential impacts to landholder bores as a result of stimulation activities; - cc) an assessment of cumulative underground impacts, spatially and temporally of the stimulation activities to be carried out on the tenures covered by this environmental authority; and - dd) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne contaminants), noise and vibration.		
I11	A summary of each stimulation risk assessment must be submitted to the administering authority upon request.		
I12	Water Quality Baseline Monitoring Prior to undertaking any stimulation activity, a baseline bore assessment must be undertaken of the water quality of: a) all landholder's active groundwater bores (subject to access being permitted by the landholder) that are spatially located within a two (2) kilometre horizontal radius from the location of the stimulation initiation point within the target gas producing formation; and b) all landholders' active groundwater bores (subject to access being permitted by the landholder) in any aquifer that is within 200m above or below the target gas producing formation and is spatially located with a two (2) kilometre radius from the location of the stimulation initiation	The ADZ Energy Stimulation Impact Monitoring Plan (ARM-SUR-HSEQ-GEN-PLN-012)	Prior to all stimulation activities, active landholder groundwater bores within the specified distance will be identified and baseline monitoring program will be implemented. A stimulation impact monitoring program will also be developed prior to the carrying out of stimulation activities.

Condition	Condition Description	Internal Process	Environmental Management Strategy
	point; and c) any other bore that could potentially be adversely impacted by the stimulation activities in accordance with the findings of the risk assessment required by condition I9.		
I13	Prior to undertaking stimulation activities at a well, there must be sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include as a minimum the results of analyses for the parameters in Condition I14.		
I14	Baseline bore and well assessments must include relevant analytes and physico-chemical parameters to be monitored in order to establish baseline water quality and must include, but not necessarily be limited to: a) pH; b) electrical conductivity [$\mu\text{S/m}$]; c) turbidity [NTU]; d) total dissolved solids [mg/L]; e) temperature [$^{\circ}\text{C}$]; f) dissolved oxygen [mg/L]; g) dissolved gases (methane, chlorine, carbon dioxide, hydrogen sulfide) [mg/L]; h) alkalinity (bicarbonate, carbonate, hydroxide and total as CaCO_3) [mg/L]; i) sodium adsorption ratio (SAR); j) anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L]; k) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L]; l) dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, total chromium, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [$\mu\text{g/L}$]; m) total petroleum hydrocarbons [$\mu\text{g/L}$]; n) BTEX (as benzene, toluene, ethylbenzene, ortho-xylene, para- and meta-xylene, and total xylene) [$\mu\text{g/L}$]; o) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [$\mu\text{g/L}$]; p) sodium hypochlorite [mg/L]; q) sodium hydroxide [mg/L];		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	r) formaldehyde [mg/L]; s) ethanol [mg/L]; and t) gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L]		
I15	Stimulation Impact Monitoring Program A stimulation impact monitoring program must be developed prior to the carrying out of stimulation activities which must be able to detect adverse impacts to water quality from stimulation activities and must consider the findings of the risk assessment required by Condition I9 that relate to stimulation activities and must include, as a minimum, monitoring of: a) the stimulation fluids to be used in stimulation activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used; b) flow back waters from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water; c) flow back waters from stimulation activities at sufficient frequency and accuracy to demonstrate that 150% of the volume used in stimulation activities has been extracted from the stimulated well; and d) all bores in accordance with Condition I12.		
I16	The stimulation impact monitoring program must provide for monitoring of: a) analytes and physico-chemical parameters relevant to baseline bore and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in Condition I14; and b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of stimulation activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities		

Condition	Condition Description	Internal Process	Environmental Management Strategy
I17	The stimulation impact monitoring program must provide for monitoring of the bores in condition I15(d) at the following minimum frequency: a) monthly for the first six (6) months subsequent to stimulation activities being undertaken; then b) annually for the first five (5) years subsequent to stimulation being undertaken or until analytes and physico-chemical parameters listed in Condition I14, are not detected in concentrations above baseline bore monitoring data on two (2) consecutive monitoring occasions.		
I18	The results of the stimulation impact monitoring program must be made available to any potentially affected landholder upon request by that landholder		No requests have been received to date from landholders.
J1	Assessment of Consequence Category The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the “Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)”, at the following times: a) prior to the design and construction of the structure, if it is not an existing structure; or b) prior to any change in its purpose or the nature of its stored contents.		A consequence category assessment of the existing Kincora Ponds will be undertaken in accordance with the transitional arrangements specified in Condition J36. There are currently no new dams proposed for the Plan of Operations period, however, a consequence category assessment will be performed for any future dams. If the existing dams are determined to be regulated dams, a Dam Management Plan will be prepared and implemented to address the items in Schedule J. Currently there are no Regulated structures. A May 2022 GHD report classified all existing Kincora Ponds and Dams and ‘low consequence’.
J2	A consequence assessment report and certification must be prepared for each structure assessed under Condition J1 and the report may include a consequence assessment for more than one structure.		
J3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the “Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).”		
J4	Design and Construction of a Regulated Structure Conditions J5 to J9 inclusive do not apply to structures existing at 28 February 2020.		
J5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).		

Condition	Condition Description	Internal Process	Environmental Management Strategy
J6	Construction of a regulated structure is prohibited unless: a) the holder has submitted a consequence category assessment report and certification to the administering authority; and b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.		
J7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.		
J8	Regulated structures must: a) be designed and constructed in compliance with the “Manual for assessing consequence categories and hydraulic performance of structures ESR/2016/1933); b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i. floodwaters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.		
J9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure b) construction of the regulated structure is in accordance with the design plan.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
J10	Notification of Affected Persons All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure: a) for existing structures that are regulated structures, within 10 business days of this condition taking effect; b) prior to the operation of the new regulated structure; and c) if the emergency action plan is amended, within 5 business days of it being amended.		
J11	Operation of a Regulated Structure Operation of a regulated structure, except for an existing structure as at 28 February 2020, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition J5; b) a set of 'as constructed' drawings and specifications; c) certification of the 'as constructed drawings and specifications' in accordance with condition J9; d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and g) there is a current operational plan for the regulated structure.		
J12	For existing structures as at 28 February 2020 that are regulated structures: a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and b) there must be a current operational plan for the existing structures.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
J13	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.		
J14	Mandatory Reporting Level Conditions J15 to J18 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.		
J15	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.		
J16	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.		
J17	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.		
J18	The holder must record any changes to the MRL in the Register of Regulated Structures.		
J19	The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.		NA – Currently there are no Regulated structures. A May 2022 GHD report classified all existing Ponds and Dams and 'low consequence'
J20	Design Storage Allowance By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam or network of linked containment systems).		NA – Currently there are no Regulated structures. A May 2022 GHD report classified all existing Ponds and Dams and 'low consequence'
J21	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.		NA – Currently there are no Regulated structures. A May 2022 GHD report classified all existing Ponds and Dams and 'low consequence'

Condition	Condition Description	Internal Process	Environmental Management Strategy
J22	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.		NA – Currently there are no Regulated structures. A May 2022 GHD report classified all existing Ponds and Dams and 'low consequence'
J23	Annual Inspection Report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.		NA – Currently there are no Regulated structures. A May 2022 GHD report classified all existing Ponds and Dams and 'low consequence'. However routine visual inspections are conducted on all operational low consequence ponds/dams
J24	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.		
J25	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).		
J26	The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority: a) The recommendations section of the annual inspection report; and b) If applicable, any actions being taken in response to those recommendations; and c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.		
J27	Transfer Arrangements The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.		Should a transfer take place in the future, all dam design, consequence category assessments and other associated documentation will be provided to the new holder prior to the transfer.

Condition	Condition Description	Internal Process	Environmental Management Strategy
J28	Decommissioning and Rehabilitation Regulated structures must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with Condition J29; or b) be left in-situ for a use by the landholder provided that: i. it no longer contains contaminants that will migrate into the environment; and ii. it contains water of a quality that is demonstrated to be suitable for its intended use(s); and c) the holder of the environmental authority and the landholder agree in writing that the; i. dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and ii. landholder is responsible for the dam, on and from an agreed date.	The ADZ Energy Rehabilitation Plan (Kincora Gas Project) ARM-SUR-HSEQ-GEN-PRC-009	Neither decommissioning of regulated dams nor surrender of the environmental authority is planned for the Plan of Operations period.
J29	Before surrendering this environmental authority the regulated structure must be rehabilitated to achieve a safe, stable, non-polluting landform.		
J30	Register of Regulated Structures A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.	Refer to J1	A consequence category assessment of the existing Kincora Ponds will be undertaken in accordance with the transitional arrangements specified in Condition J36. There are currently no new dams proposed for the Plan of Operations period, however, a consequence category assessment will be performed for any future dams. If the existing dams are determined to be regulated dams, a register of regulated dams will be prepared in accordance with Schedule J.
J31	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.		
J32	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with Condition J11 and J12 has been achieved.		
J33	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.		
J34	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.		
J35	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	authority.		
J36	Transitional Arrangements All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.		A consequence category assessment of the existing Kincora Ponds will be undertaken by 28th August 2020, in accordance with the transitional arrangements specified in Condition J36.
J37	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in <i>Table 8 - Transitional hydraulic performance requirements</i>		If any existing dams are reclassified as regulated dams, ADZ Energy will develop a plan to undertake further actions within the timeframes specified in Table 8 (if required).
J38	Table 8 -Transitional hydraulic performance requirements for existing structures ceases to apply for a structure once any of the following events has occurred: a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or b) it has been decommissioned; or c) it has been certified as no longer being assessed as a regulated structure		
J39	Certification of the transitional assessment required by condition J36 and J37 (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.		
K1	Underground Gas Storage The only gas to be stored underground is natural gas and coal seam gas.	The ADZ Energy Newstead Operational Gas Injection Reports; • Sept 17 to Sept 18 • Sept 18 to Dec 19 • Dec 19 to Dec 20 • Jan 21 to Dec 21 • Jan 22 to Dec 22 • Jan 23 to Jan 24	A suitably qualified person will undertake an annual review of compliance with Schedule K and associated reporting under conditions K8 and K9. This report is submitted each year with the Annual Returns
K2	The authorised gas must only be injected at the location(s) and within the formation(s) and impact zones listed in <i>Table 9 - Details of Authorised Storage Formation</i> .		
K3	Gas injection must not result in: a) fracturing the target formation; or b) surface migration of the injected gas; or c) loss of containment from within the impact zones; or d) ingress to building and structures; or e) fugitive emissions		
K4	If the holder of this environmental authority becomes aware that environmental harm is caused or threatened to be caused, as a result of gas injection activities, the holder of this authority must immediately implement appropriate measures		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	to prevent or minimise the harm.		
K5	The maximum quantity of gas authorised to be stored underground under the environmental authority is 7.45 Bscf.		
K6	The maximum formation pressure permitted is 2260 psia.		
K7	Tracers must not be injected underground.		
K8	Underground Gas Storage Monitoring Program The holder of this environmental authority must develop and implement an Underground Gas Storage Monitoring Program prior to commencing gas injection.		
K9	The Underground Gas Storage Monitoring Program must include but not necessarily be limited to: a) based on a risk assessment to ensure the injection activities are managed to prevent environmental harm and meet the additional requirements within this environmental authority; b) establishment of baseline data including but not limited to: i. identification of the gas injection impact zone; ii. estimated volume and rates of gas to be injected; iii. development of a hydrogeological conceptualisation that includes: 1. characterization of aquifer geometry; 2. physiochemical and hydraulic properties (including groundwater levels / pressure) of the target formation as well as surrounding geological formations; 3. associated recharge and discharge processes that may influence movement and storage of the injected gas; c) validation of assumptions, predicted impacts and effectiveness of preventative measures (including details of any control or reference sites, methods for analysis and interpretation including a description of the statistical basis on which conclusions are drawn); d) operational monitoring to manage potential hazards including details on sampling and analysis methods (including frequency and locations) and quality assurance and control including but not limited to: i. continuously recording injection pressure, flow rate, cumulative volume of the gas and pressure of the target formation;		

Condition	Condition Description	Internal Process	Environmental Management Strategy
	ii. daily monitoring and keeping of records of the quantity of gas injected into the formation; iii. a temperature survey; iv. monitoring of gas water contact or saturation changes using the static gradient method; v. a casing integrity assessment technique such as: 1. cement integrity log; 2. Ultra Sonic Imaging Tool (USIT) log; 3. Sonic Volume Density log (VDL); or 4. An equivalent survey technique approved by the administering authority; vi. Profiling of the gas plume including rate of movement; vii. Weekly fixed gas monitors; viii. Bi-annual groundwater level monitoring of the target formation and other potentially affected aquifers; ix. Bi-annual monitoring of potentially affected landholder bores; x. Hydraulic gradient of the target formation within the Petroleum Lease (PL) 27; and xi. Verification to assess the performance of the injection activities and compliance.		
K10	Reporting Requirements for Operational Gas Injection An operational gas injection report which has been certified by a suitably qualified person must be submitted to the administering authority with each annual return until gas injection has ceased.		

Condition	Condition Description	Internal Process	Environmental Management Strategy
K11	The operational gas injection report must summarise the results of the Underground Gas Storage Monitoring Program and provide interpretation and analysis of the information including but not necessarily limited to: a) the results of the monitoring program as required by condition K9; b) monthly summaries of injection conditions; c) well head injections rates versus formation pressure; d) the effectiveness of aquitards (including the stability of the aquitard) and aquicludes of confining the injected gas within the target formation; e) a detailed interpretation of the logs and other tests conducted during drilling and construction of refurbishment of the well against their specific objectives; f) analysis of monitoring and operational data in terms of; i. validation of conceptual framework for injection; and ii. additional hazards that were not identified earlier; g) a revised risk analysis that identifies all potential hazards, likelihood of various risk elements and associated consequences; h) a re-evaluation of the gas injection impact zone; and i. location details of any wells closed and decommissioned (GDA94).		
K12	Operational Gas Injection Cessation Report A gas injection cessation report which has been certified by a suitably qualified person must be submitted to the administering authority with two (2) months of final completion of gas injection activities.	Cessation of the operations gas injection site is not planned during this PoO	
K13	The gas injection cessation report must include, but not necessarily be limited to: a) volumes of gas injected at each well; b) a risk assessment statement providing details on identified hazards including their inherent risk, summary of the results from the verification monitoring, preventative measures and the residual risk; and c) a monitoring report outlining the methods and results of verification monitoring undertaken to assess the performance of the operational injection activities and preventative measures for identified hazards.		

END OF PERMIT CONDITIONS

Attachment G: PoO Rehabilitation Plan



Rehabilitation Plan (Kincora Gas Project)

DOCUMENT REVIEW PROCESS	
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Abbreviations/ Definitions

<i>Word / Abbreviation</i>	<i>Meaning</i>
<i>ATP</i>	Authority to Prospect
<i>EA</i>	Environmental Authority
<i>DESI</i>	Department of Environmental, Science and Innovation
<i>EMP</i>	Environmental Management Plan
<i>EMR</i>	Environmental Management Register
<i>EP Act</i>	Environmental Protection Act 1994 (Queensland)
<i>EPBC Act</i>	Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)
<i>ESA(s)</i>	Category A, B and C Environmentally Sensitive Areas as mapped by EHP and defined in the Kincora Gas Project Authority
<i>EVNT</i>	A species listed as endangered, vulnerable or near threatened under the NC Act or threatened species under the EPBC Act
<i>GIS</i>	Geographical Information System
<i>GPS</i>	Global Positioning System
<i>HSEQMS</i>	Health Safety Environmental Management System
<i>IECA</i>	International Erosion Control Association
<i>MNES</i>	Matters of National Environmental Significance listed under the EPBC Act
<i>NC Act</i>	Nature Conservation Act 1992 (Queensland)
<i>NRM</i>	Natural Resource Management
<i>PL</i>	Petroleum Lease
<i>PoO</i>	Plan of Operations
<i>PPL</i>	Petroleum Pipeline Lease
<i>RE</i>	Regional Ecosystem
<i>RoW(s)</i>	Right of Way(s)
<i>SCL</i>	Strategic Cropping Land
<i>TEC</i>	Threatened Ecological Community listed under the EPBC Act
<i>VM Act</i>	Vegetation Management Act (1999) (Queensland)

1. Introduction

1.1. Purpose

Armour Energy (Surat Basin) Pty Limited ("**AESB**") an ADZ Energy Pty Ltd ("**ADZ Energy**") subsidiary, is the operator of several Petroleum Leases' ("PL"), Petroleum Pipelines and Authority to Prospect's ("ATP") in Queensland's Surat Basin. In accordance with the requirements of section 224 of the Environmental Protection Act 1994 ("EP Act"), AESB is the permit holder of Environmental Authority ("EA") EPPG00694213 (refer to figure 1). This plan has been prepared to describe how the land will be rehabilitated after each relevant activity ceases.

Within the Surat Basin, authorised petroleum activities to be carried out include the exploration, development, operation, maintenance, decommissioning and rehabilitation of:

- Seismic activities
- Production, exploration, and appraisal wells
- Construction of gathering network
- Oil storage and gas processing infrastructure; and
- Incidental activities

1.2. Scope

This document identifies rehabilitation methods that may be implemented to successfully rehabilitate land to the pre-disturbance land use. The plan also identifies rehabilitation monitoring, indicators, and acceptance criteria to be met in returning land to a pre-disturbance land use.

1.3. Environmental Authority Conditions

ADZ Energy is the holder of EPPG00694213 which all contain conditions for rehabilitation.

This plan has been developed to achieve compliance with rehabilitation condition in the EAs. Table 1 identifies the conditions relating to rehabilitation that are relevant to the plan. For the purpose of the plan and in accordance with the EA, rehabilitation means:

"The process of reshaping and revegetating land to restore it to a stable landform and in accordance with acceptance criteria and, where relevant, includes remediation of

contaminated land. For the purposes of pipeline rehabilitation, rehabilitation includes reinstatement, revegetation and restoration.”

Table 1 EA Conditions for Rehabilitation

Environmental Authority Condition number	Requirement
E2 – Topsoil Management	Topsoil must be managed in a manner that preserves its biological and chemical properties.
E3 – Land Management	Land that has been significantly disturbed by the petroleum activities must be managed to ensure that mass movement, gully erosion, rill erosion, sheet erosion and tunnel erosion do not occur on that land.
E7 – Pipeline Reinstatement and Revegetation	Pipeline trenches must be backfilled, and topsoils reinstated within three months after pipe laying.
E8 –	Reinstatement and revegetation of the pipeline right of way must commence within 6 months after cessation of petroleum activities for the purpose of pipeline construction.
E9 -	Backfilled, reinstated and revegetated pipeline trenches and right of ways must be: a) a stable landform; b) re-profiled to a level consistent with surrounding soils; c) re-profiled to original contours and established drainage lines; and d) vegetated with groundcover which is not a declared pest species, and which is established and growing.
H1 – Rehabilitation Planning	A Rehabilitation Plan must be developed by a suitably qualified person and must include the: a) rehabilitation goals; and b) procedures to be undertaken for rehabilitation that will: i. achieve the requirements of Conditions H2 to H5, inclusive; and ii. provide for appropriate monitoring and maintenance
H2 – Transitional Rehabilitation	Significantly disturbed areas that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria: a) contaminated land resulting from petroleum activities is remediated and rehabilitated b) the areas are: i. non-polluting;

	ii. a stable landform; iii. re-profiled to contours consistent with the surrounding landform; c) surface drainage lines are re-established; d) top soil is reinstated; and e) either: i. groundcover, that is not a declared pest species, is growing; or ii. an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.
H3 - Final Rehabilitation Acceptance Criteria – Non-ESAs	All significantly disturbed areas caused by petroleum activities which are not being or intended to be utilised by the landholder or overlapping tenure holder, must be rehabilitated to meet the following final acceptance criteria measured either against the highest ecological value adjacent land use or the pre-disturbed land use: a) greater than or equal to 70% of native ground cover species richness; b) greater than or equal to the total per cent of ground cover; c) less than or equal to the per cent species richness of declared plant pest species; and d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then at least one regional ecosystem(s) from the same broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or pre-disturbed land, must be present.
H4 – Final Accepted Criteria – ESAs	Where significant disturbance to land has occurred in an environmentally sensitive area, the following final rehabilitation criteria as measured against the pre-disturbance biodiversity values assessment (required by conditions F1 and F2) must be met: a) greater than or equal to 70% of native ground cover species richness; b) greater than or equal to the total per cent ground cover; c) less than or equal to the per cent species richness of declared plant pest species; d) greater than or equal to 50% of organic litter cover; e) greater than or equal to 50% of total density of coarse woody material; and f) all predominant species in the ecologically dominant layer, that define the pre-disturbance regional ecosystem(s) are present.

H5 – remaining Dams	Where there is a dam (including a low consequence dam) that is being or intended to be utilised by the landholder or overlapping tenure holder, the dam must be decommissioned to no longer accept inflow from the petroleum activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.
J28 – Decommissioning and Rehabilitation	Regulated structures must not be abandoned but be either: - decommissioned and rehabilitated to achieve compliance with Condition J29; or - be left in-situ for a use by the landholder provided that: - it no longer contains contaminants that will migrate into the environment; and - it contains water of a quality that is demonstrated to be suitable for its intended use(s); and - the holder of the environmental authority and the landholder agree in writing that the; - dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and - landholder is responsible for the dam, on and from an agreed date.
J29	Before surrendering this environmental authority, the regulated structure must be rehabilitated to achieve a safe, stable, non-polluting landform.

1.4. Relevant Standards and Guidelines

The following standards and guidelines have been used to develop this plan and should be considered accordingly for periodic revision and implementation purposes:

- Final rehabilitation report for resource activities – Department of Environment, Science and Innovation: Version 4.03, 21 Feb 2024
- Code of Practice for the construction and abandonment of petroleum wells and associated bores in Queensland – Department of Natural Resources, Mines and Energy (Queensland): Version 2, 16 December 2019
- Indicators of Ecosystem Rehabilitation Success – CSRIO
- Transferring petroleum infrastructure to landholders – Department of Environment, Science and Innovation: Version 2.01, 21 Feb 2024
- Best Practice Erosion and Sediment Control. International Erosion Control Association. 2008
- AS(/NZS) 2885 is the Australian Standard for Pipelines - Gas & Liquid Petroleum

- Code of Environmental Practice, Onshore Pipelines - Australian Petroleum Production and Exploration Association: Version 5, 2022
- Code of Environmental Practice - Australian Petroleum Production and Exploration Association: Revision 5, April 2022

1.5. Existing Land Uses

The Project area is predominantly cleared landscape developed for cattle grazing and the cultivation of cereal and fodder crops. To a degree, land use in the area has shaped the existing environment. Much of the region is established cleared land to support agricultural industries including cattle grazing and limited cereal and fodder cropping.

The area also supports an established petroleum and exploration and production industry (particularly conventional gas and oil wells) with a range of associated infrastructure (including gas and crude oil wells, transmission pipelines, oil storage and compressor stations).

2. Rehabilitation Objectives

2.1. Rehabilitation Goals

The overall goal of rehabilitating disturbed areas is to achieve the pre-disturbance land use unless otherwise agreed with the landholder or other overlapping tenure holder and approved by the State government administering authority.

It must be noted that all significant disturbances are to be rehabilitated in a way that will meet the final acceptance criteria when compared to the adjacent land use or pre-disturbance land use unless there is an alternative intended land use to be utilised by the landholder or an overlapping tenure holder.

Table 2 Final Acceptance for Non-ESA & ESA

Final Rehabilitation Acceptance Criteria – Non-ESA	Final Acceptance Criteria – ESAs
a) Greater than or equal to 70% of native ground cover species richness. b) Greater than or equal to the total percent of ground cover. c) Less than or equal to the percent species richness of declared plant pest species; and d) Where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then at least one regional ecosystem(s) from the same broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or pre-disturbed land, must be present.	a) Greater than or equal to 70% of native ground cover species richness. b) Greater than or equal to the total percent ground cover. c) Less than or equal to the percent species richness of declared plant pest species. d) Greater than or equal to 50% of organic litter cover. e) Greater than or equal to 50% of total density of coarse woody material; and f) All predominant species in the ecologically dominant layer that define the pre-disturbance regional ecosystem are present.

2.2. Reinstatement

Reinstatement refers to restoration and stabilisation of land following project disturbance activities to establish a stable landform suitable for the operational phase of the project. Reinstatement will also occur where ADZ Energy identifies significantly disturbed areas that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 months.

3. Rehabilitation Planning

3.1. Reinstatement Planning

A site-specific reinstatement plan will be developed by a suitably qualified person addressing site specific measures to be implemented as part of the construction works to establish a stable area for the operational land use and support achieving the final rehabilitation objectives.

The site-specific reinstatement plan must meet the following acceptance criteria:

- a) Contaminated land resulting from petroleum activities is remediated and rehabilitated.

- b) The areas are:
 - i. Non-polluting;
 - ii. A stable landform;
 - iii. Re-profiled to contours consistent with the surrounding landform;
 - c) Surface drainage lines are re-established;
 - d) Topsoil is reinstated; and
- Either
- i. Groundcover, that is not a declared pest species, is growing; or
 - ii. An alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.

3.2. Final Rehabilitation Planning

A site-specific decommissioning and rehabilitation plan will be developed by a suitably qualified person addressing the site-specific measures to be implemented as a part of the decommissioning and rehabilitation works to maintain/establish the desired operational land use. Key considerations include:

- Exploring opportunities for reuse or retention of infrastructure for a beneficial use
- Removing surface and underground infrastructure that may impede final rehabilitation.
- Decontaminating and rehabilitating surroundings, and as required from disturbance; and
- Stabilise the landform and revegetate with consideration to the rehabilitation objective (e.g., pasture, cropping or native vegetation establishment).

4. Rehabilitation Methods

4.1. Vegetation Clearing and Mulching

During vegetation clearing, measures will be undertaken to harvest timber resources and minimise loss of habitat places. Consideration will also be given to mulching cleared vegetation which will be used during reinstatement works. The following requirements must be adhered to for the clearing, mulching, and stockpiling of vegetation:

- Prior to commencing clearing in timbered areas, consult with the landholder to agree any timber harvesting requirements such as setting aside felled logs for landowner use
- Prior to and during clearing, mature trees and trees with habitat values (e.g. hollows or potential nesting sites) will be identified by a suitably qualified person and marked in the field and where possible clearing will be avoided
- Habitat features including logs, hollow bearing trees and rocks, will be identified by a suitably qualified person and retained for habitat recreation through relocation adjacent to the disturbed area
- Woody vegetation (other than habitat features and useable timber requested to be reserved by the landowner) may be mulched depending on quantity available
- Mulch and cleared vegetation must be stockpiled to facilitate spreading or salvaging within the disturbance area in a location that facilitates later use in rehabilitation. Gaps will be left in stockpiles to avoid impeding vehicle, stock or wildlife movements
- Mulch stockpiles will not be wider than 10m and higher than 2m, where practical and managed to reduce fire fuel loads at the base
- Mulch stockpiles are to be stored separately to subsoils and kept free of waste and biosecurity restricted matters
- Mulch should be stockpiled separately from topsoil where practicable and necessary to preserve topsoil, however some mixing of mulch with topsoil is acceptable
- mulch stockpiles must be at least 10m from the top bank of the low flow channel of drainage features and not placed where they could obstruct flow or be washed away in a flow event
- for non-linear and longer-term mulch storages an appropriate fire break will be established; and
- mulch stockpile locations retained post rehabilitation are to be recorded via GPS point.

4.2. Soil Management

Effective management of soil is essential to successful reinstatement and rehabilitation. Management of topsoil and subsoil will be undertaken in accordance with the ADZ Energy Surat Operations Environmental Management Plan (ADZ Energy_SUR_HSEQ_GEN_PLN_004)

4.3. Landform Re-establishment

The following actions will be implemented in backfilling of trenches and reinstatement of excavations, although site specific requirements, will be implemented where necessary in precedence to those outlined below:

- pipeline trenches, bell holes and other open excavations will be backfilled as soon as practicable after pipe laying but no longer than three months after completion.
- Reinstatement and revegetation of pipeline right of ways must commence within 6 months after completion of construction
- backfilled excavations should be suitably compacted to prevent subsidence. Notwithstanding this, compaction must not impede rehabilitation and establishment of vegetation
- excavated subsoils will be used for backfilling
- backfill materials (i.e. padding sand and subsoil) will not be contaminated with general rubbish or any foreign material
- subsoils will not be used as a surface capping layer
- certified clean, weed and disease free backfill material may be used where required. Clearance certificates and analysis reports must be kept on record, and;
- topsoil will not be used for backfill.

4.4. Reinstating Landform

Landform reinstatement involves surface contouring to create a stable land formation consistent with the surrounding land. This ensures water flow over the surface is in cohesion with the surrounding landscape and minimises the risk of potential gully erosion. General mitigation measures will be implemented to minimise potential impacts. These measures are:

- in areas of site leveling works, proposed formation levels will be set to reduce the need for significant cut and fill areas
- in areas where access tracks have been constructed the landform will be re-profiled to establish a landform consistent with the surrounding landscape and ensure it is in a stable condition
- restore all disturbed areas to a stable landform consistent with surrounding areas

- complete surface contouring prior to replacement of topsoil
- re-establish and stabilise surface drainage lines to prevent ongoing erosion
- restore all drainage lines to pre-disturbance bed level, channel width and longitudinal gradient, and;
- restore drainage line banks to stable profile which is as close to pre-disturbance conditions as practicable.

4.5. Compaction Relief

Ripping assists with binding of the soil layers, increases retention time of water on the slope, aids water infiltration into the soil increasing the opportunity of seed germination success and reduces the volume and velocity of runoff generated from the slope. This will be undertaken along contours where practicable, particularly on heavily trafficked areas such as temporary access tracks, laydowns, working sides of RoWs, camps and hardstands and other areas compacted by construction activities. Some points to inform ripping as a reinstatement practice are:

- compaction relief of subsoil will occur in all disturbed areas where subsoil has been compacted and prior to topsoil replacement and where the area will not undergo compaction from ongoing operational activity. Where compaction of soil may occur due to ongoing operational use (e.g. tracks), compaction relief should occur following decommissioning (not construction reinstatement)
- compaction relief will utilise appropriate equipment designed for soil compaction alleviation ensuring soil inversion and exposure of subsoils is avoided, compaction is effectively relieved to the target depth, while avoiding forming large clods and smearing of soils
- ripping depth must be determined by a suitably qualified person and take in consideration the following aspects:
 - depth and magnitude of compaction effects through assessment activities undertaken on the site
 - depth of underground assets and restriction limits that may apply for protection of these assets
- Establish target compaction relief outcomes with regard to analogue or adjacent sites undisturbed by project activities
- ripping of the soil must take place when the soil is at friable consistency, check soil moisture prior to undertaking ripping. Identify the optimum window for conducting

compaction relief. Refer to long-term climatic data and/or real time soil moisture measurements to facilitate decision-making

- where practicable rip along contours. On areas running down slope lift tines every 50m for 5m
- ripping will be excluded from under the drip lines of retained vegetation to avoid impacts on the root systems of adjacent vegetation, and
- Establish access controls to prevent re-compaction of treated areas.

4.6. Fertiliser

Fertilisers will be applied as required based on site soil assessment and based on land use and vegetation type. Fertiliser requirements will be determined by suitably qualified person, taking in consideration, soil characteristics, land use and vegetation required to re-establish. Fertiliser will be used on areas of agricultural land and operational areas; however, no fertiliser is required to be used in areas where native vegetation regeneration is the rehabilitation outcome. Fertiliser inputs may include the following:

- Fertilisers may be applied in reinstatement of pasture and grassed areas to stimulate revegetation.
- fertiliser application in agricultural areas should consider landowner requirements.
- fertilisers will not be used for native vegetation establishment, as most native plants have adapted to low natural nutrient soil conditions.
- fertilisers with a supply of sulphur (S) should not be used where soil conditions indicate a pH of <5, as this will contribute to further lowering the pH, and
- fertiliser types and application rates are to be informed from soil analysis information and applied as instructed on packaging or advice guide.

4.7. Vegetation Respreading

Large felled native vegetation, mulch (if used) and other fauna habitat elements (large surface rocks and felled tree trunks) will be reserved where practical and placed adjacent to the edge of the disturbance area with consideration to site characteristics, site maintenance requirements and personnel safety. Stockpiled vegetation, mulch and other fauna habitat elements will be spread or stored after any seeding task as follows:

- mulched material will be evenly spread over the disturbed area to assist in the distribution of seed stock and provide erosion protection.

- stockpiled vegetation may be stored or placed in a way on disturbance that does not impede operational maintenance or access considering site characteristics i.e., along the disturbance boundary linearly
- mulch will be spread once seeding and/or planting has been completed
- mulch layer thickness should generally not exceed 50mm and 70% coverage, unless authorised by an Environmental Advisor
- all reserved habitat features, vegetation and mulch will be used in any final rehabilitation task as to the durability over time of the natural product
- to prevent weed and soil pathogen spread and assist with appropriate revegetation and soil micro-organism recovery, topsoil, mulch and habitat elements will be sourced from salvage specific to that site
- if mulch has to be brought in from another source, approval must be obtained from the Environment Advisor and be accompanied by a biosecurity hygiene declaration from the supplier
- felled vegetation will not be burnt unless directed by the regulatory authority, and
- habitat features including logs, hollow bearing trees and rocks, will be identified prior to or during clearing by a suitably qualified person and retained for habitat recreation through relocation adjacent to the disturbed area.

4.8. Erosion and Sediment Control

Erosion and sediment control requirements relevant to reinstatement and rehabilitation will be carried out in accordance with the ADZ Energy Erosion Control Plan

4.9. Revegetation & Rehabilitation Types

Revegetation of a disturbance area involves the use of natural regeneration, direct seeding, propagates or tube stock to support an area achieving the pre-clearance native vegetation species richness, regional ecosystem species richness, and cropping or pasture system. The following techniques will be discussed as methods for vegetating disturbance areas. Not all methods will be utilised at a given disturbance as each outcome to the disturbance type, infrastructure operations, maintenance inputs and final or existing land utilisation outcome remain different.

4.10. Reinstatement – Pasture and Ground Cover Establishment

Areas disturbed may be sown with appropriate pasture or native species seed mix sourced from reputable local seed suppliers and as agreed with the landholder to establish a stable vegetative cover. From time to time seeding for pasture re-establishment will be omitted if abundant seed is available in the topsoil seedbank and disturbance window is limited for topsoil storage. The use of a sterile cover crop seed will be added to the seed mix used in reinstatement, unless otherwise requested by the landholder. Seeding will generally occur directly following topsoil replacement and reinstatement to facilitate progressive rehabilitation. This task will be undertaken irrespective of whether the site is to undergo reinstatement or final rehabilitation.

Seeding methods which may be employed can include:

- a direct seeding method can be undertaken using a spreader attached to the rear of a tractor which delivers seed onto the soil and suitably buries seed
- a drill seeding method that applies and presses the seed to a specified depth (harrowing will not be required for drill seeding)
- hand distribution where seed is broadcast. This method is mostly employed where steep slopes are present and impractical for machinery application methods, and
- hydro-seeding and hydro-mulching or equivalent product may be used on steep slopes to encourage more rapid revegetation and, therefore, stabilisation of the rehabilitated area.
- Seeding method application will be determined by site specific constraints.

Seeding is to take place after surface preparations, but before final harrowing. For direct seeding and hand distribution harrowing is undertaken after seeding, the seed is covered with a small layer of soil to assist in the germination process and protect from predation such as avian and insect seed forages. Rehabilitation crews should assess each site on a case-by-case basis to ensure the most practical and cost effective (to desired outcome) application method is applied to a disturbance area, according to the topography and level of risk involved if machinery is utilised.

4.11. Direct Seeding of Native Species for Final Rehabilitation

The selection of species to be used in the rehabilitation process where native vegetation is the final land use objective may be guided by the preclearance vegetation

assessment, adjoining vegetation assessment or determined from analogue site surveys. Species selection may be guided by soil conditions, micro-climate and aspect of the new landform.

4.12. Natural Regeneration

Trees and shrubs will be allowed to regenerate naturally on reinstated areas not required to be kept tree free for the purpose of operation and maintenance, where establishment of native vegetation is the final land use objective. This practice will contribute to reducing barriers to fauna movement, especially to ground-dwelling fauna. Natural regeneration is the preferred method of revegetation in areas where native vegetation was cleared. To assist natural revegetation the following will be undertaken:

- Where topsoil does not require removal, root stock will be left in the ground where practicable to facilitate rapid regrowth.
- preserve and utilise the existing seedbank in the topsoil to regenerate native vegetation.
- use mulch to establish temporary ground cover for erosion protection of disturbed areas.
- within 100m of downslope drainage lines and where the availability of mulch is not sufficient to provide 70% groundcover at 50mm thickness, natural regeneration must be supplemented with direct seeding of a sterile cover crop species during reinstatement.
- conduct rehabilitation monitoring to evaluate revegetation success and undertake direct seeding with native species if natural regeneration is unsuccessful when attempting EA final acceptance criteria.

4.13. Cropping Areas

In areas of prior or intended (by the landholder) cultivation; seeding is not a required task. If a landholder has an intended land use of cultivation, where infrastructure has been installed then the approach to sow a cover crop or not to sow the disturbance area must be confirmed with the landholder.

4.14. Tube stock planting

There will be certain situations where tube stock planting will be required as a primary response or a secondary response to establish the required vegetation cover and diversity, such as where species unsuited to direct seeding must be established, including communities such as Brigalow and some SEVT species. Tube stock planting may also be required to return plant species of conservation significance including MNES and State listed ENVT species, and these may only be practically returned via direct planting. Requirements for tube stock planting are as follows:

- species to be selected for planting will be sourced from local suppliers wherever possible to meet volume requirements, necessary planning and preparations will be required to ensure the desired species and volume can be supplied
- tube stock will be planted in the early wet season (December – February) to take advantage of rainfall as no manual watering program will be conducted beyond the initial planting. Some ecosystems, such as SEVT revegetation will require supplementary watering during establishment as the diverse species are mostly very slow growing
- spacing will be determined according to the species, but will typically be 2m apart for most tree species
- tube stock will be watered immediately following planting
- moisture retention products (water crystals) at the time of planting may be utilised to support the establishment of plants
- where available mulch will be placed around tube stock plants, but should not touch the stems, and
- fencing will be required following planting to prevent native and livestock browsing damage.

Engagement with tube stock suppliers will identify the requirement to deliver local provenance tube stock and supply will be guided by the list of key species developed for the relevant Regional Ecosystems, in consultation with land holders, in regard to adjoining vegetation community species and based on BioCondition reference data from analogue site survey (surveys outlined in Section 8) in certain situations, mentioned above, where tube stock planting will be required. Identified quantities of tube stock will be sourced from reputable local and specialist nursery stock suppliers. The collection, storage, and sourcing of seed for tube stock propagation will be via the

engagement of reputable local seed suppliers and specialist seed suppliers by contracted local and specialist nursery stock suppliers.

4.15. Seed Collection

To meet the requirements for direct seeding for diverse native species for final rehabilitation, seed will be sourced off native species, with preference for seed of species adapted to local conditions. It is anticipated seed collection will be affected by:

- climatic conditions such as rainfall and prolonged periods of drought affecting flowering and seed set
- natural predation of avian and insect fauna
- distribution of diverse seed types and sizes
- quantity of seed set and management of harvesting quantities within acceptable limits for natural reproduction of native species, and
- supplier quality, quantity, accessibility and volume of seed and types available for harvesting.

Seed purchasing will be guided by several information sources such as the list of key species developed for the relevant Regional Ecosystems and for pasture species, in consultation with land holders, adjoining vegetation community species and based on BioCondition reference data. Seed harvesting were identified as necessary will be conducted on request to suitably skilled contracted services and as required to the availability of target species to accommodate the commercial quantities of seed necessary as advised by lists of key species developed for the relevant Regional Ecosystems, and for pasture species, in consultation with land holders and based on BioCondition reference data. Where engaged reputable local seed suppliers and specialist seed suppliers will be suitably permitted to undertake collection and will be required to collect commercial quantities of seed to meet this demand. Seed the species assemblage will be required to be tested by the supplier and evidence of viability provided before sowing to ensure there will be adequate germination rates.

4.16. Dams

The Kincora Terminal is the only operational evaporation pond. Across the Kincora Gas Project there are number of non-operational dams which do not currently accept in flows from petroleum activities. These dams are currently managed through a care and maintenance program.

Like all assets, ADZ Energy is currently evaluating their future operational use. Reinstatement of dams will occur in accordance with the provisions as detailed in Section 3 of this plan.

Where possible ADZ Energy proposes to enter into a land and compensation agreements with the Landholder that has a preferred use for the dam such that rehabilitation standards for revegetation by the holder of the environmental authority are not required. Before a dam is utilised by a landholder ADZ Energy will ensure the following;

- The dam must be decommissioned to no longer accept inflow from the petroleum activities; and
- Contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.

4.17. Soils

Contaminated soils will be assessed following the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites. Where remediation is required, contaminated soils will undertake further assessment and remediated to site specific needs following the preferred order or options for site clean-up and management of a particular site:

- on-site treatment of the soil so that the contaminant is destroyed, or the associated hazard is reduced to an acceptable level.
- off-site treatment of excavated soil so that the contaminant is destroyed, or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site.

Purpose built soil remediation areas may be established for the remediation of contaminated soil from various locations. Following the removal of contaminated soils

visual inspections and contamination testing will be undertaken to confirm that all contaminated soil has been removed.

Subject to assessment, soil remediation strategies may include.

- excavating contaminated soil and burying it at one location on site (this reduces the area containing contaminated soil)
- installing horizontal, vertical, or reactive barriers
- constructing an engineered landfill cell on site (for situations with shallow groundwater, permeable soils, leachable contaminants, or very high results)
- solidifying (locking contaminants in solidified matrix) or stabilising (converting contaminants to a less mobile and/or less toxic form, typically by chemical reaction) when contaminants are highly leachable, then incorporating with one of the above options
- land farming volatile contaminants and reusing soil on-site
- land farming volatile contaminants at an offsite location then returning the soil to site.
- on-site or off-site treatment
- in-situ biological (e.g., air stripping, sparging or venting) or chemical treatments.

Each soil remediation requirement is site specific, and an appropriate solution or combination will be utilized in accordance with site specific constraints and will be developed by a suitably qualified person.

5. Monitoring

5.1. Survey and Monitoring Prior to Construction

A pre-clearance ecological assessment will be undertaken prior to undertaking petroleum activities that involve significant disturbance to land to meet conditions under the EA. The survey will be undertaken to confirm biodiversity values. This assessment will be undertaken by a suitably qualified person through field validation surveys.

If the assessment indicates that a Regional Ecosystem mapped as Endangered or Of Concern by the Queensland Herbarium is of a different conservation value classification, petroleum activities may proceed in accordance with the conditions of the relevant environmental authority based on the confirmed on-the-ground conservation value. During the infrastructure planning phase, targeted threatened species surveys will be undertaken to confirm the absence or presence of threatened species and MNES in areas proposed to be disturbed as outlined in EPPG00694213.

5.2. Analogue Site Surveys

Information on the vegetation structure and species composition, including abundance, will be collected at identified analogue (reference) sites as an information source to compare the effectiveness of rehabilitation efforts as necessary. Reference sites include pre-existing disturbances where this represents site conditions where ADZ Energy will undertake activities.

Reference sites will be selected to be representative of each area, including ESA & Non-ESA that are to be disturbed, with the following information recorded.

- the percentage foliage cover of tree and shrub species
- height of each vegetation stratum
- flora species richness and diversity, and
- fauna habitat features litter cover, fallen woody material (coarse wood debris) and the number of hollow logs.

5.3. Monitoring on the Completion of Reinstatement

A sign-off by a suitably qualified person of the disturbance area is required on completion of development scope of work to ensure reinstatement or rehabilitation has been completed to the required standard.

5.4. Monitoring

Monitoring will be required at various intervals for a range of parameters to ensure that reinstatement and operating infrastructure success criteria are progressing towards achievement of final acceptance criteria.

Assessment of remnant vegetation establishment, due to ongoing maintenance of infrastructure footprints will not occur until the infrastructure is decommissioned and a final rehabilitation objective can occur uninterrupted by petroleum activities.

Land holders sign off is necessary for rehabilitated infrastructure footprints to determine the maintenance requirements for land management are no greater than for surrounding areas and obtain approval that land can be used for its pre-disturbance land use. Where relevant, monitoring will involve comparison with data collected during pre-clearing surveys, analogue site survey data and monitoring of areas of conservation significance or assessment of adjoining land uses or ecosystems in comparison to the disturbance location (by Project and/or Operations).

6. References

- Environmental Authority EPPG00694213
- Surat Operations Environmental Management Plan (ADZ Energy_SUR_HSEQ_GEN_PLN_004)
- Erosion & Sediment Control Plan (ARM-SUR-HSEQ-GEN-PLN-005)

Activity	Location	Area (ha)	Post-operation land use	Timing (When)	Rehabilitation methodology
Pipelines	PL1065	0.521	Cropping	Completion of rehabilitation site works proposed for Q3/4 2025	For pipelines, an abandonment risk assessment and abandonment plan will be developed in accordance with AS 2885.3, APGA Code of Environmental Practice: Onshore Pipelines (2009). This plan will determine specific abandonment requirements, including removal, slurry filling, or in-place abandonment. Activities include: • Purging and cleaning of the pipeline as per relevant standards. • Removal of any above-grade pipework and associated facilities. • Regrading and re-contouring the land surface and drainage lines. • Soil stabilisation using gypsum, polymers, mulch, or sterile crops. • Consultation with landholders for revegetation preferences. • Periodic monitoring until final acceptance criteria are met.
Oil storage facilities	PL 1065	0.521	Cropping	Completion of rehabilitation site works proposed for Q3/4 2025	Rehabilitation of the oil storage facility will include: • Purging, cleaning and removal of all surfaces, infrastructure, including, tanks, pipework, fencing, concrete, buildings, electrical, etc. • Removal of imported gravel, rock, sand, or other materials not compatible with the EA rehabilitation criteria. • Regrading and re-contouring of the land surface and drainage lines consistent with the surrounding landforms. • Reinstatement of topsoils (from on-site stockpiles). • Stabilisation of soils, as required, through application of one or more of the following (depending on location-specific requirements): gypsum, biodegradable soil stabilising agent (polymer), mulch or sterile cover crop. • Revegetation of the area consistent with surrounding areas. Cropping areas will be re-seeded or left un-seeded in accordance with landholder requirements.

Activity	Location	Area (ha)	Post-operation land use	Timing (When)	Rehabilitation methodology
					Periodic monitoring and maintenance (as required) until the final acceptance criteria in the EA are demonstrated to be met
Water storage infrastructure	PL 1065	0.63	Cropping	Q1 and Q2 2025	Rehabilitation of water storage infrastructure will include: - Desktop review of historical records for any contamination. - Sampling and analysis to determine remediation or disposal requirements. - Review of groundwater monitoring records for potential contamination. - Removal of surface infrastructure (e.g., pumps, fencing, concrete). - Removal and disposal of water/sediment from dams (if contaminated). - Regrading and re-contouring of land surfaces and drainage lines. - Soil reinstatement from stockpiles. - Coordination with landholders to meet post-rehabilitation use (cropping).