



16 July 2024

Environmental Impact Classification – Pursuant to Section 98 of the *Petroleum and Geothermal Energy Act 2000* – Riverland Pipeline (PL 6) and Berri to Mildura Pipeline (PL 11) Statement of Environmental Objectives, APA Group, February 2024.

In accordance with the transitional provisions under the *Energy Resources Act 2000* (the ER Act) and *Energy Resources Regulations 2013* (the ER Regulations), a statement of environmental objectives (SEO) that was developed prior to the commencement of the ER Act need only comply with the requirements of the previous Act; the *Petroleum and Geothermal Energy Act 2000*.

Pursuant to Section 98 of the *Petroleum and Geothermal Energy Act 2000* (the Act) the Minister must classify the regulated activities covered by a prepared Environmental Impact Report (EIR) as either of low, medium or high environmental impact.

The classification must be made on the basis of:

- The prepared EIR;
- Criteria established for classifying the level of environmental impact of regulated activities, a copy of which is found on the Department for Energy and Mining (DEM) web page:
<https://www.energymining.sa.gov.au/industry/energy-resources/regulation/environmental-register>; and
- Comment received from relevant Government departments in accordance with established administrative arrangements between these departments and DEM.

This document summarises the classification made by DEM on the *Riverland Pipeline (PL 6) and Berri to Mildura Pipeline (PL 11) Statement of Environmental Objectives, APA Group, February 2024*. This classification is based on information provided in the EIR prepared by APA Group.

ACTIVITY CLASSIFICATION SUMMARY

1. From an analysis of the potential environmental significance of the events and potential impacts associated with the proposed activities against the classification criteria referred to above (assessment provided as Attachment 1), these regulated activities have been classified as **low impact**.
2. Of 44 potential environmental events assessed, 44 were deemed to be of low potential environmental significance. This is due to the fact that appropriate management measures will be implemented to avoid or mitigate any potential environmental consequences.

CONSULTATION

1. For a low impact classification, DEM consults with the Department for Environment and Water (DEW) and the Environment Protection Authority (EPA) on the impact classification

Energy Regulation

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level in accordance with relevant administrative arrangement's dated 11 November 2005 and 8 November 2022 respectively.

2. Concurrence received from DEW and the EPA on 20 September and 3 October 2023, respectively, agreed with the classification of **low impact**.
3. In accordance with Section 101 of the Act, activities classified as low impact require DEM to undertake consultation with relevant government agencies. This consultation period was for at least 20 business days. Consultation was initiated on 5 October 2023 and closed on 21 November 2023.
4. Comments received from this consultation are tabled in Appendix C of the EIR, whereby all reasonable comments within scope need to be adequately addressed. DEM are satisfied that all comments raised during consultation have been adequately addressed.

The Environmental Register can be accessed via the webpage at - <https://www.energymining.sa.gov.au/industry/energy-resources/regulation/environmental-register#SEO>

Pursuant to delegated powers, I classify this regulated activity as **low impact**.



Benjamin Zammit
Executive Director
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Delegate of the Minister for Energy and Mining

PROJECT: PIPELINE LICENCE 6&11- Riverland Gas and Berri to Mildura Gas																		
ACTIVITY: OPERATIONS AND MAINTENANCE																		
Date: August 2023		ABBREVIATIONS: H = High certain																
REF	TYPE OF IMPACT	EVENTS	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						COMMENTS	ENVIRONMENTAL SIGNIFICANCE	
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS			SIGNIFICANCE
The Riverland pipeline comprises of the Angaston to Berri natural gas lateral pipeline (167.0km) and the Murray Bridge natural gas lateral pipeline from Sedan Junction to Murray Bridge (64.1km). The Riverland pipeline is operated under Pipeline Licence 6 (PL6) issued by the Department for Energy and Mining (DEM) (formerly Department of Primary Industries and Resources, South Australia (PIRSA)) in January 1994. The Berri to Mildura Pipeline is an onshore gas transmission pipeline that supplies natural gas from an off-take on the Riverland Gas Pipeline near Berri in the Riverland of South Australia, to industrial, commercial and domestic markets in the city of Mildura in Victoria, and nearby areas including the Redcliffs township and Karadoc Winery. The Berri to Mildura Pipeline is approximately 148 km in length, with 42.3 kilometres in South Australia, and just over 105 kilometres in Victoria. The South Australian section of the Berri Mildura pipeline is operated under Pipeline Licence 11 (PL11) issued by the Department for Energy and Mining (DEM) (formerly Department of Primary Industries and Resources, South Australia (PIRSA)) in May 1999. The Victorian section of the pipeline is operated under Pipeline Licence 226 (PL226) issued and regulated by theState Government of Victoria.																		
The Riverland Gas pipeline corridor traverses three Interim Biogeographic Regionalisation for Australia (IBRA) bioregions being the Flinders Lofty Block Bioregion, Kanmantoo Bioregion and Murray Darling Depression Bioregion. Heading West to East these bioregions include steep hills to rolling hills containing numerous small intermittent watercourses, undulating dune and hummocks to 3m high containing large plains (fine textured sand susceptible to wind erosion), hilly uplands which become floodplains in the River Murray Valley.The Berri Mildura Gas pipeline traverses only the Murray Darling Depression Bioregion. Again heading West to East the bioregion contains depositional plains that form the major landform of the route with sand ridges, lakes seasonal swamplands and floodplains forming minor landform events.																		
6.1	Soil Impacts	Integrity dig ups, trenching, dewatering and excavations associated with maintenance	Soil erosion, Sediment release to land	H	L	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements; Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas; Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement; The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; Excavations usually occur on the pipeline easement or in designated compounds and are a short term, temporary event; All excavations will be undertaken while maintaining soil integrity and ensuring appropriate rehabilitation of the site post-works; Erosion and sediment controls installed as necessary in accordance with best practice, and routinely checked to ensure they are stable, effective and in good repair; All discharge will be monitored for erosion; Watercourse banks will be reinstated as soon as practicable and banks stabilisation techniques will be applied as necessary; Ground cover and low lying vegetation (approximately < 300mm) will be encouraged as it assists with ground stability and reduces the development of erosion from wind and water.	LOW
			Soil inversion	H	H	H	H	H	1	Yes	N/A	N/A	N/A	N/A	N/A	1	The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; These programs will seek to identify areas of erosion, soil inversion, poor vegetation cover and suspected areas of soil contamination; Should an issue be identified then it will be reported so that rectification works can be determined and scheduled; Topsoil stripping and separate stockpiling will be implemented; Specialist erosion repairs will be conducted, as required, and vegetation matter will be respread over easement.	LOW
			Mobilisation of acid sulphate soils leading to soil contamination	H	L	L	H	L	2	No	Low	N/A	N/A	N/A	N/A	1	According to Australian Soil Resource Information System, the pipeline is situated in low risk area for acid sulfate soils (ASS). Excluding a small section of the pipeline, located directly underneath the Murray River (2.5km north east of Berri), which is located in an area of high risk of ASS. Should works be conducted within the high risk area, an ASS Management Plan will be developed in line with appropriate EPA Guidelines. The ELL contains details of areas of potential ASS and locations of where the pipeline intercepts protected areas and will be reviewed prior to any excavation; If indicators of unanticipated contamination or ASS are discovered, contractors will stop work and seek site specific advice.	LOW
6.1		Inspections and maintenance along the easement and access tracks	Soil compaction, soil contamination	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Formal access tracks to the easement will be used to reduce the need to traverse large lengths across private property; All vehicle movement is confined to the easement and existing access tracks unless prior approval from landholders has been sort; Should an access track exist on the easement then vehicles will remain on the track whenever practicable to reduce the instance of soil compaction; Vehicle movement will be confined to the easement and existing access tracks to reduce soil compaction.	LOW
Appendix C		Pipeline maintenance activities (abrasive blasting and recoating)	Soil contamination	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Persons conducting abrasive blasting shall be trained in the process and a verification of competency retained (APA-HSE-PRO-016- Abrasive Blasting); Drop sheets or drip trays used during coating; Sandblasting tent used in residential areas; Tents used in major coating works.	LOW
Appendix C		Pipeline maintenance activities (pigging and filter change)	Contamination of ground and surface water	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Controls for naturally occurring radioactive material (NORM) as per APA HSE ENV GDE 005 NORMs waste general guidance document; All condensate captured, transported and disposed of as regulated waste; Controlled waste tracking receipted retained; Employees and contractors to complete APA Environmental Awareness Training.	LOW
6.1, Appendix C		Disposal of waste created during maintenance activities	Incorrect disposal of waste leading to soil contamination	H	L	H	L	L	2	No	Low	N/A	N/A	N/A	N/A	1	All condensate waste will be captured, transported and disposed of as regulated waste and controlled waste tracking receipts will be retained; All bins will be lidded and labelled and all waste collected by licenced contractor; Waste management strategies developed for each waste stream prior to the commencement of any waste producing activities, based on the principles of 'Reduce, Reuse, Recycle; and appropriate disposal; Sewage systems to be operated by a contractor; Personnel will be educated on the required waste management practices; Bins will be covered to prevent access by fauna and the spread of rubbish by wind; Hazardous wastes, such as solvents, rust proofing agents and primer, will be managed in accordance with the requirements of relevant legislation and industry standards; All waste material will be removed from worksites on completion of maintenance activities.	LOW
6.1		Storage, use, collection and transport of hydrocarbons and chemicals	Soil contamination	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; A minimal amount of waste hydrocarbons may be produced from maintenance activities on machinery and vehicles and no waste hydrocarbons are expected to be generated by the Pipeline.Any waste hydrocarbons produced are collected and removed for disposal at a licensed waste facility; All maintenance activities are undertaken in accordance with APA procedures which include spill prevention measures; All staff must be trained and competent in the use and management of chemicals; Chemicals and other wastes are stored in container or storage areas as per the relevant requirements detailed in the product's SDS, AS 1940-2004 The storage and handling of flammable and combustible liquids and the EPA Bunding and Spill Management Guideline; Spill kits are located at each site that has a chemical storage area. Spill kits may also be required on work sites should it be identified in the risk assessment completed for the work; Contaminated soil will be removed and disposed of at an appropriately licenced waste facility and controlled waste tracking receipts will be obtained and stored.	LOW
The two pipelines have a total of three major river crossings for the River Murray and one smaller crossing of Reedy Creek. Thirty-one watercourses are intersected along the pipeline which are mostly small and/or intermittent in nature. Wetlands of high to moderate conservation status are found along a number of locations along the Riverland Pipeline while only one significant wetland can be found in proximity to the Berri-Mildura Pipeline. Works needing to be done in areas of shallow groundwater will be managed and attempted to occur during the drier months and will be avoided unless absolutely necessary in riparian zones. Discharge of water will be avoided and minimise impact on environmentally sensitive areas which will be monitored for compliance with water quality guidelines. A permit for water affecting activities will be sought if required.																		
6.2	Groundwater Impacts & Surface Water Impacts	Easement or facility operations	Reduced water quality due to sediment and organic matter run-off	H	L	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Preventive measures will be applied to protect water resources from soil movement through the installation of erosion control measures such as whoa-boys or berms. These will be installed where required (i.e. based on erosion potential on the site) and vegetative ground cover will be maintained at a level consistent with surrounding areas to protect topsoil. The condition of these control measures will be monitored through regular ground and aerial surveillance programs. Should an issue be identified then it will be reported so that rectification works can be scheduled.	LOW
6.2		Integrity dig ups, trenching and excavations associated with maintenance	Reduced water quality due to sediment run-off, surface water sedimentation	L	L	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Preventive measures will be applied to protect water resources from soil movement through the installation of erosion control measures such as whoa-boys or berms. These will be installed where required (i.e. based on erosion potential on the site) and vegetative ground cover will be maintained at a level consistent with surrounding areas to protect topsoil. The condition of these control measures will be monitored through regular ground and aerial surveillance programs. Should an issue be identified then it will be reported so that rectification works can be scheduled. Surface contours will be reinstated as part of the rehabilitation process; Ensuring an appropriate earthworks drainage licence is in place from the EPA for dewatering works.	LOW
			Mobilisation of acid sulphate soils leading to water contamination	H	L	H	H	L	1	No	Low	N/A	N/A	N/A	N/A	1	According to Australian Soil Resource Information System, the pipeline is situated in low risk area for acid sulfate soils (ASS). Excluding a small section of the pipeline, located directly underneath the Murray River (2.5km north east of Berri), which is located in an area of high risk of ASS. Should works be conducted within the high risk area, an ASS Management Plan will be developed in line with appropriate EPA Guidelines. The ELL contains details of areas of potential ASS and locations of where the pipeline intercepts protected areas and will be reviewed prior to any excavation; If indicators of unanticipated contamination or ASS are discovered, contractors will stop work and seek site specific advice.	LOW
Appendix C		Pipeline maintenance activities (abrasive blasting and recoating)	Contamination of ground and surface water	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Persons conducting abrasive blasting shall be trained in the process and a verification of competency retained (APA-HSE-PRO-016- Abrasive Blasting); Drop sheets or drip trays used during coating; Sandblasting tent used in residential areas; Tents used in major coating works.	LOW
Appendix C		Pipeline maintenance activities (pigging and filter change)	Contamination of ground and surface water	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Controls for naturally occurring radioactive material (NORM) as per APA HSE ENV GDE 005 NORMs waste general guidance document; All condensate captured, transported and disposed of as regulated waste; Controlled waste tracking receipted retained; Employees and contractors to complete APA Environmental Awareness Training.	LOW
6.2		Redirection of surface water flow by pipeline excavation work, access track construction or easement maintenance work	Altered drainage patterns to surface water and groundwater	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	All excavations will be rehabilitated so that landforms and drainage patterns are restored; Works in areas of shallow ground water will ideally be scheduled over the summer months to reduce the likelihood of excavating below the water table and resulting in trench water; If a water affecting activity is required (i.e. bank protection, vegetation management, crossing) for operations then a permit from the relevant Landscape Board (through Landscape SA) will be sought; Vehicle access through and across waterways will be required for easement patrols and Cathodic Protection surveys; These will be planned for completion in the drier seasons so to limit disturbance. Surface contours will be reinstated as part of the rehabilitation.	LOW
6.2		Temporary damming or diversion of creeks or waterways associated with excavations	Erosion	H	L	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements; Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas; Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement; The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; Excavations usually occur on the pipeline easement or in designated compounds and are a short term, temporary event; All excavations will be undertaken while maintaining soil integrity and ensuring appropriate rehabilitation of the site post-works; Erosion and sediment controls installed as necessary in accordance with best practice, and routinely checked to ensure they are stable, effective and in good repair; All discharge will be monitored for erosion; Watercourse banks will be reinstated as soon as practicable and banks stabilisation techniques will be applied as necessary; Ground cover and low lying vegetation (approximately < 300mm) will be encouraged as it assists with ground stability and reduces the development of erosion from wind and water.	LOW
6.2		Disposal of waste water created during operations activities (i.e. hydrotesting)	Contamination of ground and surface water	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	All efforts will be made to avoid discharge of wastewater, such as trench and hydro-test water, into waters, and it will be disposed of in a manner that minimises runoff to environmentally sensitive areas; Should discharge potentially result in runoff to watercourses then all reasonable and practical measures (i.e. water testing) will be taken to ensure that the water quality guidelines associated with that waterway are met; Ensuring an appropriate earthworks drainage licence is in place from the EPA for dewatering works.	LOW

PROJECT: PIPELINE LICENCE 6&11- Riverland Gas and Berri to Mildura Gas OPERATIONS AND MAINTENANCE																		
Date: August 2023		ABBREVIATIONS: H = High certain																
REF	TYPE OF IMPACT	EVENTS	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						COMMENTS	ENVIRONMENTAL SIGNIFICANCE	
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS			SIGNIFICANCE
6.2		Storage, use, collection and transport of hydrocarbons and chemicals	Water contamination	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Secure storage and handling of hazardous material to ensure they cannot drain onto the ground or to watercourses or floodplains; Refuelling vehicle and equipment will only occur in bunded area and no refuelling will be undertaken within 10m of a watercourse or environmentally sensitive area; Secure storage and handling of hazardous material to ensure they cannot drain onto the ground or to watercourses or floodplains; Stored chemicals are segregated in accordance with the Australian Dangerous Goods (ADG) Code, and the requirements of their SDSs; Secondary containment bunding and the control and management of chemicals (including flammable and combustible liquids) spills is in accordance with the EPA guidelines 080.16 Bunding and Spill Management (2016); Vehicle and equipment will undergo pre-start checks; A registered/ licensed contractor will be used for all chemical transport; Handling of chemicals will be conducted over hard stand and storage of chemicals will be in bunded undercover areas; Spill kits will be kept at sites where chemicals are stored; Staff will be trained to implement appropriate clean-up/spill response procedures in the event of a spill. All condensate waste will be captured, transported and disposed of as regulated waste and controlled waste tracking receipts will be retained.	LOW
6.2		Maintaining "line of sight" and permanent access along easement, vegetation disturbance	Reduced water quality due to sediment run-off, surface water sedimentation	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Riparian vegetation will be trimmed to maintain line of sight rather than cleared by other means so not to disturb water and soil in riparian zones.	LOW
4.2, 6.5		Vegetation Impacts																
The pipeline generally traverses a disturbed and almost entirely modified landscape (greater than 95%) consisting mostly of non-native pasture grassland and cereal crop areas. Vegetative cover varies throughout the length of the pipeline alignment. Whilst large mature Blue Gums and Peppermint Box dominate the mostly cleared landscape in the Angaston region, mallee species of Eucalyptus dominate the undulating plains, which surround the River Murray. Stands of remnant mallee vegetation dot the landscape. Riparian vegetation communities dominated by large River Red Gums and River Box, with understoreys of lignum and reeds, dominate river and creek banks and floodplains. One significant Iron-Grass community was noted along the route and specific site management protocols have been developed to ensure long term sustainability. Other species of note is Menzies' Wattle and Peep Hill hop-bush being nationally threatened plant species. Since the alignment of the pipeline has generally been constructed within existing, disturbed areas (i.e. areas without major conservation significance or status), no environmental impacts were evident to species with significant conservation status, during field surveys conducted along the length of the pipeline during 2002. The pipeline alignment has been adjusted on a number of occasions to avoid numerous communities of high conservation value. Notable weeds declared under the NRM Act 2004 along the pipeline corridor include Branched Broomrape along the Murray Bridge lateral.																		
6.5		Easement or facility operations	Vegetation clearing (loss of habitat and biodiversity)	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	No clearing outside of previously disturbed boundaries; Should access tracks exist on the easement then vehicle activity will be confined to those tracks whenever practicable so as not to damage surrounding vegetation; Ground cover and low lying vegetation (approximately < 300mm) will be encouraged as it assists with ground stability and reduces the development of erosion from wind and water and provides habitat for fauna. The level of ground cover should be consistent with surrounding areas; Clearing of the low-lying vegetation on the easement is isolated to the immediate project area and the site will be rehabilitated so that ground cover is restored to a condition consistent with surrounding areas; The loss of vegetation as a result of these activities is likely to be short-term and restricted to the existing easements that have previously been used for pipeline construction and maintenance activities; Routine aerial or ground surveillance is used to monitor for excessive or poor vegetation growth; The ELL includes features such as threatened ecological habitat, heritage agreements, parks and conservation reserves that will be reviewed prior to vegetation control occurring; Operational and vehicle activity will be confined to the easement and existing access tracks where practicable, so as not to damage surrounding vegetation; Remnant or retained vegetation at the edges of the easement is left in-situ where it does not interfere with line of sight or the Pipeline; This provides habitat and movement pathways for fauna, while low growing ground cover along the easement provides cover and interconnection for fauna movement; Trimming vegetation rather than clearing in sensitive areas, particularly at watercourses; All clearing outside of the existing easement will require assessment and approval under the Native Vegetation Act 1991; Minimising the time between clearing and rehabilitating the easement when excavations are required; Where practical, removing vegetation without disturbing the soil to preserve root and seed stock along the easement; Planning excavations to ensure that the period of time that the trench is open is minimised; Disturbance of native vegetation is avoided during excavation activities where practicable; Provide fauna escape means in open trenches and regular inspection of open trenches for trapped fauna. Additional fauna protection measures may be installed where appropriate (e.g. where there are long sections of trench open in hot weather); Keeping topsoil stockpiled separate from subsoils during excavation and respreading; Respreading of cleared vegetation on the easement where it does not impede vehicles, or fauna; Re-contouring the land surface consistent with the surrounding area to ensure localised habitats/niches are maintenance.	LOW
6.5		Maintaining "line of sight" and permanent access along easement	Vegetation clearing (loss of habitat and biodiversity)	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Riparian vegetation will be trimmed to maintain line of sight rather than cleared by other means so not to disturb water and soil in riparian zones; No clearing outside of previously disturbed boundaries.	LOW
6.5		Integrity dig ups, trenching and excavations associated with maintenance	Vegetation clearing (loss of habitat and biodiversity)	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements. Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas. Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement. Minimise vegetation control, slashing etc. to achieve line of site objectives; No clearing outside of previously disturbed boundaries.	LOW
			Soil inversion	H	H	H	H	H	1	Yes	N/A	N/A	N/A	N/A	N/A	1	The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; These programs will seek to identify areas of erosion, soil inversion, poor vegetation cover and suspected areas of soil contamination; Should an issue be identified then it will be reported so that rectification works can be determined and scheduled; Topsoil stripping and separate stockpiling will be implemented; Specialist erosion repairs will be conducted, as required, and vegetation matter will be respread over easement.	LOW
6.5		Weeds and/or spread of pathogens on easement or adjacent land	Weed infestations. Reduction in diversity of native plant species due to competition	H	L	L	H	L	2	No	Low	N/A	N/A	N/A	N/A	1	Routine ground patrols are used to monitor the easement for the location of infestations and the extent of infestations; Where access to areas infested by weeds is required, wash vehicles and equipment down (i.e. prior to accessing to weed free areas); Ensure that machinery and other earth moving equipment is free of a build-up of soil and organic matter; Equipment is to be inspected prior to loading at site; Vehicles accessing the easement will be kept clean of debris and soil and washed down on an as needed or periodic basis to prevent the introduction of new weeds, pests and diseases; Minimising soil transport along the easement and prevention of soil transport out of areas of known weed infestation; Identifying and clearly marking known infestations of weeds along the easement; Developing and implementing procedures to define access routes to the easement, and where necessary avoiding areas of known infestation; Landholder requirements for declared weeds information and clean down will be reviewed prior to works and high risk landowners will be contacted in advance for advice; Vehicles and equipment will remain on designated roads and track; Pipeline technicians trained in identification of declared noxious and environmental weed species and techniques for their eradication; Contact high risk landowners in advance and follow their advice.	LOW
6.5		Bushfire on easement due to company activities	Damage or loss of vegetation	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Facility fire breaks maintained; Fire extinguishers in vehicles and compounds; Review fire ban status prior to conducting hot works; Vehicles and equipment to be parked in areas of low fire risk; Enact Emergency Response Management Plan Fire Bans will be adhered to unless specific approval for the activity has been acquired from the relevant authorities; All hot work activities, such as welding, require appropriate site preparation to remove potential ignition sources and the use of a fire-spotter; A job specific SWMS will assess the level of risk the activity poses in the planning stage and should additional control measures be required they will be implemented. This may include having fire-fighting equipment on-site or postponing the work to a period of lower fire risk.	LOW
4.2, 6.5		Native Fauna Impacts																
This region contains habitats that support a variety of native mammal, bird and reptile species. Many species are now confined to isolated areas of remnant vegetation. Listed endangered, vulnerable or rare fauna species under the SA National Parks and Wildlife Act 1972 and/or the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 are likely to be found in this region.																		
6.5			Disturbance or injury to fauna, localised reduction in biodiversity	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Remnant or retained vegetation at the edges of the easement is left in-situ where it does not interfere with line of sight or the Pipeline. This provides habitat and movement pathways for fauna, while low growing ground cover along the easement provides cover and interconnection for fauna movement. Integrity digs usually occur in the line of sight area of the easement and all efforts are made not to disturb remnant or retained vegetation. Fencing / barricading, 45 degree egress ramp and hessian bag for any excavations left open overnight; Daily inspections of open excavations to be carried out. If any fauna are found, a trained fauna handler is to be engaged for removal; The National Parks and Wildlife Act 1972 may be triggered should protected fauna need to be removed from trenches. Fauna movement along and across the easement is in a no way restricted except where existing agricultural or residential fencing is already in place. Vehicle movement and pipeline facilities (line valves, end of line stations etc.) may cause noise or lighting disturbance to fauna. These impacts would be particularly isolated or infrequent. Prolonged works will rarely occur, however they have the potential to disturb nesting sites and feeding areas. The management of significant fauna species will be incorporated into the risk assessment completed prior to the work to ensure appropriate management controls are identified.	LOW
		Maintaining access along the easement	Injury to fauna, damage to or degradation of habitat	H	H	H	L	H	1	No	Low	N/A	N/A	N/A	N/A	1	Site inductions, JHEA, JSA and Permit to Work sign on at site include vehicle speed restrictions, access to site routes when any maintenance undertaken on easement/facilities, and flora and fauna damage. Integrity digs undertaken in smallest footprint possible. Area's barricaded/fenced if open overnight. Any fauna found during these activities either relocated to sides of easement or relocated by specialist trained wildlife rescuers. Movement of fauna across and along the easement is in no way restricted, apart from existing agricultural or residential fencing already in place. The majority of easements are within agricultural/residential disturbed land areas, liaison with specified personnel where easements traverse National Parks, Nature reserves and Water catchments in relation to specific controls or fauna issues, or in areas where known vulnerable or at risk fauna populations exist. Construction activities only occur during daylight hours, unless emergency situation; Avoid driving during dusk and dawn; a specialist management plan will be developed for known or identified wombat populations.	LOW
6.5		Vibration, lighting or noise form machinery and equipment	Disturbance to fauna and fauna movements	H	L	H	L	H	1	No	Low	N/A	N/A	N/A	N/A	1	Vehicle movement and pipeline facilities (line valves, end of line stations etc.) may cause noise or lighting disturbance to fauna. These impacts would be particularly isolated or infrequent. Prolonged works will rarely occur, however they have the potential to disturb nesting sites and feeding areas. The management of significant fauna species will be incorporated into the risk assessment completed prior to the work to ensure appropriate management controls are identified. All plant and facilities are designed and operated to comply with the EPA Guidelines for the Environment Protection (Noise) Policy and the Australian Standard 1055: Acoustics.	LOW
6.3		Storage, use, collection and transport of hydrocarbons and chemicals	Native fauna access to contaminants	H	H	H	H	H	1	Yes	N/A	N/A	N/A	N/A	N/A	1	Secure storage and handling of hazardous material to ensure they cannot drain onto the ground or to watercourses or floodplains; Stored chemicals are segregated in accordance with the Australian Dangerous Goods (ADG) Code, and the requirements of their SDSs; Secondary containment bunding and the control and management of chemicals (including flammable and combustible liquids) spills is in accordance with the EPA guidelines 080.16 Bunding and Spill Management (2016); Handling of chemicals will be conducted over hard stand and storage of chemicals will be in bunded undercover areas; Staff will be trained to implement appropriate clean-up/spill response procedures in the event of a spill.	LOW
6.5		Bushfire on easement due to company activities	Damage or loss of flora, fauna, habitat.	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Facility fire breaks maintained; Fire extinguishers in vehicles and compounds; Review fire ban status prior to conducting hot works; Vehicles and equipment to be parked in areas of low fire risk; Enact Emergency Response Management Plan Fire Bans will be adhered to unless specific approval for the activity has been acquired from the relevant authorities; All hot work activities, such as welding, require appropriate site preparation to remove potential ignition sources and the use of a fire-spotter; A job specific SWMS will assess the level of risk the activity poses in the planning stage and should additional control measures be required they will be implemented. This may include having fire-fighting equipment on-site or postponing the work to a period of lower fire risk.	LOW

PROJECT: PIPELINE LICENCE 6&11- Riverland Gas and Berri to Mildura Gas																		
ACTIVITY: OPERATIONS AND MAINTENANCE																		
Date:		August 2023		ABBREVIATIONS: H = High certain														
REF	TYPE OF IMPACT	EVENTS	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						COMMENTS	ENVIRONMENTAL SIGNIFICANCE	
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS			SIGNIFICANCE
4.2 Sensitive Area Impacts																		
The Pipelines traverse through areas of conservation, heritage and cultural significance, such as roadside reserves, rivers, creeks, conservation areas and wetlands. The sites include Reedy Creek, North Para River, Marne River and Murray River floodplains and wetlands, Keyneton stone walls and isolated strands and corridors of remnant vegetation remaining in roadside reserve. There are two significant wetlands within close proximity of the Riverland pipeline: the Swan Reach Wetland Complex and Spectacle Lakes, which are both listed in the Directory of Important Wetlands in Australia, and are considered to be of national importance for their ecological values (Environment Australia 2015). There are two significant wetlands within close proximity of the Berri Mildura pipeline: the Gurra Lakes Wetland Complex and Pike-Mundic Wetland Complex, which are both listed in the Directory of Important Wetlands in Australia, and are considered to be of national importance for their ecological values (Environment Australia 2015). The Gurra Lakes Wetland Complex is located within the Lyrup Forest Reserve (Listed on the Register of the National Estate).																		
		Disturbance to Environmentally Sensitive Areas found along pipeline	Loss of environmental values	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	No impacts are expected to conservation areas other than those addressed under soil, water, flora and fauna impacts. Every precaution has been taken to ensure the integrity of the pipeline to prevent any breach which may detrimentally affect these wetlands. Regular audits, patrols and aerial surveys are conducted to ensure continual safe operation.	LOW
4.7, 6.9 Air Impacts																		
The air quality in the vicinity of the pipeline route is expected to be typical of a rural environment and influenced by a range of activities such as: • Dust from stock and vehicle movements or high winds; and • Vehicle and equipment exhaust fumes. Air emissions from the Pipeline and facility operations are usually of limited duration and quantity. Emissions that may impact on air quality include the release of natural gas during pipeline venting or purging to allow certain maintenance activities, vehicle and machinery exhausts and dust emissions from vehicle and equipment movement.																		
		Routine maintenance surveillance and operations of above ground facilities, including emergency maintenance	Venting to atmosphere of greenhouse gases	L	L	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Minor emissions from the Pipeline are likely at above-ground facilities during maintenance operations. Remote operation of valves (in the event of damage or programmed maintenance) uses gas pressure to drive valve actuators and will result in the release of small amount of gas. Minor emissions from metering stations will occur during loading and removal of the pipeline pigs, which would normally occur once every five to ten years. Venting or purging activities are undertaken on as needed basis; The risk of pipeline ruptures or leaks is extremely low due to the implementation of protection measures and the routine monitoring, inspection and maintenance that will be carried out. Greenhouse gas emissions reporting undertaken for venting and other gas emissions; Particular emissions and combustion emissions are reported to the National Pollutant Inventory (NPI).	LOW
6.9			Dust impacts on neighbours	H	H	H	H	L	1	No	Medium	Short	Confined	N/A	N/A	2	The impact of dust on air quality is likely to be localised, short term and restricted to vehicle movement on unsealed roads, occasional excavation, and road maintenance activities; Adjacent residents and local authorities are advised of pending major venting operations prior to undertaking the activity and notification is documented; Minimising time between clearing and rehabilitating the easement when excavations are required; Speed limits set to minimise the production of dust.	LOW
SOCIAL ENVIRONMENT																		
4.5, 6.7 Existing Land use Impacts																		
The main land use of this region is agriculture with extensive pasture grassland and cereal crop areas made up of leasehold and freehold land. Some limited areas of remnant vegetation remain. Communications will be constantly ongoing with landholders when non-routine activities are required and easement agreements are in place with existing landholders to permit normal grazing and cropping (shallow rooted) activities.																		
		Operations and routine/non routine maintenance activities producing noise	Disruption of land use rights and practices, disturbance of residents, landholders and third parties	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Existing access tracks to the easement will be used to reduce the need to traverse large lengths across private property; All vehicle movement is confined to the easement and formal access tracks unless prior approval from landholders has been sought; Regular annual contact with landholders is maintained and all relevant pipeline and easement management issues discussed; No specific notification of ground or aerial patrols will be provided to landholders; however, landholders will be provided written notification of all non-routine works; All efforts will be made to incorporate a landholder request for a change in access, timing or location whenever possible; New landholders are contacted and briefed regarding approved and prohibited land uses on the pipeline easement, as well as safety, emergency and operational considerations; Ongoing communication with landholder in an emergency situation as soon as practicable; Reinstating all fences cut during maintenance activities, following rehabilitation of the easement and ensuring any damage to crops or pasture is repaired to a standard the same or better than current condition; Each easement agreement details the permitted land-use over the easement; The Pipeline has been designed for the existing land-use and any changes to the land-use may require increased physical protection of the Pipeline. The protection measures required would be identified in the SMS completed for that land-use change. Where practicable, operations and maintenance activities are scheduled during appropriate seasons in relation to land use activities including cropping regimes, and livestock cycles, in order to reduce potential adverse effects.	LOW
		Storage, use, collection and transport of hydrocarbons and chemicals	Access to livestock and/or spills resulting in loss of agricultural production	H	H	H	H	H	1	Yes	N/A	N/A	N/A	N/A	N/A	1	Secure storage and handling of hazardous material to ensure they cannot drain onto the ground or to watercourses or floodplains; Refuelling vehicle and equipment will only occur in bunded area and no refuelling will be undertaken within 10m of a watercourse or environmentally sensitive area; Secure storage and handling of hazardous material to ensure they cannot drain onto the ground or to watercourses or floodplains; Stored chemicals are segregated in accordance with the Australian Dangerous Goods (ADG) Code, and the requirements of their SDSs; Secondary containment bunding and the control and management of chemicals (including flammable and combustible liquids) spills is in accordance with the EPA guidelines 080.16 Bunding and Spill Management (2016); Vehicle and equipment will undergo pre-start checks; A registered/ licensed contractor will be used for all chemical transport; Handling of chemicals will be conducted over hard stand and storage of chemicals will be in bunded undercover areas; Spill kits will be kept at sites where chemicals are stored; Staff will be trained to implement appropriate clean-up/spill response procedures in the event of a spill. All condensate waste will be captured, transported and disposed of as regulated waste and controlled waste tracking receipts will be retained.	LOW
		Bushfire on easement due to company activities	Damage to agricultural production and or third party infrastructure.	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Facility fire breaks maintained; Fire extinguishers in vehicles and compounds; Review fire ban status prior to conducting hot works; Vehicles and equipment to be parked in areas of low fire risk; Enact Emergency Response Management Plan Fire Bans will be adhered to unless specific approval for the activity has been acquired from the relevant authorities; All hot work activities, such as welding, require appropriate site preparation to remove potential ignition sources and the use of a fire-spotter; A job specific SWMS will assess the level of risk the activity poses in the planning stage and should additional control measures be required they will be implemented. This may include having fire-fighting equipment on-site or postponing the work to a period of lower fire risk.	LOW
		Maintaining "line of sight" and permanent access along easement	Erosion or sedimentation; loss of agricultural production capacity; loss of visual amenity	H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements; Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas; Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement; The condition of soil and terrain will be monitored through regular ground and aerial surveillance programs; Excavations usually occur on the pipeline easement or in designated compounds and are a short term, temporary event; All excavations will be undertaken while maintaining soil integrity and ensuring appropriate rehabilitation of the site post-works; Erosion and sediment controls installed as necessary in accordance with best practice, and routinely checked to ensure they are stable, effective and in good repair; All discharge will be monitored for erosion; Watercourse banks will be reinstated as soon as practicable and banks stabilisation techniques will be applied as necessary; Ground cover and low lying vegetation (approximately < 300mm) will be encouraged as it assists with ground stability and reduces the development of erosion from wind and water.	LOW
		Operations and routine/non routine maintenance activities producing noise	Noise disturbance to existing landusers	H	H	H	H	L	1	No	Low	N/A	N/A	N/A	N/A	1	All plant and facilities along the pipeline comply with the EPA guidelines for the Environment Protection (Noise) Policy and AS1055:Acoustics; Adjacent residents and local authorities are advised of pending major venting operations prior to undertaking the activity..	LOW
		Weeds and/or spread of pathogens on easement or adjacent land	Weed infestations. Reduction in agricultural production and quality, detrimental effects on stock, including poisoning.	H	L	H	H	L	1	No	Low	N/A	N/A	N/A	N/A	1	Routine ground patrols are used to monitor the easement for the location of infestations and the extent of infestations; Where access to areas infested by weeds is required, wash vehicles and equipment down (i.e. prior to accessing to weed free areas); Ensuring that machinery and other earth moving equipment is received on-site free of a build-up of soil and organic matter. Equipment is to be inspected prior to unloading at site; Vehicles accessing the easement will be kept clean of debris and soil and washed down on an as needs or periodic basis to prevent the introduction of new weeds, pests and diseases; Minimising soil transport along the easement and prevention of soil transport out of areas of known weed infestation; Identifying and clearly marking known infestations of weeds along the easement; Developing and implementing procedures to define access routes to the easement, and where necessary avoiding areas of known infestation; Landholder requirements for declared weeds information and clean down will be reviewed prior to works and high risk landowners will be contacted in advance for advice; Vehicles and equipment will remain on designated roads and tracks; Contact high risk landowners in advance and follow their advice.	LOW
4.4, 6.8 Cultural & Heritage Impacts																		
Several sites have been identified along the Riverland pipeline corridor; these sites have been assessed as being of significant Aboriginal heritage value. Numerous burials have been unearthed at Murray Bridge during house and road construction and some of these are in close proximity to the pipeline route. However, no items of Aboriginal heritage significance were unearthed during the construction of the pipeline. Eight sites were detected during the field survey of Berri-Mildura pipeline route. A disturbed shell midden was found on the Western side of the Murray River crossing on and around the pipeline easement. This site extends for at least 260m back from the riverbank and on the surface comprises fragmentary mussel shell and a small number of chert stone artefacts. This location forms part of the former Berri rubbish dump and thus the land was previously disturbed before construction of the natural gas pipeline. Aboriginal archaeological sites were also found on the eastern side of the river crossing. Relatively dense shell middens containing faunal material and hearths were found on each of the sandy levees on the floodplain. Scattered, fragmentary shell midden was also found on the riverbanks. The pipeline route avoids areas of significant European heritage significance by utilising roads, roadside verges, disused railway easements and cleared paddocks. Dry stone walls in the Keyneton region (KP 15.6) were traversed during construction, whereby each wall was dismantled and reinstated to its original condition following completion of construction activities.																		
		Disturbance or destruction of heritage items or sites		H	H	H	H	H	1	No	Low	N/A	N/A	N/A	N/A	1	Completion of an archaeological survey to identify all heritage values prior to the commencement of significant excavation activities in previously un-surveyed areas; Fencing, flagging and recording of new sites with a GPS and inclusion of sites on the GIS system; Restricting operational activities to existing access tracks and the easement; Any historic heritage discoveries will be reported and managed in accordance with the Heritage Places Act 1993; Works are not to disturb any established trees or vegetation without prior advice from the HSEH team; Works in areas installed via directional drilling must be regarded as undisturbed unless subsequent disturbance (e.g. maintenance dig-ups) have occurred in the exact same area.	LOW
		Vehicle movements, vegetation management and earthworks for integrity																

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