ASHBURTON WEST FACILITIES

ENVIRONMENT PLAN

PUBLIC SUMMARY DOCUMENT

REVISION 2

December 2014

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1. Introduction

DBP Development Group Nominees Pty Ltd is the instrument holder for several active Pipeline Licences (PL) and a Production Licence (L) issued under the *Petroleum Pipelines Act 1969* and *Petroleum and Geothermal Energy Resources Act 1967* (PGER Act) for petroleum activities undertaken in the north west of Western Australia near the town of Onslow.

DDG purchased the Tubridgi Gas Plant and associated pipelines (Tubridgi Lateral [PL16] and Ashburton West Lateral [PL19]) and the Griffin Export Facility (GEF) from BHP Billiton Petroleum (Australia) Pty Ltd and BHP Petroleum (Ashmore Operations) Pty Ltd.

In April 2014, DDG commenced construction on the Wheatstone Lateral and Ashburton West Loop (PL 103) which together with the acquired Ashburton West Lateral (PL19) comprise the Wheatstone Ashburton West Pipeline system (WAWP). The WAWP will connect the Chevron Wheatstone domestic gas plant to the Dampier Bunbury Natural Gas Pipeline (DBNGP) with practical completion scheduled for December 2014.

DDG propose to connect its acquired Tubridgi Lateral (PL16) to the proposed Onslow Lateral (currently under construction by DDG Ashburton Pty Ltd) to establish the Ashburton Onslow Gas Pipeline system (AOGP). The AOGP shall enable supply of gas from the DBNGP to the new Onslow Power Station.

Tubridgi, the GEF, the WAWP and the Tubridgi Lateral component of the AOGP are collectively referred to as the Ashburton West Facilities (ASW). Table 1-1 details the facilities associated with each of the ASW licences, Figure 1-1 illustrates the administrative boundaries of each and Figure 1-2 provides a layout of the Tubridgi and GEF facilities.

The *Petroleum Pipeline (Environment) Regulations 2012* (PPE Regs) and *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* (PGERE Regs) require the development and implementation of an Environment Plan (EP) to the satisfaction of the Department of Mines and Petroleum (DMP). The Ashburton West Environment Plan (ASW EP) has been prepared to satisfy this requirement. The objective of this document is to provide a succinct and publically available summary of the DMP approved ASW EP (Revision 9) as required under regulation 11(7) of the Regulations.

Table 1-1 Pipeline and Production Licences of the ASW System

Facility	Pipeline / Infrastructure	Description	Licence
WAWP (enabling delivery of natural gas from Chevrons Wheatstone project to the DBNGP)	Wheatstone Lateral	22 km 16” pipeline extending from Chevron’s Wheatstone project to the ASW	PL 103
	Ashburton West Loop	87 km 16” pipeline extending from ASW to the DBNGP	
	Ashburton West Lateral	87 km 10” pipeline extending from ASW to the DBNGP	PL 19
AOGP (enabling delivery of natural gas from the DBNGP to the proposed Onslow Power station)	Tubridgi Lateral	87 km 6” pipeline extending from ASW to the DBNGP	PL 16
Decommissioned Infrastructure	GEF	Gas processing plant and associated infrastructure. 6 km 10” pipeline (Griffin Pipeline) connecting the Griffin Subsea Pipeline to the gas processing plant.	PL 20
	Tubridgi	Plugged and abandoned onshore wells and associated flow lines.	L9

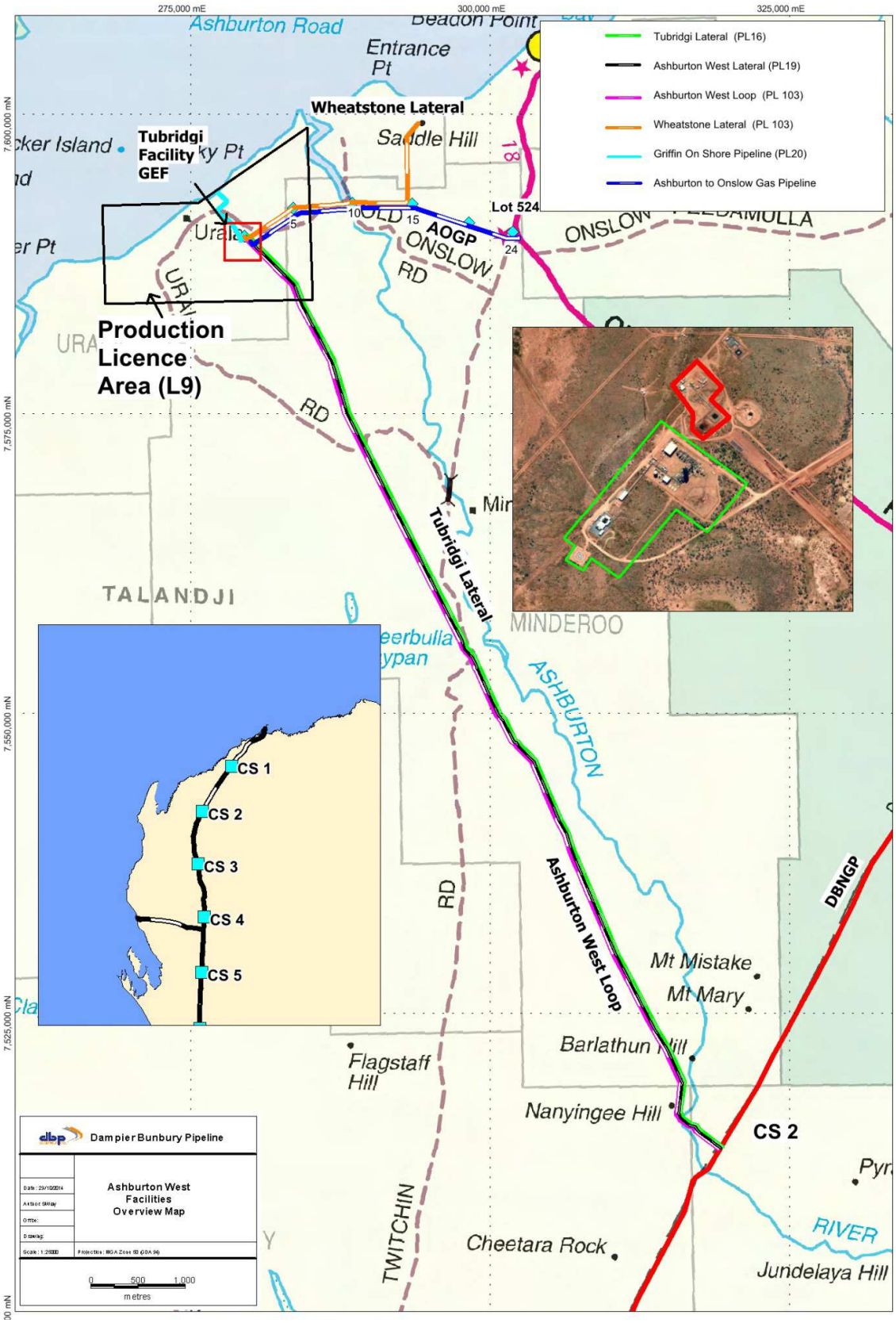

Figure 1-1 Overview Map of Ashburton West

1.1. Proponent

DBP Development Group Nominees Pty Ltd (DDG) is the instrument holder of PL 16, 19, 20, 103 and L9 for the Tubridgi Lateral, Ashburton West Lateral, Griffin Pipeline, Ashburton West Loop, Wheatstone Lateral and the depleted Tubridgi gas reservoir respectively (the ASW Licences).

DDG is 100% owned by DUET an ASX-listed infrastructure fund (refer Figure 1-3).

DDG has entered into an operating agreement under which DBP Development Group Pty Ltd is the nominated operator and exercises all rights and retains all obligations associated with the ASW Licences.

DBP Development Group Pty Ltd relies on the services of DBNGP (WA) Nominees Pty Ltd (DBP), the owner of the DBNGP, for the provision of labour and equipment to undertake its business. In this regard DDG adopt all DBP policies and procedures across the operation of its business.

Public enquiries regarding ASW may be directed to DDG via:

Attn: Land Manager
PO Box Z5267
Perth, St Georges Terrace WA 6831
Telephone +61 8 9223 4300
landmanagement@dbp.net.au

2. Location

The ASW is located approximately 31 km south east of Onslow. The approximate coordinates of the key associated above ground infrastructure including the GEF is 279 440, 7 589 600. The north western extent reaches to the Wheatstone facility (293 910, 7 599 150). The south eastern extent reaches to DBNGP compressor station 2 (319 130, 7 513 680).

3. Existing Environment

The objective of this section is to provide a description of the existing natural, social and cultural environment that may be affected by activities at ASW.

3.1. Climate

ASW is located in a sub-tropical arid zone with temperatures varying slightly throughout the region, mainly due to distance from the coast and elevation. Typical temperatures for the site(s) can be taken from Onslow, which has a mean monthly maximum of 36^{o}C in January to March and 25^{o}C in July. Corresponding mean monthly minimums are 24^{o}C and 12^{o}C (BOM, 2012). Rainfall is generally low and erratic, with mean monthly rainfalls ranging from 0.7 mm in October to 67.4 mm in February. The average annual total rainfall for Onslow is 291.9 mm (BOM, 2013).

The summer season is characterised by prolonged dry periods created by anti-cyclonic activities to the south. Thunderstorms may develop as a result of convectional activity, with tropical cyclones occurring regularly in the area. Tropical cyclones often produce large amounts of rainfall, which may result in widespread flooding and isolation (BOM, 2013).

3.2. Geology

ASW is located within the Coastal Plain geomorphic province, which extends inland from the coast for approximately 90 km. This region is characterised by extensive sandy plains with north-west or north trending longitudinal dunes, broad claypans and circular grassy depressions. Natural relief across the province rarely exceeds 40 m above the surrounding plains and occurs in the form of dune crests and isolated hills.

Soils are generally red-brown with poorly developed profiles. Soils are commonly alkaline as a result of accumulation of sodium and calcium ions at shallow depths (Astron, 1993, Payne *et al.*, 1988). Rangeland surveys carried out indicate soils on the Onslow Coastal Plain tend to be low in nitrogen and phosphorous (Payne *et al.*, 1988).

The Wheatstone Public Environmental Review (Chevron 2010) indicates the potential for occurrence of acid sulphate soils (ASS) over about 3–4 km of the northern portion of the WAWP alignment. There is also possibility of such soils occurring at other low-lying locations along the pipeline alignment.

3.3. Flora

The vegetation that occurs in proximity to ASW belongs to the Carnarvon Botanical District (Beard, 1975). Vegetation is eremaean in character, reflecting the semi-arid environment and consists of sparse to moderate mixed *Acacia* scrub over dense hummock *Triodia pungens* grassland. *Acacia* species include *A. tetragonophylla, A. synchronicia, A. sclerosperma* and *A. farnesiana.* A sparse dwarf scrub *Senna* species, *Stylobasium spathulatum* and *Psoralea* species occurs. The calcrete ridges outcropping from the surrounding sand plains support *Hakea subarea, A. coriacea* and *A. sclerosperma* with the dwarf shrub *Adriana tomentosa* (Beard, 1975).

Desktop studies carried out for the Griffin Shore Crossing Project and the LPG Pipeline (1993) did not locate any rare or priority flora species. A Declared Rare Flora (DRF) and Priority Flora list was published by the Department of Conservation and Land Management (CALM) in 1995, which lists nine species located in the vicinity of ASW, one of which is considered a priority 1 species (*Abutilon sp.)* (Astron Environmental, 1990).

One declared noxious weed, *Prosopis* sp. (Mesquite) is known to occur in the area of ASW. During the flora and vegetation survey previously conducted by BHP in proximity to the GEF, Mesquite trees were detected. Other weed species include *Aerva javanica* (Kapok bush), *Chenopodium murale, Malvastrum americium, Chloris virgata, Cenchrus ciliaris* (Buffel grass) and *Cenchrus setigerus* (Birdwood grass). Both Buffel and Birdwood grass have been widely used in the pastoral industry as fodder grass. The remaining four weed species are generally considered widespread (BHP, 2006b).

A Level 1 flora and vegetation survey was undertaken in April 2013 by Mattiske Consulting Pty Ltd (Mattiske). No Threatened Ecological Communities (TEC), Priority Ecological Communities (PEC) and Declared Threatened Flora species as listed by DPaW under the *Wildlife Conservation Act 1950 [WA]* were recorded.

The Mattiske 2013 survey recorded a total of seven introduced flora species:

- **Aerva javanica* (Kapok bush)
- **Cenchrus ciliaris* (Buffel grass)
- **Cynodon dactylon* (Couch)
- **Malvastrum americanum* (Spiked Malvastrum)
- **Parkinsonia aculeata* (Jerusalem thorn)
- **Portulaca oleracea* (Pigweed)
- **Vachellia farnesiana* (Mimosa bush).

Of these species only **Parkinsonia aculeata* is listed as a P1 and P2 Declared Plant species under s 37 of the Agriculture and Related Resources Protection Act (1976). A single record of **Parkinsonia aculeata* was made adjacent to the Ashburton River Causeway (Mattiske 2013).

3.4. Fauna

A number of fauna surveys have been undertaken throughout the history of activites at the ASW locality. The most recent survey work was undertaken comprised a Level 1 Reconnaissance survey conducted in association with the construction of the WAWP and extending across the majority of the ASW footprint (Ninox, 2013).

The survey identified a broad range of fauna habitats, the majority of which are widespread throughout the Pilbara region. These areas included tidal mudflats and tidal creeks associated with samphire (*Tecticornia spp.)* and Mangrove (*Avicennia marina*) vegetation units which provide habitat to a number of fauna species, particularly the Migratory bird species. Conservation significant avian species identified to have a moderate to high likelihood of occurring within the area include:

- Eastern Great Egret (*Ardea modesta*)
- Rainbow Bee-eater (*Merops ornatus*)
- Grey-tailed Tattler (*Tringa brevipes*)
- Peregrine Falcon (*Falco peregrinus*)

- Australian Bustard (*Ardeotis australis*)
- Fork-tailed Swift (*Apus pacificus*)
- Barn Swallow (*Hirundo rustica*)
- Oriental Pratincole (*Glareola maldivarum*)
- Common Sandpiper (*Actitis hypoleucos*)
- Red-necked Stint (*Calidris ruficollis*)
- Red Knot (*Calidris tenuirostris)*
- Lesser Sand Plover (*Charadrius mongolus*)
- Bar-tailed Godwit (*Limosa lapponica*)
- Lesser-crested Tern (*Sterna bengalensis*)
- Caspian Tern (*Sterna caspia*)
- White-winged Black Tern (*Sterna leucoptera*)
- Greater Sand Plover (*Charadrius leschenaultia*)
- Bush Stone-curlew (*Burhinus grallarius*)
- Flock Bronzewing (*Phaps histrionica*)
- Oriental Plover (*Charadrius veredus*)
- Ruddy Turnstone (*Arenaria interpres*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Eastern Curlew (*Numenius madagascariensis*)
- Whimbrel (*Numenius phaeopus*)
- Wood Sandpiper (*Tringa glareola*)
- Common Greenshank (*Tringa nebularia*)
- Roseate Tern (*Sterna dougallii*)
- Common Tern (*Sterna hirundo*)
- Sanderling (*Calidris alba*)
- White-bellied Sea-eagle (*Haliaeetus leucogaster*)

In total, eight species of introduced, feral or stock mammals are known to occur in the general area. These include one rodent (House Mouse), three carnivores (Wild/Domestic Dog, Fox and Cat) and four herbivores (Horse, European Cattle, Goat and Rabbit).

3.5. Hydrology and Hydrogeology

The nearest permanent fresh water body is the Ashburton River, which predominantly runs parallel to the associated pipelines, situated approximately 10 km to the east. The Ashburton West Loop, Ashburton West Lateral and Tubridgi Lateral each cross the Ashburton River approximately 4 km north west of CS2 and the Wheatstone Lateral also crosses once approximately 12 km east of the Tubridgi and GEF facilities

The Ashburton River is an intermittent stream that travels in a northwest direction and meanders through extensive flood plains between Nanutarra and Onslow (Payne et al. 1988). It is characterised by long dry periods and with irregular significant flow events resulting from high intensity rainfall events.

The most recent groundwater monitoring event (URS, 2013) identified groundwater elevations at ASW between 4.035 and 6.003 metres below ground level.

3.6. Contamination

DDG engaged GHD to undertake a desktop assessment and limited soil and groundwater sampling to determine potential contamination at the Tubridgi Gas Plant and the GEF (GHD, 2011).

The desktop and site investigation and historical sampling information was used to request an assessment, by the Department of Environment and Conservation (DEC) (now the Department of Environment Regulation DER), under the *Contaminated Sites Act 2003* (CS Act). DEC subsequently classified part of Lot 163 on Plan 220110 (Certificate of Title LR3135/584), which is associated with ASW under section 11 of the CS Act. The classification was made 7 November 2011 as *'Possibly contaminated - investigation required'*, with the nature and extent of contamination being attributed to hydrocarbons (such as from diesel and oil), which were identified in groundwater at the site.

Remediation of the Tubridgi Evaporation Ponds (TEP) and Turkey Nest Pond (TNP) commenced in July 2014. All identified impacted soils have been removed offsite for disposal to landfill facilities in Karratha as Class II and III waste. The results of the second round of validation sampling are expected in early November 2014. DDG shall provide an update to DMP upon receipt of the final validation results.

3.7. Social and Economic

ASW is part of the Shire of Ashburton Local Government Area, which spans approximately 105,647 km2 and has a population of approximately 10,001 (ABS, 2013). Onslow is the closest major town (approximately 31 km north-east of ASW) and the major industries include mining, pastoralism and fishing.

ASW falls within the Pastoral Region of Western Australia, located on Urala Station, which was established in 1912 and covers approximately 55,988 ha. The station is used predominantly for grazing sheep.

The 87 kilometres of pipelines connecting the Tubridgi Facility to the DBNGP at Compressor Station 2, the Tubridgi Lateral which forms part of the AOGP and the Ashburton West Loop pass through land owned by four pastoral stations, Nanutarra, Yanrey, Minderoo and Urala. Urala homestead (located 8 km from the corridor) is the closest sensitive recepetor. Yanrey homestead and Minderoo homestead are located 20 km and 12 km from the corridor respectively.

BHP and DDG have entered into an Access Deed under which BHP gives DDG access to the land and to any easements related to ASW.

Easements associated with ASW are administered under the *Land Administration Act 1997* (WA) and include easements I328281, I328282, I328283 and I328284.

3.8. Cultural Environment

DDG has conducted a review of the 1998 Thalanji Consent determination (reference number WAD6113), as it covers the easement and lease areas subject to the Tubridgi and GEF facilities. This assessment concluded that these facilities and associated easements are listed as exclusions and therefore not subject to Native Title.

In addition, the Thalanyji and Minderoo Indigenous Land Use Agreement (ILUA) (Reference number W12009/024) dated 2011 outlines that the easements and leases on Minderoo are specifically excluded (as per the consent determination) from the agreement.

In regards to the WAWP corridor, DDG has an active Native Title Agreement and an Aboriginal Heritage Agreement in Place for the Thalanyji group. All sites within the WAWP corridor determined to be salvaged via the Section 18 process have been relocated outside the WAWP vicinity. Note: the WAWP corridor includes the Tubridgi Lateral component of the AOGP.

All areas pertaining to ASW have been surveyed and no additional sites have been identified. Work Program Clearances are in place with the Thalanji after the completion of ethnographic and archaeological surveys.

Any future construction activities associated with operational and maintenance of ASW may require section 18 approval under the Aboriginal Heritage Act 1972.

4. Activity Description

DDG shall maintain the following equipment in operation at ASW:

- WAWP (commissioning proposed mid-November):
  - 16” pipeline (PL103) from the Wheatstone Project domestic gas plant to the ASW (Wheatstone Lateral).
  - 16” pipeline (PL103) form the ASW to CS2 (Ashburton West Loop)
  - Wheatstone Launcher Facility (WHL)
  - Wheatstone Receiver Facility (WHR)
  - 10” pipeline (PL19) from DBNGP to ASW;

- AOGP (commissioning proposed Q2 2015):
  - 6” Tubridgi Lateral (PL16)
  - Ashburton West Interconnect

- Tubridgi Facility:

  - Groundwater monitoring wells

- GEF:
  - Accommodation Camp (inclusive of sewage system, potable water holding tanks and power generation)
  - Groundwater monitoring wells

The potential primary activities that may be undertaken as part of site management and infrastructure maintenance include:

- Access and Land Use;
- Pipeline Corridor Access;
- Accommodation refurbishment and inhabitation;
- Non-intrusive survey and inspection associated with proposed future works;
- Pipeline operation and maintenance; and
- Minor earthworks.

Pipeline maintenance is broken into two categories: preventative maintenance and reactive maintenance. Preventative maintenance comprises surveillance, monitoring and inspection activities that do not require modifications or repair of the pipeline and associated infrastructure. Preventative maintenance does not require excavation, use of chemicals or any activity which is likely to cause significant damage to the environment.

Reactive maintenance includes activities undertaken in response to a fault or other damage to the pipeline. Through intelligent pigging, aerial surveillance and other monitoring and inspection, DDG may become aware of a section of pipeline that requires a visual inspection and possibly repair. Reactive maintenance may require small excavations in the ROW to expose the pipeline.

5. Implementation Strategy

In order to identify, understand and manage all environmental sources of risk and consequent impacts associated with the operation of ASW, a comprehensive Environmental Risk Assessment (ERA) was completed on 23 September 2014 new or modified activities. The ERA included a multidisciplinary team of in-house personnel following a structured process which sought to:

- Outline key operational activities;
- Identify, analyse and evaluate associated hazards and corresponding environmental impacts;
- Where necessary, establish suitable controls; and
- Systematically assess the residual associated environmental risk.

The below section set out the key control measures established to manage risks identified during the ERA.

5.1. Soil and Sediment

- Vehicle access shall be restricted to stable ground. Additional care shall be taken near waterways and drainage lines.
- If a JHA identifies erosion as a possible impact, erosion and sediment control structures shall be constructed, such as sediment traps or drainage controls.
- Soil and surface stability shall be maintained at all times (e.g. cut and fill excavation shall be shaped to maintain slope stability and temporary erosion control berms, drains and sediment barriers shall be installed as necessary and maintained until final construction clean-up is completed).
- Excavation of watercourse beds and banks shall be minimised, leaving an undisturbed organic mat within the riparian zone, or delayed until construction of the crossing is imminent, thus preventing sediment input to watercourses.

- Topsoil, subsoil and vegetation disturbed during earthworks shall be stockpiled separately such that the soil profile may be maintained during backfilling (i.e. topsoil returned to the top).
- Following the completion of earthworks, topsoil and subsoil shall be returned in sequence to reinstate the soil profile.
- Following back fill and respreading, topsoil shall be ripped to prevent compaction.

5.2. Flora

- Maintain a GIS Environmental Database to present up to date available information regarding the location of conservation significant and environmentally sensitive areas.
- Appropriate approvals shall be obtained prior to the clearing of any native vegetation.
- Vegetation clearing shall be kept to the minimum amount necessary to allow access or approved works.
- Access tracks shall be kept navigable by pruning of overhanging branches and slashing where necessary.
- The width of access tracks shall be maintained no wider than 5m.
- Access shall be restricted in areas subject to rehabilitation.
- Records shall be kept to document the details of clearing conducted in order to facilitate reporting in accordance with relevant approvals.
  In areas where rehabilitation is not achieving coverage of vegetation and density of weeds similar to that of the surrounding undisturbed vegetation, an external specialist shall be engaged to identify strategies for improvement.

5.3. Weed and pathogens

- As far as practicable routine maintenance work will be scheduled for the drier periods during which the risk of mud and seed retention to machinery, vehicles and boots is decreased.
- The transport of soil shall be avoided where practicable.
- When sourcing soil, priority shall be given to materials sourced from the immediate area.
- All vehicles and machinery used on unsealed roads and tracks shall be equipped with a stiff bristled brush suitable for clean down.
- Where demountable buildings are used on the pipeline corridor, as part of maintenance, the floors will be cleaned prior to entry to and upon leaving the site by brushing to ensure no foreign seeds are introduced.
- The presence of noxious weeds or suspected pathogens shall be reported to and managed in conjunction with the relevant local regulatory authority.
- Targeted weed management shall be undertaken to promote control of existing populations. This shall involve opportunistic treatment with herbicides. Records shall be retained to demonstrate implementation e.g. date, size and location of area treated.
- All herbicides shall be applied strictly in accordance with the directions on the label.

5.4. Bushfire

- Pipeline operations and maintenance shall be conducted in accordance with the requirements of regulatory and local fire authorities. In particular, operations shall comply with relevant fire restrictions, notification requirements and permitting procedures.
- Machinery and vehicles not in use shall be parked in areas of low fire risk (e.g. not parked over shrubs, tall grass or cleared vegetation residue).
- Vehicles shall be regularly checked to ensure that combustible material such as grass and debris does not build up in critical areas where ignition could occur.
- Firebreaks shall be maintained at facility sites as appropriate
- All vehicles shall be fitted with a dry chemical powder fire extinguisher. Sizes may vary from 2.5 kg to 9 kg dependent upon the vehicle size.
- Infrastructure shall be equipped with appropriate firefighting equipment.
- To prevent an accidental ignition of possible hazardous concentrations of flammable vapour or gas, appropriate precautions must be taken, including the display of suitable signs to indicate to the public the extent of any hazardous areas and/or situations.

5.5. Fauna

- Vehicle speeds shall not exceed 60 km per hour within the pipeline corridor; 80km per hour on unsealed roads; 10 km per hour within facility compounds.
- As far as practicable, restrict driving to within daylight hours and avoid driving at dusk and dawn.
- Maintenance of the corridor shall as far as practicable be undertaken in a manner to reduce impact to wildlife corridors. Wildlife habitat fragmentation effects can be minimised by maintaining tree canopy connectivity where practicable, particularly at watercourses and roadside remnants.
- Fauna shall not be fed and direct contact with fauna shall be avoided.
- All excavations left open overnight shall be inspected for trapped fauna within 3 hours of sunrise.
- All excavations shall be filled as soon as practicable.
- All excavations shall be inspected no more than half an hour prior to backfilling.
- Report all fauna injuries and fatalities as an event.
- Translocation of fauna shall be immediate, to suitable habitat at a suitable distance from disturbance and done in a manner to minimise stress to the animal (as advised by a qualified zoologist).
- Injured and orphaned animals shall be transferred to a wildlife carer where possible or euthanized where care is not available. Injured animals shall not be left to suffer.

5.6. Cultural Heritage

- All personnel working on or near an Aboriginal site shall be made aware of their responsibilities under the Aboriginal Heritage Act 1972.
- No ground disturbing activity shall be conducted outside the spatial limits of the corridor.
- Ground disturbing activities within waterways shall be avoided at all times unless no other option is available.
- Any interaction with a previously unidentified cultural site shall be recorded as an incident.
- Notify the relevant regulatory body and Aboriginal group regarding any previously unidentified potential sites encountered during works, as soon as practicable.
  All personnel shall be inducted regarding the cultural significance of ASW.

5.7. Land users

- Use of internal farm tracks or private roads must be with the agreement of individual landowners and lessees.
- Except in case of emergency or urgent maintenance, the landowner shall be notified at least 24 hours before access is required.
- All fences and markers shall be left intact and as they were found.
- Crossing points for stock and vehicle access shall be maintained as agreed with landowner.
- Stock animals are not to be unduly disturbed and gates are to be left as found.
- Waterholes and bores used for watering stock are not to be polluted or depleted.
- Other infrastructure (e.g. pumps, windmills, stock enclosures etc.) are not to be disturbed.
- New landowners shall be briefed on approved and prohibited land uses as well as the safety, emergency response and operational considerations of ASW.

5.8. Air emissions

- The planned release of gas shall be minimised.
- Whenever possible, planned gas releases shall be conducted during meteorological conditions that facilitate rapid dispersion of the gas.
- Ozone depleting substances shall not be stored or used at any time.
- Appropriate dust emission controls shall be applied during operation as necessary.

5.9. Noise

- Equipment shall be selected in consideration of its noise emissions. Where practicable, equipment should be selected that is likely to result in the lowest noise impact whilst still completing the required task.
- Equipment shall be fitted with appropriate noise abatement devices (e.g. mufflers, silencers and screens) and maintained in good working order.
- Local residents will be informed of potential noise from maintenance activities prior to the commencement of activities.
- Where practicable, excessively noisy activities shall be scheduled for periods that are less likely to result in a noise nuisance (i.e. daytime). This decision should be made in consultation with the residents.
- Report and respond to all noise complaints as an environmental incident.

5.10. Surface and Ground Water

- Water crossings shall be maintained in a stable condition.
- Appropriate approvals shall be obtained prior to the disturbance of the bed or banks of any watercourse (DoW).
- Prior to excavation within areas of a moderate – high risk of ASS, conduct a site investigation to quantify actual ASS forming material and if necessary prepare an ASS Management Plan to detail the required controls.
- Where erosion issues are identified at an existing watercourse crossing, preferred stabilisation methods shall be employed such as revegetation and installation of geofabric or organic matting.
- Where preferred stabilisation methods are not practicable or successful, alternatives such as sand bags, rock gabions and rip rap shall be employed.
- Maintenance of mobile equipment and vehicles shall not be conducted within 200 m of any permanent surface water body.
  With the exception of groundwater monitoring events, approval will be sought from DoW or relevant landholder prior to abstraction of groundwater from any bores or artificial water sources.

5.11. Acid Sulphate Soils

- Prior to excavation to a depth greater than 3m or excavation of a total of 100 m3; or dewatering, consult the GIS Environmental Database and characterise the ASS risk ranking of the proposed disturbance site.
- Where required, ASS investigations shall be conducted in accordance with Identification and investigation of acid sulfate soils and acidic landscapes.
- Where practicable, avoid disturbance in areas where ASS are identified.
- Where disturbance to identified ASS cannot be avoided, an ASS Management Plan (ASSMP) shall be prepared and submitted to the DER for approval prior to the commencement of excavation.
- Where required, the ASSMP shall be prepared in accordance with Treatment and management of soils and water in acid sulphate soil landscapes.

5.12. Hazardous Materials Storage and Handling

- All sites shall maintain a Material Safety Data Sheet Manifest and the MSDS for all stored hazardous materials shall be readily accessible.
- All chemicals used during operations shall be transported, stored, handled and disposed of in accordance the requirements of the relevant legislation and industry standards.
- All personnel involved in hazardous materials handling shall be adequately trained.
- A licensed contractor shall be sourced for the transport of Dangerous Goods where required.
- Chemical use shall be minimised where practicable.

- Hazardous materials shall be stored in containment facilities (e.g. bunded areas, leak proof trays) designed to hold 110% of the capacity of the largest container or 25% of the total, whichever is greater and be impervious to prevent the release of spilt substances to the environment.
- All equipment refuelling shall be undertaken within a bunded concrete pad.
- Additional spill containment facilities such as compacted pads or drip trays are to be provided at refuelling stations, oil and chemical storage sites and vehicle maintenance areas.
- Hazardous materials are to be provided, stored and maintained in a sealed condition, without leaks.
- Fuels and chemicals shall not be stored or handled within 200 m of natural or built waterways or water storage areas (e.g. streams, canals, dams, lakes etc.).
- A drip tray will be used at all times when re-fuelling or lubricating.
- Major servicing of plant and equipment shall be undertaken off-site in appropriately equipped areas.

5.13. Spill response

- Appropriate spill response equipment, including containment and recovery equipment, shall be available on site and in vehicles undertaking work where there is the potential for fuel or chemical spillage.
- All spills must be addressed immediately in accordance with the Spill Response Procedure (E-PRO-016).
- All contaminated material must be removed and disposed of at a licensed facility.
- Material from bunded areas is not to be buried during rehabilitation. Any contaminated material must be removed and disposed of at a licensed facility.

5.14. Waste management

- All waste shall be disposed of in accordance with signage and site specific procedures. If unsure consult your supervisor.
- All waste shall be disposed of in dedicated, labelled and lidded bins.
- Do not overfill waste bins.
- All waste will be transported to a licenced waste disposal facility.
- All general wastes, including materials such as wood, vegetation, rags, paper and putrescible waste shall be stored in dedicated waste bins and properly disposed of at a Shire or other approved waste facility.
- Recyclables shall be segregated for collection and management by a licensed contractor
- Liquid hazardous wastes solid hydrocarbon waste shall be stored in dedicated, labelled lidded 44 gallon drums stored within a hardstand area. All hazardous waste shall be collected for offsite disposal by a licenced contractor.
- Scrap metal includes pipe, structural steel and metal off-cuts, etc. Scrap metal shall be disposed of to an approved waste facility or may be returned to the Jandakot Depot for later disposal.
- A Sewage shall be treated onsite prior to disposal via spray irrigation or pumped to a septic tank where sludge is retained for collection and offsite disposal by a licenced contractor.
- A decommissioning plan shall be submitted to the DMP for review and approval prior to closure and decommissioning of ASW.

6. Environmental Management System

This chapter describes the documented systems and processes of the Environmental Management System (EMS) used for the safe construction of the Onslow Lateral. DDG adopt all DBP policies and procedures across the operation of its business. Implementation of DBP's EMS ensures that hazards are identified and assessed to eliminate or minimise the risk to the environment to a level that is As Low As Reasonably Practical (ALARP) throughout construction of the Onslow Lateral.

6.1. Induction and Training

All staff and contractors shall be required to undertake an environmental awareness induction prior to commencement of works on the Onslow Lateral. The environmental awareness induction is targeted to educate staff and contractors regarding DBP's environmental objectives and their individual responsibilities for environmental management. The environmental awareness induction covers off on the following key topics:

- Flora
- Fauna
- Weeds and pathogens
- Acid sulphate soils
- Cultural heritage
- Community and landholders
- Spill response and
- Waste management

The induction additionally ensures that all personnel are capable of implementing the JHA process to identify and manage risks.

All personnel are required to undergo refresher training once every three years. All visitors receive a site-specific induction appropriate in length and content for the type of work being undertaken.

Employees will be trained and provided with appropriate resources to ensure compliance with environmental laws, codes and standards and company policies. These additional specific training needs are addressed on an as needs basis. DBP will maintain a record of training for all personnel.

6.2. Incident Management

It is a mandatory requirement for any personnel working for or on behalf of DBP to respond to all hazards and events that have affected or have the potential to adversely affect the environment.

DBP shall ensure that all relevant parties are informed of any significant incident verbally within 2 hrs and then in writing within 3 days.

A Significant Environmental Incident is an event which:

- may but does not necessarily result in any permanent damage to the environment but requires the use of additional personnel or contractors external to the site and additional remediation equipment; or
- the regulatory authority deems as notifiable; or
- is likely to result in wide spread public complaints and anger.

6.3. Emergency Preparedness and Response

DBP has three tiers of emergency and crisis response: Incident, Emergency and Crisis. The Emergency Response Plan (ERP) provides for an Emergency Management Team (EMT) and an Incident Management Team (IMT) who are responsible for managing emergencies and minor incidents.

The contractor's local area emergency response plan specifies the assignment of particular responsibility and provisions for project related emergency response requirements and interfaces with the DBP ERP.

The Crisis Management Plan (CMP) establishes the Crisis Management Team (CMT) which is responsible for managing Crisis events, being those that are likely to be associated with personnel, public safety, supply, pipeline licence or DBP reputation issues.

In the event that an emergency deteriorates and can no longer be managed effectively by the Emergency Management Team the CMT would be activated.

6.4. Inspections and Audits

The Construction Contractor shall be responsible for conducting regular inspections against compliance with this plan. Specific monitoring requirements have been detailed where required against the relevant factor within this plan.

DBP shall conduct regular inspections of the Construction Contractor to monitor compliance against this EP. All open items from previous inspections will be checked during the next inspection to ensure remedial action has been taken, and to determine if that action has been effective. Records of all works including inspections will be maintained to demonstrate compliance with the requirements of the EP.

At a minimum of one annual environmental compliance audit shall be conducted to ensure that the systems and controls detailed within this EP are implemented.

6.5. Consultation

The purpose of consultation is to:

- Obtain appropriate input into the ongoing improvement of this EP;
- Keep key stakeholders up to date with activities at ASW;
- Ensure timely response to landholder issues; and
- Maintain dialogue with regulatory authorities, including local councils.

The consultation conducted to date with key stakeholders is outlined in Table 5-1 below.

Table 5-1 Stakeholder Consultation

Stakeholder	Date of Consultation	Items Discussed/proposed to be discussed	Outcomes
Commonwealth, State and Local Government			
Department of Sustainability, Environment, Water, Population and Communities (now DotE)	April 2013 ongoing	High level overview of WAWP provided	No issues
Office of the Environmental Protection Authority (OEPA)	April 2013 ongoing	High level overview of WAWP provided	No issues
Department of Environmental Regulation (DER) – Pilbara Regional Office	5 November 2013	High level overview of WAWP provided via email	No issues
Department of Parks and Wildlife (DPaW)	12 November 2013	High level overview of WAWP provided via phone conversation	No issues
Department of Mines and Petroleum (DMP)	August 2013 ongoing	High level overview of activity provided via presentation in person	Recognition of pending Environment Plan for assessment
Shire of Ashburton	April 2013	High level overview of activity provided	▪ Shire has a full awareness ▪ Approvals relating to construction matters will be required
Department of State Development	July 2013 ongoing	Project deliverables and timeframes	Government Major Project Status conferred on the Pipeline project
Department of Water	Ongoing	RiWI Act approval requirements	All required RiWI Act approvals are in place.
Native Title Claimant group			

Stakeholder	Date of Consultation	Items Discussed/proposed to be discussed	Outcomes
Thalanyji	July 2013	Agreement reached on NT and Heritage processes and protocols	Consultation, involvement and engagement continues
Local Landowners and Other Stakeholders			
Leaseholders for:			
Nanutarra Station – Crown Lease 155/1975	April 2013	Access arrangements	Access agreement reached
Yanrey Station – Crown Lease 54/1967	April 2013	Access arrangements	Access agreement discussions continuing
Minderoo Station – Crown Lease 56/1967	April 2013	Access arrangements	Access agreement reached
Urala Station – Crown Lease 330/1967.	April 2013	Access arrangements	Access agreement discussions continuing

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Appendix A

Environmental Aspects and Impacts Risk Register

ID	EP Reference	Activity	Potential Environmental Impact	Mitigation Measures	Consequence	Frequency	Risk
1	6.3	Vehicle usage; site access and travel.	Spreading of weeds to the detriment of native vegetation.	Induction; use of designated access tracks; maintenance of access tracks and ROW; No hygiene protection zones within ASW; works scheduled for dry periods where practicable; targeted weed management (opportunistic application of herbicides).	Minor	Occasional	Low
2	6.1, 6.2, 6.5		Bushfire caused by dry grass build up under vehicle.	Always stick to sealed roads and established tracks; always park vehicle in cleared area; inspect vehicle under body for build-up of dry material before use.	Minor	Remote	Low
3	6.7		Land holder nuisance.	Leave gates as you found them; do not interfere with stock; Maintenance of dual use access track.	Minor	Unlikely	Low
4	6.6		Disturbance to site of aboriginal significance.	Obtain approvals, Always stick to sealed roads and establish tracks; site demarcation; avoidance of demarcated sites.	Severe	Remote	Low
5	6.5		Death or injury of native fauna or livestock from collision.	Vehicles shall remain on established access tracks; Vehicle speed restrictions in place (60km/hr within pipeline corridor and 80km/hr on unsealed roads); Driver training; Driving restricted to daylight hours where practicable, Avoid driving at dawn and dusk.	Trivial	Occasional	Low
6	6.8		Dust Generation	Ensure speed limits are appropriate and being observed. Minimise vehicle movements. Dust suppression via water if available	Trivial	Occasional	Low
7	6.2	Pruning / slashing and removal of vegetation for ROW and LOS.	Damage or loss of protected flora species or habitat areas. Loss of vegetation cover.	GIS Environmental Database; Implementation of ACV system; pre-clearing checks; obtain appropriate approvals prior to clearing of any native vegetation.	Severe	Remote	Low
8	6.4		Bushfire.	Tractor fitted with spark inhibitor; fire extinguishers; observe and comply with any local fire restrictions.	Minor	Unlikely	Low

ID	EP Reference	Activity	Potential Environmental Impact	Mitigation Measures	Consequence	Frequency	Risk
9	6.12, 6.13		Failure of pressurised hose leading to contamination of local environment.	Spill response kits; regular vehicle and machinery maintenance program.	Trivial	Occasional	Low
10	6.5		Fauna strike.	Check for fauna beneath machinery prior to start up.	Trivial	Unlikely	Negligible
11	6.2		Damage to riparian ecosystem.	Hand pruning in riparian zone to the extent practicable; ACV system; Environmental GIS Database.	Minor	Unlikely	Low
12	6.5, 6.7	Pipeline inspection; Excavations.	Fauna impacts (injury/death by falling in excavations).	JHAs to include mitigation measures against fauna entrapment; landholder liaison; minimise excavation open times, inspection of excavations.	Minor	Unlikely	Low
13	6.1, 6.2		Loss of topsoil, compaction and erosion.	ROW reinstatement where required; excavation procedure; audits and inspections; topsoil stockpiled separately to subsoil; reinstatement of soil profile following excavation; topsoil ripping; soil management procedure.	Minor	Occasional	Low
14	6.1, 6.10		Erosion of or disturbance to watercourse banks.	ACV System; RiWI Act approvals as required; reduced disturbance timeframe; bank stabilisation methods; aerial surveillance; pipeline design.	Severe	Remote	Low
15	6.6		Disturbance of and / or damage to cultural heritage site or artefacts.	GIS Environmental Database; no ground disturbing activities outside spatial limits of corridor; stop work upon discovery of cultural material; cultural heritage induction of all personnel; standard operating procedures; excavation procedure	Severe	Remote	Low
16	6.11		Disturbance of Acid Sulfate Soils: Groundwater and / or surface water contamination. Damage to aquatic organisms and ecosystems.	GIS Environmental Database; ASS Management Plans;; standard operating procedures; excavation procedure.	Minor	Unlikely	Low

ID	EP Reference	Activity	Potential Environmental Impact	Mitigation Measures	Consequence	Frequency	Risk
17	6.8		Dust Generation	Ensure speed limits are appropriate and being observed. Minimise vehicle movements. Dust suppression via water if available	Trivial	Occasional	Low
18	6.2, 6.3	Weed control	Overspray resulting in damage to native vegetation.	Use of approved herbicides; correct application procedure and equipment; training in use of herbicides; No weed control on ROW;	Trivial	Unlikely	Negligible
19	6.2, 6.3 6.12, 6.13		Spill resulting in soil or water contamination	Correct storage and handling of chemicals; Spill kits	Minor	Unlikely	Low
20	6.8 ,6.9	Grit blasting/painting	Disturbance of native fauna and flora and or livestock. Disturbance of landowner. Soil, groundwater and/or surface water contamination,	Enclosed operations (if required); *EP (Abrasive Blasting) Regs*; operations during daylight hours; Standard Operating Procedures; Landholder liaison; Adequate equipment; remote area; Competent trained personnel – contractor selection process	Trivial	Occasional	Low
21	6.12, 6.13	Bulk diesel storage	Contamination of soil, ground water, surface water and impact to vegetation or fauna	Minimise volumes stored; Housekeeping checks; Spill contingency planning; adequate bunding and containment.	Severe	Unlikely	Intermediate
22	6.12, 6.13	Refuelling	Contamination of soil, ground water, surface water and impact to vegetation or fauna	No refuelling of vehicles Mobile plant - Use of drip trays unless refuelling in dedicated area; visual monitoring at all times during refuelling; spill response kits at refuelling station;	Minor	Unlikely	Low
23	6.13, 6.14	Pigging	Soil, groundwater and/or surface water contamination	Adequate facilities; collection of waste over secondary containment; defined waste disposal method; pigging procedure; no chemicals or cleaning mixtures used. Approved pigging Contractor .	Trivial	Unlikely	Negligible
24	6.13, 6.14	Waste Oil storage (	Soil, groundwater and/or surface water contamination	Adequate storage and / or bunding; network of groundwater monitoring bores; Spill contingency procedures; spill kits on site; standard handling procedures; monitoring of groundwater quality at relevant locations; contaminated site assessments conducted by BHP during establishment.	Severe	Remote	Low

ID	EP Reference	Activity	Potential Environmental Impact	Mitigation Measures	Consequence	Frequency	Risk
25	6.14	Waste disposal - general waste	Odour, Pests, Aesthetics/Visual impacts, Attraction of feral animals, hazard to livestock.	Housekeeping checks; lidded bins; signage; licenced waste collector.	Trivial	Unlikely	Negligible
26	6.12,6.14	Waste Disposal – hydrocarbon contaminated waste.	Soil, groundwater and/or surface water contamination.	Solid waste hydrocarbon bins; 205L Drums for liquid hydrocarbons Spill Kits.	Minor	Remote	Negligible
27	6.14	Waste disposal – sewage.	Soil, groundwater and/or surface water contamination, Increase in nutrient levels entering natural water systems, odour, impact to vegetation or fauna.	Housekeeping checks; Installation and maintenance of suitable and certified system; Monitoring alarms	Minor	Unlikely	Low
28	6.1, 6.2, 6.10	Existing watercourse crossings	Erosion of bank; sedimentation resulting in a decrease in water quality; cultural impacts.	Post cyclones/ severe weather inspections; monthly aerial surveillance and river crossing audit.	Severe	Remote	Low
29	6.2, 6.13	Maintenance of decommissioned infrastructure.	Contamination of soil, ground water, surface water and impact to vegetation, fauna.	Remediation of known contaminated sites (by BHP); development of decommissioning plan (when required).	Minor	Unlikely	Low
30	6.4	Pipeline operation / maintenance	Bushfire - habitat destruction, Fauna Death, Damage to Private property, Damage to Pipeline	OEMP, Safety Case; Asset Management Plan; Severe Weather Procedure; Work Instructions; DBP and Site Inductions; Fire Extinguisher training; Equipment complies with Fire safety Standards; Mobile fire equipment on all vehicles and at ASW; Designated vehicle parking; Access restricted to the ROW; Firebreaks maintained; Warning signage.	Severe	Remote	Low
31	6.13		Chemical / hazardous materials spill	Adequate containment and bunding, spill contingency procedures, standard handling and safety procedures.	Minor	Unlikely	Low
32	6.7		Third party access resulting in damage to pipeline facilities / pipeline integrity, dumping of rubbish, erosion.	Landholder liaison, aerial surveillance, gated /fenced compounds, signage.	Minor	Unlikely	Low

ID	EP Reference	Activity	Potential Environmental Impact	Mitigation Measures	Consequence	Frequency	Risk
33	6.8, 6.9	Planned Vent	Greenhouse Gas Emission Noise (Landowner disruption	Notify Local Stakeholders; GHG Monitoring and Reporting; Remote Location; Communication Work Instructions.	Minor	Occasional	Low
34	6.7, 6.8,6.9	Pipeline / Valve Failure	Greenhouse Gas Emission Noise (Landowner disruption	Notifying / Landowners; GHG Monitoring and Reporting; Emergency Response	Minor	Unlikely	Negligible
35	6.4	Pipeline Failure resulting in loss of containment resulting in fire	Bushfire	Firebreaks; SCADA monitoring; Emergency Response Procedure; AMP to ensure integrity of pipe / prevention of external interference; ASW Safety Case.	Severe	Remote	Low
36	6.12,6.13	Power generation (Accommodation camp).	Soil, groundwater and/or surface water contamination	Generator and associated fuel tanks located within secondary containment facility with 110% capacity of larges tank. Existing 35 kL tank is located in purpose built, bunded concrete pad and is maintained at 10 kL operational capacity.	Severe	Remote	Low
37	6.1, 6.2	Rehabilitation	Lack of vegetation can lead to erosion, sedimentation, visual amenity and alterations in hydrological regimes. Disturbance to existing vegetation and fauna habitats.	GIS, signage excluding access to sites under rehabilitation, rehabilitation measurement criteria.	Minor	Unlikely	Low