Australian Gas Infrastructure Group

Onslow Lateral

Operations ENVIRONMENT PLAN

PUBLIC SUMMARY DOCUMENT

REVISION 1

October 2017

DOCUMENT CONTROL

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0	AUG-17	Issued for Regulatory Approval
1	OCT-17	Minor changes on DMIRS feedback

	Title
Author	Senior HSE Advisor
Reviewed	Project Manager
Approved	HSE Manager

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1. Introduction

1.1. Background

DDG Ashburton Pty Limited is the licence holder for PL110, the Onslow Lateral pipeline that completed in construction in 2016. The Onslow Lateral connects the DBNGP through the Ashburton West Facility (ASW) to a meter station located next to a yet to be constructed Power Station (Horizon Power) approximately 15kms south of Onslow.

The Onslow Lateral is a 24km pipeline that runs east west between the ASW and the meter station.

The *Petroleum Pipeline (Environment) Regulations 2012* (PPE Regs) require the development and implementation of an Environment Plan (EP) to the satisfaction of the Department of Mines, Industry Regulation and Safety (DMIRS). The Onslow Lateral Operations Environment Plan (OL OEP) has been prepared to satisfy this requirement. This EP also superseded the Construction Environment Plan for the Onslow Lateral (Onslow Lateral-5575-0701-05). Any conditions outstanding (such as rehabilitation) from the Construction Plan have been included in this plan to ensure close out of actions required.

The object of this document is to provide a succinct and publically available summary of the DMIRS approved Onslow Lateral Operations EP (Revision 0) as required under regulation 11(7) of the Regulations.

1.2. Proponent

DDG Ashburton Pty Limited (68 169 157 242) is the instrument holder of PL110 (Onslow Lateral) with DDG Operations Pty Limited (76 166 900 170) as the nominated operator for the pipeline.

DDG is 100% owned by a consortium comprising CK Infrastructure Holdings Limited (**CKI**), Cheung Kong Property Holdings Limited (**CKPH**) and Power Asset Holdings Limited (**PAH**) (refer Figure 1-2). CKI, PAH and CKPH are members of the Cheung Kong Group, a large privately owned, Hong Kong public listed global group with investments in energy infrastructure in developed countries around the world.

DDG Operations Pty Limited rely 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 the Onslow Lateral may be directed to DDG via:

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landmanagement@dbp.net.au

Figure 1-1 Overview Map

2. Existing Environment

2.1. Climate

The Onslow Lateral 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 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 0.7mm in October to 67.4mm in February. The average annual total rainfall for Onslow is 291.9mm (BOM 2012).

The region experiences on average two cyclones per year, with the 'cyclone season' extending from December to April. Cyclones typically approach from the north east and either remain offshore or turn southwards to cross the mainland coast between Dampier and the North West Cape.

2.2. Geology

The Onslow Lateral is situated within the Coastal Plains Geomorphic Province which is characterised by extensive sandy plains with north-west or north trending longitudinal dunes, broad clay-pans and circular grassy depressions. Natural relief across the province rarely exceeds 40m above the surrounding plains and occurs in the form of dune crests and isolated hills.

The Coastal Plains Geomorphic Province is dominated by the Coastal Plains Soil Region. This soil region consists of eight broad units including skeletal soils, stony plains, sandy plains, sand dunes, drainage floors, clay-pans, swamps and depressions, and coastal mud flats.

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. Rangeland surveys carried out indicate soils on the Onslow Coastal Plain tend to be low in nitrogen and phosphorus (Payne et al., 1988, in DDG 2013).

2.3. Flora

In association with construction of the WAWP, a Level 1 flora survey was conducted over the area comprising KP0-KP15 of the Onslow Lateral (Matttiske 2013). In March 2014, DDG commissioned a Level 1 flora survey of the remainder of the Onslow Lateral construction corridor (KP15-KP24) (Mattiske 2014).

No Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) as defined by the Department of Parks and Wildlife (DPaW) or listed under the EPBC Act were recorded within the Construction Corridor. No Declared Threatened Flora species as listed by DPaW under Schedule 1 of the WA *Wildlife Conservation Act 1950* (WC Act) were recorded within the Construction Corridor. No Declared Threatened Flora species pursuant to subsection (2) of s.23F of the WC Act and as listed by the DPaW (2014a) were recorded within the Construction Corridor.

One Priority Flora species pursuant to subsection (2) of s.23F of the WC Act and as listed by the DPaW (2014a) has been recorded within the Construction Corridor, namely Eremophila forrestii subsp. viridis (P3).

2.4. Fauna

In association with construction of the WAWP, a Level 1 fauna survey was conducted over the area comprising KP0-KP15 of the Onslow Lateral (Ninox 2013). In March 2014, DDG commissioned a Level 1 fauna survey of the remainder of the Onslow Lateral construction corridor (KP15-KP24) (Ninox 2014). Conservation significant species identified on the databases as having a moderate to high likelihood of occurring within the vicinity of the Construction Corridor include:

- Northern Quoll (Dasyurus hallacatus)
- Great / White Egret (Ardea alba)
- Common Greenshank (Tringa nebularia)
- Cattle Egret (Ardea ibis)

- Oriental Plover (Charadrius veredus)
- Eastern Great Egret (Ardea modesta)
- Rainbow Bee-eater (Merops ornatus)
- Barn Swallow (Hirundo rustica)
- Fork-tailed Swift (Apus pacificus)
- Australian Bustard (Ardeotis australis)
- Pilbara Olive Python (Liasis olivaceus)
- Common Sandpiper (Actitis hypoleucos)
- Oriental Pratincole (Glareola maldivarum)
- Osprey (Pandion haliaetus)
- White-bellied Sea-eagle (Haliaeetus leucogaster)
- Peregrine Falcon (Falco peregrinus)

2.5. Hydrology and Hydrogeology

The Ashburton River is an intermittent watercourse that travels in a northwest direction and meanders through extensive flood plains between Nanutarra and Onslow. The river is characterised by long dry periods and with irregular significant flow events resulting from high intensity rainfall events. On average, flows occur in the Ashburton River every one to three years. River flows predominantly occur during the wet season (October to March) and are typically short-lived (AECOM 2010). The region usually experiences a dry season during the months March to September.

Quick Mud Creek, located at KP23.3, has characteristics similar to the Ashburton River, though on a smaller scale, and for environmental impact management purposes will be treated in a similar manner.

The Construction Corridor does not intersect any conservation significant wetlands or drainage lines.

2.6. Community

The Construction Corridor falls within the Shire of Ashburton Local Government Area, which spans approximately 105,647 km^2 and has a population of approximately 10,000 (ABS, 2013). Onslow is the closest major town located 16km north of the project.Major industries include mining, pastoralism and fishing.

The Construction Corridor traverses two pastoral leases - Minderoo and Urala Stations. DDG have land access arrangements in place with both stations to access the existing easement (KP 0-15) for construction of the AOGP. A land access agreement for KP15 -24 is also in place with LandCorp to access and commence construction within the LandCorp owned Muilti-User Infrastructure Corridor.

2.7. Cultural heritage

Although Native Title has been extinguished over the pipeline route, DDG acknolwedges a connection of the Thalanyji group to the subject land. During on ground surveys conducted in conjuntion with the Thalanyji group, no sites of cultural signfiance were identified.

3. Activity Description

The objective of this section is to comprehensively describe the facilities and activities undertaken in association with operation and maintenance of the Onslow Lateral.

- 24km long 4” diameter pipeline connecting ASW Facilities to the site of the proposed new Onslow Power Station adjacent to the intersection of Onslow Road and the Wheatstone Road;
- Tie in at ASW Facilities;
- Pig receiver facilities, either permanent or temporary;
- Onslow Meter Station at the site of the proposed Power Station.

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

- Access and Land Use;

- Pipeline Corridor Access;
- Non-intrusive survey and inspections;
- Vegetation management to meet AS2885 requirements;
- Pipeline operation and maintenance; and
- Minor earthworks.

4. Implementation Strategy

In order to identify, understand and manage all environmental sources of risk and consequent impacts associated with the operations of the Onslow Lateral a comprehensive Environmental Risk Assessment (ERA) was conducted. The ERA included a multidisciplinary team of in house personnel following a structured process which sought to:

- Outline key construction 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 sections set out the key control measures estbalished to manage risks identified during the ERA.

4.1. Soils 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. temporary erosion control berms, drains and sediment barriers shall be installed as necessary).
- Windrows shall not block surface water flows or re-direct flows resulting in erosion and sedimentation.
- Where the pipeline is likely to affect or be affected by gully erosion, stabilization works including diversion structures may be required.
- Although not expected during normal maintenance activities, any soil stockpiled as a result of clearing activities (including topsoil and subsoil) will be stored in stockpiles <2m in height and restored to maintain existing profile.

4.2. Flora

- Maintain a GIS Environmental Database to present up to date available information regarding the location of conservation significant and environmentally sensitive areas and related approval areas (i.e. clearing permits).
- 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.
- When undertaking line of sight clearing, vegetation slashing will be at the maximum height above ground level practicable (standardly 200 mm).
- Trees further than 3 m from the pipeline shall not be removed unless the root system has encroached or is likely to encroach on the pipeline. Any trees greater than 3m with roots encroaching on the pipeline shall undergo review for either root trimming or removal.
- Access tracks shall be kept navigable by pruning of overhanging branches and slashing where necessary (up to max 3m height) or as required to maintain safe access.
- The width of access tracks shall be maintained no wider than 5m.

- Vehicles shall remain on established access tracks, unsealed roads, and sealed roads at all times, except in case of emergency and/or pipeline inspections that require vehicle access off the established routes.
- Areas of vegetation disturbance not required for future operational use shall be rehabilitated through re-spreading and ripping of salvaged topsoil.
- Access shall be restricted in areas subject to rehabilitation.
- Vegetation shall not be burned.

4.3. Weeds

- The transport of soil shall be avoided where practicable.
- When sourcing soil, priority shall be given to materials sourced from the immediate area.
- Any imported soil shall be certified as free of weed and pathogens. Records shall be kept of the origin of any imported fill used.
- All vehicles and machinery used on unsealed roads and tracks shall be equipped with a stiff bristled brush suitable for clean down.
- Maintain the access track quality to minimise the risk of spread of weeds when travelling down the right of way.
- Any suspected infestation of weed species shall be reported to the Senior HSE Advisor.
- 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 kept of the date and location of the area treated.
- All herbicides shall be applied strictly in accordance with the directions on the label or as per best practice guidelines.

4.4. 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.
- All equipment shall comply with relevant fire safety standards (e.g. use of exhaust spark inhibitors).
- 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).
- Firebreaks shall be maintained at facility sites.
- All fires must be immediately reported to a supervisor.
- All vehicles shall be fitted with a dry chemical powder fire extinguisher.
- Relevant personnel shall be trained in the use of fire fighting 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.
- The following is prohibited in hazardous areas:
    - smoking
    - the presence of matches, lighters and naked flame
    - the access of any sources of ignition to the area (eg. spark-ignition engines, motor vehicles etc.).
- Open fires (barbecues, campfires, rubbish or brush burning) are prohibited at all times.

4.5. 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.

- As far as practicable, and subject to the vegetation management requirements of AS2885.3, avoid disturbance to trees (living or dead) with large hollows as these provide valuable fauna habitat.
- Fauna shall not be fed and direct contact with fauna shall be avoided.
- Pets shall be prohibited on site
- Should excavation be required as part of the maintenance of the pipeline, a JHA shall be undertaken and appropriate measures to mitigate impacts to fauna considered and implemented varying as necessary to address the significance of the adjacent environment.
- All excavations left open overnight shall be equipped with exit ramps and fauna shelters (i.e. hessian bags).
- All excavations left open overnight shall be inspected for trapped fauna within 3 hours of sunrise and immediately prior to leaving site.
- 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 licensed fauna handler or a qualified zoologist). Where possible, a qualified fauna handler shall be used to conduct any fauna handlings.
- 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, entrapment and fatalities as an event.

4.6. 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.
- Particular care shall be taken to ensure that no pollution or littering occurs within waterways.
- If a previously unidentified cultural site is identified, the following must be undertaken:
    - stop all work within 30 m of potential Heritage site
    - report the location and nature of the site to the Senior HSE Advisor
    - establish a 30 m buffer around the site, outside which work may continue.
- 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.

4.7. 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.
- Except in case of emergency or urgent maintenance, Residents and landowners will be notified a minimum of 7 days prior to commencing earthworks.
- Vehicle speeds shall not exceed 60 km per hour within the pipeline corridor and 80km per hour on unsealed roads.
- 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.
- Public access to Onslow Lateral shall not be permitted unless that right already exists.

4.8. 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.
- Residents, landowners and appropriate authorities shall be advised of a pending major venting operation prior to undertaking the activity.
- Odourisation of the gas (i.e. mercaptan dosing) capability exists at ASW for the Onslow Lateral. When working on the odorant system appropriate notifications shall be undertaken (e.g. Landholder)
- Document the scale, conditions and justification for all unplanned and planned gas releases.
- Maintain decommissioned and operating infrastructure as required by the Asset Management Plan to promote efficiency and prevent unnecessary emissions.
- Appropriate dust emission controls shall be applied during operation as necessary. If dust problems still occur at particular sections of the pipeline corridor, the following measures shall be adopted as appropriate:
- Revegetate using existing species and prevent access until the vegetation is established.
- Ensure speed limits are appropriate and being observed.
- Minimise vehicle movements.
- Use geotextiles, hessian or mulched vegetation on localised areas.
- If available, spray water on the problem areas.
- Ozone depleting substances shall not be stored or used at any time.

4.9. 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.
- 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.

4.10. 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).
- Maintain a GIS Environmental Database to present the location of all adjacent watercourses enabling identification of all infrastructure watercourse crossings.
- Maintain a GIS Environmental Database to present up to date available information regarding the location of potential Acid Sulphate Soil risk areas.
- Within areas of a moderate – high risk of ASS, conduct an ASS investigation prior to conducting the works if those works will either disturb more than 100m3 of soil or require dewatering and if necessary prepare an ASS Management Plan to detail the required controls.
- Where existing pipeline infrastructure crosses watercourses, monitoring and maintenance shall be undertaken to ensure structural stability is maintained.
- 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.
- During any maintenance work on watercourse crossings erosion control measures shall be installed as required.
- Maintenance and major works on watercourse crossings shall be avoided during the cyclone season (where relevant).
- Maintenance of mobile equipment and vehicles shall not be conducted within 200 m of any permanent surface water body.

4.11. Acid Sulfate Soils

- Maintain a GIS Environmental Database to present the DEC ASS Risk Map.
- 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.
- Within areas of a moderate – high risk of ASS, conduct an ASS investigation prior to conducting the works if those works will either disturb more than 100m3 of soil or require dewatering.
- Within areas of a low - moderate risk of ASS, conduct an ASS investigation prior to conducting the works if those works will either involve lowering of the water table, extend beyond 3 m below the natural ground surface or occur within 500 m of wetlands.
- Where required, ASS investigations shall be conducted in accordance with Identification and investigation of acid sulfate soils and acidic landscapes (DEC, 2013).
- Where an ASS Investigation discovers the presence of ASS, then an ASS Management Plan (ASSMP) shall be developed and implemented on the project.
- Where required, the ASSMP shall be prepared in accordance with Treatment and management of soils and water in acid sulphate soil landscapes (DEC 2011).

4.12. 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.
- The minimum practicable volume of chemicals shall be stored on-site.
- 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 or with a portable drip tray.
- 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.
- Hazardous materials shall be stored in labelled and lidded containers.

4.13. 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 Prevention and Response Procedure (DBP 2012) and the Onslow Lateral Oil Spill Contingency Plan
- Spills shall be stopped at source as soon as practicable.
- Spilt material shall be contained to the smallest possible area.
- Spilt material shall be recovered as soon as possible, using appropriate equipment.

4.14. Waste Management

- All waste shall be disposed of in dedicated, labelled and lidded bins.
- All waste will be transported to a licensed waste disposal facility.
- All general wastes, including materials such as wood, vegetation, rags, paper and domestic scraps shall be properly disposed of at a Shire or other approved waste facility.
- Good housekeeping shall be maintained at all times.

- Disposal of any chemical shall be in compliance with approved industry codes of practice, relevant safety guidelines and Australian Standards.
- Chemical wastes, waste oils and solvents and other toxic material shall be stored in a labelled, lidded container within a bunded area for collection and offsite disposal by a licensed contractor.
- Scrap metal shall be stockpiled separately for salvaging or recycling.
- Pigging product shall be captured in labelled containment vessels and disposed as used oil by a licensed contractor.

5. 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.

5.1. 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.

5.2. 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.

5.3. 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.

5.4. 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.

5.5. Consultation

The purpose of consultation is to:

- Keep key stakeholders up to date with proposed activities
- Obtain appropriate input into the ongoing improvement of activities
- Ensure timely response to landholder issues
- Maintain dialogue with regulatory authorities

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

Table 5-1 Stakeholder consultation progressed to date

Stakeholder	Date of Consultation	Items Discussed/proposed to be discussed	Outcomes
DMP – now DMIRS	May 2014 ongoing	High level overview of activity provided. Advised of pending Pipeline Licence Application and Construction Environment Plan for DMP approval.	No issues raised. DMP advised DDG to refer to statutory assessment timeframes when developing project schedule.
DER – now DWER	April 2015	Relocation of project footprint and requirement for NVCP amendment	Assessment complete and approval received
DoW – now DWER	July 2014	High level overview of activity provided.	No issues raised, discussions ongoing regarding approvals.
	August 2014	Lodgement of Section 17 application to interfere with bed and banks of the	Confirmation that s17 permit is not required for HDD crossings

Stakeholder	Date of Consultation	Items Discussed/proposed to be discussed	Outcomes
		Ashburton River and Quick Mud Creek	(i.e. Quick Mud Creek). No further issues raised,
DAA	April 2015	Survey of revised footprint in accordance with existing Heritage Agreement.	No issues raised, discussions ongoing.
Department of State Development	May 2014 ongoing	Project deliverables and timeframes.	Advice received on land and cultural heritage issues.
Thalanyji / BTAC	July 2014	High level overview of activity provided.	Agreement reached on cultural heritage processes and protocols.
	August 2014	Extension of AH agreement to cover pipeline route. Cultural Heritage survey completed.	Native Title extinguished over pipeline route. No heritage sites identified during survey.
		Discussion regarding revised footprint.	Survey of revised footprint in accordance with existing Heritage Agreement.
LandCorp	May 2014 ongoing	Consultation on access, tenure and pipeline installation.	An easement has been negotiated and subject only to final sign off. Permission to clear within NVCP Application Area granted.
Minderoo	September 2014, 2016. 2017	Pastoralist has been advised of activities proposed within the existing approved pipeline easement.	No issues raised. Sub lease of Urala Station to Minderoo (July 2017)
Urala	September 2014	Pastoralist has been advised of activities proposed within the existing approved pipeline easement. 2016 – Construction of final sections of Onslow Lateral 2017 – Commissioning of Onslow Lateral schedule within ASW compound	No issues raised.

6. References

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Department of Parks and Wildlife (2014a) Western Australian Flora Statistics, viewed 8thMay http://florabase.dpaw.wa.gov.au/statistics/. In Mattiske 2014.

Mattiske (2013) Flora and Vegetation of the CS2 – Tubridgi – Wheatstone Gas Pipeline Project Area, unpublished report prepared for DBP by Mattiske Consulting Pty Ltd, April 2013. From DDG 2013

Mattiske (2014) Level 1 Flora and Vegetation Survey of the Onslow Lateral Pipeline (OLP Project Area. Prepared for LogiCamms by Mattiske Consulting Pty Ltd, May 2014

Ninox (2013) A Level 1 Vertebrate Fauna Assessment of the Proposed Tubridgi to Wheatstone Gas Pipeline, Western Australia, unpublished report prepared for Mattiske Consulting Pty Ltd by Ninox Wildlife Consulting, April 2013.

Ninox (2014) A Level 1 Vertebrate Fauna Assessment of the Proposed Onslow Lateral Pipeline, Western Australia, unpublished report prepared for Mattiske Consulting Pty Ltd by Ninox Wildlife Consulting, May 2014.

Payne, AL, Mitchell, AA and Hoffom, AF (1988) An inventory and condition survey of rangelands in the Ashburton River Catchment, Western Australia, Western Australian Department of Agriculture, Technical Bulletin no.62. In Mattiske 2014.

APPENDIX A

Onslow Lateral Construction Environmental Aspects and Impacts Register

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	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; Awareness of hygiene protection zones within Onslow Lateral RoW; works scheduled for dry periods where practicable; targeted weed management (opportunistic application of herbicides). Weed washdown bay in ASW facilities if required Targeted Mesquite weed program where possible in conjunction with PMMC.	Major	Occasional	High	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.	Major	Occasional	High	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	Occasional	Low	Minor	Unlikely	Low
4	6.6		Disturbance to site of aboriginal significance.	Obtain approvals, Always stick to sealed roads and established tracks; site demarcation; avoidance of demarcated sites.	Severe	Occasional	Int	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.	Severe	Occasional	Int	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	Minor	Frequent	Int	Trivial	Occasional	Low

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
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.	Major	Occasional	High	Severe	Remote	Low
8	6.4		Bushfire.	Tractor fitted with spark inhibitor; fire extinguishers; observe and comply with any local fire restrictions.	Major	Occasional	High	Minor	Remote	Neg
9	6.12, 6.13		Failure of pressurised hose leading to contamination of local environment.	Spill response kits; regular vehicle and machinery maintenance program.	Minor	Occasional	Low	Trivial	Occasional	Low
10	6.5		Fauna strike.	Spotter to check trees, heavy shrubs prior to any slashing for signs of fauna.	Minor	Occasional	Low	Trivial	Unlikely	Negl
11	6.2		Damage to riparian ecosystem. (Quick Mud Creek, Ashburton River)	Hand pruning in riparian zone to the extent practicable; ACV system; Environmental GIS Database.	Major	Occasional	High	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.	Severe	Occasional	Int	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.	Severe	Occasional	Int	Minor	Occasional	Low

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
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	Occasional	Int	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	Major	Occasional	High	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.	Major	Occasional	High	Minor	Unlikely	Low
17	6.8		Dust Generation	Ensure speed limits are appropriate and being observed. Minimise vehicle movements. Dust suppression via water if available	Minor	Frequent	Int	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; Targeted weed management programs (Declared weeds);	Minor	Occasional	Low	Trivial	Unlikely	Neg
19	6.2, 6.3 6.12, 6.13		Spill resulting in soil or water contamination	Correct storage and handling of chemicals; Spill kits	Severe	Unlikely	Int	Minor	Remote	Neg

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
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,	Minimise need for any abrasive blasting; 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	Severe	Occasional	Int	Trivial	Occasional	Low
21	6.12, 6.13	Odorant storage / refill and 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; neutralising agent on hand at all times. Distance from sensitive receptors	Severe	Unlikely	Int	Severe	Remote	Low
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.	Severe	Occasional	Int	Minor	Unlikely	Low
23	6.13, 6.14	Pigging (every 10 years)	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.	Severe	Unlikely	Int	Trivial	Remote	Neg
24	6.13, 6.14	Waste Oil storage (not expected – temporary only)	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; removed from site ASAP.	Severe	Unlikely	Int	Minor	Remote	Low
25	6.14	Waste disposal - general waste (no waste bins onsite for Onslow Lateral)	Odour, Pests, Aesthetics/Visual impacts, Attraction of feral animals, hazard to livestock.	Remove all wastes on exit from site. Shared facilities with Tubridgi	Severe	Occasional	Int	Trivial	Unlikely	Neg

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
26	6.12, 6.14	Waste Disposal – hydrocarbon contaminated waste.	Soil, groundwater and/or surface water contamination.	No expected wastes onsite, removal all wastes on exit from site. Spill Kits.	Severe	Unlikely	Int	Minor	Remote	Neg
27	6.14	Waste disposal – sewage. (no credible cause)	Soil, groundwater and/or surface water contamination,	Housekeeping checks; Installation and maintenance of suitable and certified system; Monitoring alarms	No credible cause					
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	Frequent	High	Severe	Remote	Low
29	6.2, 6.13	Working around decommissioned infrastructure.	Contamination of soil, ground water, surface water and impact to vegetation, fauna.	Inspection of hazards	Severe	Occasional	Int	Trivial	Remote	Neg
30	6.4	Pipeline operation / maintenance	Bushfire - habitat destruction, Fauna Death, Damage to Private property, Damage to Pipeline	Safety Case; Asset Management Plan; Severe Weather Procedure; Work Instructions; DBP and Site Inductions; ACV; Fire Extinguisher training; Equipment complies with Fire safety Standards; Mobile fire equipment on all vehicles; Designated vehicle parking; Access restricted to the ROW; Firebreaks maintained; Warning signage.	Major	Unlikely	High	Severe	Remote	Low
31	6.13		Chemical / hazardous materials spill	Adequate containment and bunding, spill contingency procedures, standard handling and safety procedures; neutraliser for odorant spills; foam extinguishers.	Severe	Unlikely	Int	Minor	Unlikely	Low
32	6.7		Third party access resulting in damage to pipeline facilities / pipeline integrity,	Landholder liaison, aerial surveillance, gated /fenced compounds, signage.	Major	Occasional	High	Minor	Unlikely	Low

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
			dumping of rubbish, erosion.							
33	6.8, 6.9	Planned Vent (pigging)	Greenhouse Gas Emission Noise (Landowner disruption	Notify Local Stakeholders; GHG Monitoring and Reporting; Remote Location; Communication Work Instructions.	Severe	Occasional	Int	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; infrequent event – minimise activity	Major	Unlikely	High	Minor	Remote	Neg
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; Safety Case.	Major	Unlikely	High	Severe	Remote	Low
36	6.12, 6.13	Power generation	Soil, groundwater and/or surface water contamination	Small generator for use only temporarily and not stored onsite.	Minor	Unlikely	Low	Trivial	Remote	Negl
37	6.1, 6.2	Rehabilitation	Lack of vegetation can lead to erosion, sedimentation, visual amenity and alterations in hydrological regimes. Disturbance to existing	GIS, signage excluding access to sites under rehabilitation, rehabilitation measurement criteria.	Severe	Occasional	Int	Minor	Unlikely	Low

ID	EP Ref	Activity	Potential Environmental Impact	Mitigation Measures	Inherent			Residual		
					Consequence	Frequency	Risk	Consequence	Frequency	Risk
			vegetation and fauna habitats.							