Pilbara Pipeline System

PEPL Relocation Project

CONSTRUCTION ENVIRONMENTAL PLAN

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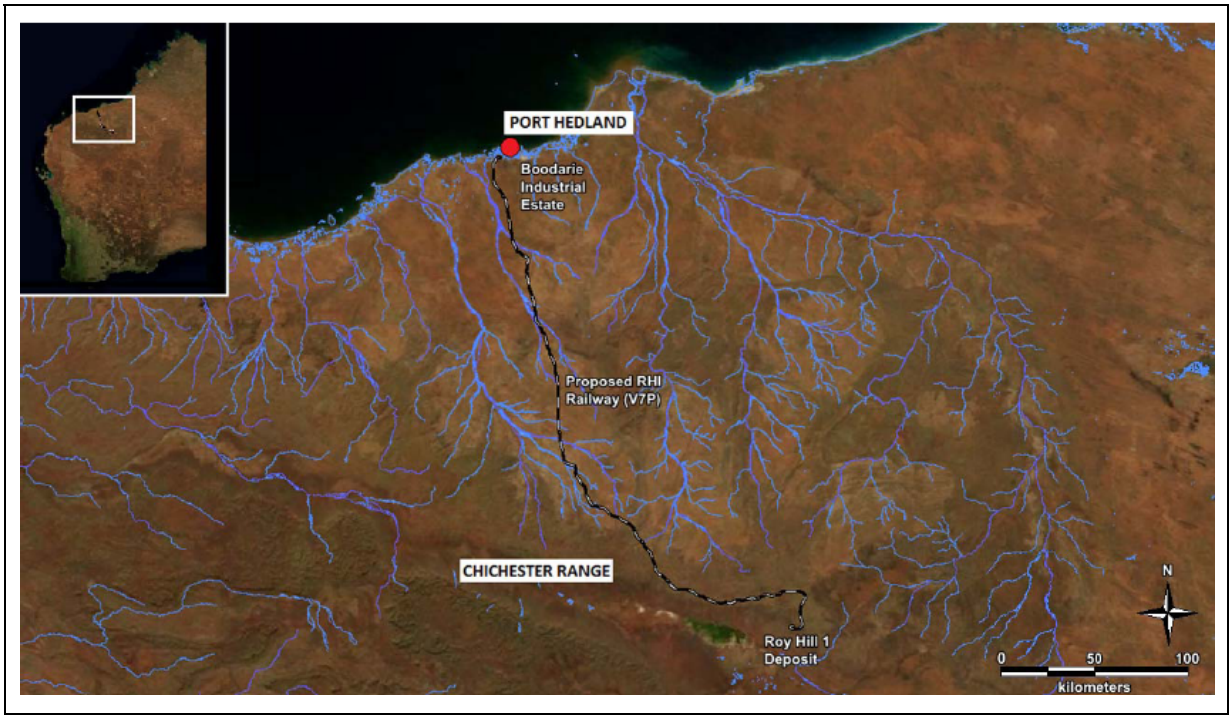
1 Introduction

The Roy Hill Iron Ore Project includes a new iron ore mine at the Roy Hill deposit, a mine process plant, a new port facilities at Boodarie Industrial Estate and a heavy haul railway system from mine to port, southwest of Port Hedland, Western Australia.

The proposed single-track, heavy haul railway is approximately 340 km in length from the Roy Hill mine site to the unloading facility at Boodarie Industrial Estate, as depicted in Figure 1.

Figure 1: Proposed Roy Hill Rail Corridor



A portion of the proposed railway line will cross over the existing Pipeline Licence 22 Pilbara Energy Pipeline (PEPL). This has made it necessary for the relocation of approximately 670 m of pipeline, which is currently buried at a depth of between 750-1400 mm. It is necessary to relocate the pipeline at a depth of approximately 9 m to enable the rail construction and operation in accordance with Australian standards.

Epic Energy (Epic) is facilitating this process, and this project is known as the “PEPL Relocation Project”. Epic is the owner and operator of the PEPL and will be carrying out construction of this project.

It is necessary that the PEPL Relocation Project is completed prior to the construction of the railway. Based on this, plans are to carry out construction between May and November 2013. During the period of construction and connection the PEPL shall remain in commercial service.

1.1 Purpose

This Construction Environmental Plan (CEP) pertains to all activities covered in the Pipeline Relocation Project. This document details the management and mitigation strategies in order to minimise potential environmental impacts resulting from construction activities. The commitments contained in this CEP are applicable to all Epic personnel and contractors associated with Project activities.

This CEP has been completed to ensure compliance with the *Petroleum Pipelines Act 1969, Petroleum Pipelines (Environment) Regulations 2012* and the Pipeline Licence 22 (PL22).

This CEP does not cover operational or maintenance activities for the PEPL. These aspects are described in the Pilbara Pipeline System Environmental Management Plan - Operations (please refer to document no: W-0-TYP-ER-G-001).

1.2 Abbreviations and Definitions

ADT	Articulated Dump Trucks
AS/NZS	Australian Standard/New Zealand Standard
DBNGP	Dampier Bunbury Natural Gas Pipeline
DEC	Department of Environment and Conservation
DMP	Department of Mines and Petroleum
DOW	Department of Water
EMS	Environmental Management System
CEP	Construction Environmental Plan
EP Act	Western Australian *Environmental Protection Act 1986*
EPBC Act	Commonwealth *Environment, Protection and Biodiversity Conservation Act 1999*
Epic	Epic Energy
FCT	Floristic Community Types
GIS	Geographical Information System
HSE	Health, Safety and Environment
JHA	Job Hazard Analysis
LGA	Local Government Authority
MSDS	Material Safety Data Sheet
PEPL	Pilbara Energy Pipeline
PIO	Permit Issuing Officer
PPS	Pilbara Pipeline System
PEC	Priority Ecological Communities
Project	PEPL Relocation – Roy Hill Infrastructure Project
RHI	Roy Hill Infrastructure
ROW	Right of Way
TEC	Threatened Ecological Communities

2 Legislative Framework Requirements

This CEP aims to ensure that the construction of the Project is performed in a manner consistent with applicable legislation, regulations and codes of industry practice. The following sections outline the key Acts and Codes within the Commonwealth, Western Australia and Australian Standards and Industry Codes. The Project will comply with all relevant new legislation and regulations when they come into force.

2.1 Commonwealth Legislation

The relevant Commonwealth Legislation includes, but is not limited to the following:

- Environmental Protection and Biodiversity Conservation Act 1999; and
- Native Title Act 1993.

2.2 Western Australian Legislation

The relevant Western Australian legislation includes, but is not limited to the following:

- Aboriginal Heritage Act 1972;
- Bushfires Act 1954
- Conservation and Land Management Act 1984;
- Contaminated Sites Act 1986;
- Dangerous Goods Safety Act 2004;
- Environmental Protection Act 1986;
- Environmental Protection Regulations 1987;
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004;
- Environmental Protection (Controlled Waste) Regulations 2004;
- Environmental Protection (Noise) Regulations 1997;
- Environmental Protection (Abrasive Blasting) Regulations 1998;
- Explosives and Dangerous Goods Act 1961;
- Health Act 1911;
- Heritage of Western Australian Act 1990;
- Land Administration Act 1997;
- Wildlife Conservation Act 1950; and
- Local Government Main Roads Act 1930
- Petroleum Pipelines Act 1969;
- Rights in Water and Irrigation Act 1914;
- Soil and Land Conservation Act 1945;
- Petroleum Pipelines Act 1969; and
- Petroleum Pipelines (Environmental) Regulations (2012).

2.3 Australian Standards & Industry Codes

In addition to Legislative requirements, this CEP has given consideration to relevant Australian and Industry standards, including:

- AS 2885.0–2008: Pipelines – Gas and Liquid Petroleum - General Requirements;
- AS 2885.1-2012: Pipelines – Gas and Liquid Petroleum – Design and Construction;
- AS 2885.2-2007: Pipelines – Gas and Liquid Petroleum – Welding;
- AS 2885.3-2012: Pipelines – Gas and Liquid Petroleum – Operation and Maintenance;
- AS 2885.5-2012: Pipelines – Gas and Liquid Petroleum – Field Pressure Testing;
- AS 1678: Emergency Procedure Guides;

- AS 1940: Storage and Handling of Hazardous Substances;
- APIA Code of Environmental Practice Onshore Pipelines 2009;
- National Code of for the Control of Workplace Hazardous Substances [NOHSC: 2007(1994)];
- National Code of Practice for the Labelling of Workplace Substances [NOHSC: 2012(1994)];
- National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC: 2011(1994)]; and
- National Environment Protection Measures – National Pollutant Inventory.

2.4 Summary of Legislative Requirements

A summary of the legislation requirements for the Roy Hill Project are shown in the Table below.

Table 1: Summary of Key Legislative Requirements

Approval	Agency	Act or Regulation	WA / Cth	Comments
Pipeline Licence - Variation	Department of Mines and Petroleum	Petroleum Pipelines Act 1969	WA	PL22 Variation (STP-PLV-0023) granted 14 December 2012
Approval to Proceed	Department of Sustainability, Environment, Water, Population and Communities	Environmental Protection and Biodiversity Conservation Act 1999	Cth	In progress
Groundwater Abstraction Licence	Department of Water	Rights in Water and Irrigation Act 1914	WA	Not required
S18 Consent to Disturb	Department of Indigenous Affairs	Aboriginal Heritage Act 1972	WA	Not required
Assessment Level Determination	Department of Environment & Conservation	Environmental Protection Act 1986	WA	In progress
Section 91 Licence	Department of Regional Land Administration	Land Administration Act 1997	WA	In progress
Native Vegetation Clearing Permit	Department of Mines and Petroleum	Environmental Protection (Clearing of Native Vegetation) Regulations 2004	WA	In progress

3 Environmental Management Framework

To fulfil the requirements of the Epic Energy Environmental Management Framework, construction of the project must ensure that:

- Activities are conducted in accordance with relevant regulatory and corporate obligations;
- The concerns of the community and impacted landholders are considered and addressed;

- Appropriate environmental investigations are completed to identify potential environmental impacts as a result of the operation;
- Measures are implemented during operational activities to minimise potential environmental impacts;
- Control measures are developed and documented for all activities considered to have a potentially significant impact on the environment; and
- Responsibilities for the implementation of environmental control measures are defined for the entire life of a pipeline.

3.1 Environmental Management System

The Epic Energy Environmental Management System (EMS) is a key tool in managing the environmental responsibilities, issues and risks associated with Epic Energy's activities. The EMS integrates the management of environmental issues from top management to the project site. The EMS is comprised of an EMS Manual (E-00-000-EMS-G-001) and a number of supporting documents including registers, procedures, work instructions, guidelines and management plans.

Epic Energy's EMS includes the following elements:

- A corporate policy stating Epic Energy's commitment to conduct activities in an environmentally responsible manner.
- Clearly stated environmental objectives.
- Practical procedures to achieve environmental objectives.
- Clearly defined responsibilities for personnel to indicate their obligations regarding environmental management.
- Appropriate induction and training of personnel.
- An auditing program to assess compliance with procedures and the achievement of objectives.
- A system of reporting for recording of data, performance monitoring and notification of relevant personnel.
- Ongoing consultation and communication to seek input from, and to inform, all parties of relevant issues.

These system elements are discussed further in the sections that follow.

3.2 Environmental Policy

All construction activities for the PEPL Relocation Project will be conducted in accordance with Epic Energy's Environmental Policy (Attachment 1), which outlines the company's commitment to environmental management.

3.3 Environmental Objectives

Environmental objectives for the PEPL Relocation – Roy Hill Infrastructure Project are defined in the Environmental Management System Environmental Objectives (E-00-000-EMS-002) document.

An overview of objectives and targets is provided in Table 2.

Table 2: Objectives, Targets and Indicators

Aspect	Objective	Target	Indicator	Program
Spread of weeds	Manage activities to prevent the spread of weeds.	Noxious weeds identified and monitored.	Spread contained within identified boundaries.	Monitoring program Preparation and implementation of Procedures/Instructions Training & awareness
Hazardous liquid spill (major)	Manage activities to prevent against soil/groundwater contamination from major hazardous liquid (oil) spills.	Zero reportable (>200L or watercourse) oil spills. Zero major spills 10-200L	# reportable and major spills	Preparation and implementation of Procedures/Instructions Training/awareness
Hazardous liquid spills (minor)	Manage activities to prevent against soil/groundwater contamination from minor hazardous spills and leaks (e.g. oil, chemical, herbicide)	<15 minor spills 0-10L	# minor spills	Preparation and implementation of Procedures/Instructions Training/awareness
Bushfire	Manage activities to prevent bushfires	Zero bushfires ignited by Epic Operations. No infrastructure damage caused by fires.	Fire risk activities are managed during fire danger season.	Preparation and implementation of Procedures/Instructions Training/awareness Ensure vehicles & sites are adequately equipped
Cultural heritage	All new construction projects to be assessed for Aboriginal cultural heritage sites	100% of new construction project areas surveyed to identify and register Aboriginal cultural heritage sites.	Zero cultural heritage licence breaches	Preparation and implementation of Procedures/Instructions Training/awareness Approvals processes
Cultural heritage	Avoid impacts to cultural heritage sites.	Zero impacts to cultural heritage sites.	Cultural heritage breaches against legislation.	Preparation and implementation of Procedures/Instructions Training/awareness Approvals processes
Soil erosion, sedimentation, drainage, compaction	Identify critical and vulnerable sites and manage activities to reduce impact.	All critical and vulnerable sites properly managed.	# critical and vulnerable sites identified in GIS. # critical sites being managed.	Monitoring program Preparation and implementation of Procedures/Instructions Training/awareness

Aspect	Objective	Target	Indicator	Program
Flora/fauna disturbance & land clearance	Protect the natural environment and preserve biodiversity.	No unauthorised clearing of vegetation in a vulnerable area. Zero breaches to clearing permits. Identify vulnerable areas	# breaches issued per year	Preparation and implementation of Procedures/Instructions Training/awareness Approvals processes
Emissions	Identify energy efficiency opportunities Prepare for and submit all relevant emissions reports by due dates.	Continued development of the compressor optimisation model. All reports submitted by due dates.	Commencement of energy efficiency strategy. Tonnes CO2-e emitted. 1 NGER and 1 NPI report submitted	Investigate energy efficiency opportunities and develop strategy Emissions monitoring program
Noise and vibration	Comply with noise legislative requirements	Zero breaches of noise legislation.	# legislative breaches # community complaints	Monitoring upon receipt of complaint and prior to new projects Landholder liaison
Dust	Manage activities to reduce dust emissions	≤ 2 complaints regarding dust.	# community complaints	Monitoring upon receipt of complaint Landholder liaison
Contaminated water release to land (e.g. oily water, hydrotest water, sewage/effluent)	Manage activities to prevent against soil/groundwater contamination via release of contaminated water.	Contaminated water release to land is compliant with legislation.	# contaminated water releases to land and quality of water released	Preparation and implementation of Procedures/Instructions Training/awareness Monitoring program Ensure all drainage/washdown areas are functional
Waste management	Ensure sound waste management practices, including appropriate storage, handling and disposal.	Zero environmental incidents from waste mismanagement All personnel practicing good waste management.	# reported incidents Licence compliance	Preparation and implementation of Procedures/Instructions Training/awareness Ensure all sites are equipped with materials to manage waste appropriately

All activities are to be conducted in accordance with approved Procedures.

3.4 GIS

Epic Energy has a Geographical Information System (GIS) in place for the PEPL Relocation Project. The GIS includes information on known environmental constraints or sensitive areas (such as cultural heritage sites, locations of flora and fauna, etc) along the pipeline easement.

3.5 Responsibilities

Epic Energy is responsible for environmental management during the construction of the PEPL Relocation Project. All personnel and contractors are accountable through conditions of employment or contracts. Each individual is responsible for ensuring that their work complies with relevant EMS documentation and this CEP.

Table 3 indicates personnel responsibilities for the operation of the Project and the management structure for the Project is shown in Attachment 4.

3.6 Induction and Training

An environmental induction will be conducted to explain the requirements of the project EMS and CEP (including Environmental Work Procedures) to the construction personnel. The environmental inductions will be conducted for all personnel, to provide information that is relevant to all project personnel, including:

- Relevant legislation;
- Site access requirements;
- Groundwater and surface water;
- Drainage management;
- Flora and vegetation;
- Fauna;
- Aboriginal Heritage;
- Air quality (i.e. dust);
- Soil stockpiles;
- Weed control;
- Land access;
- Rehabilitation;
- Traffic movement;
- Noise and vibration;
- Waste management;
- Hazardous materials and hydrocarbons;
- Relevant project documentation;
- Spill management and emergency response; and
- Incident reporting.

All personnel and visitors will be inducted and the environmental inductions will be linked with safety inductions for efficiency with additional training undertaken on an as needs basis. Records of personnel attendance and assessments of induction training conducted will be maintained in the site office by the Site Supervisor and details reported to Epic as required.

The Construction Manager and supervisory staff will be responsible for ensuring all key construction personnel are inducted and trained in the requirements of the CEP before work commences and that personnel under their control are similarly inducted and trained in the Environmental Work Procedures relevant to their scope of work.

The program will aim to raise awareness and provide information and enable all construction personnel to fulfil their environmental management responsibilities.

The induction and training procedures will include a competency test to ensure all personnel are able to demonstrate they understand and can carry out their assigned tasks in an environmentally responsible manner. Induction and training procedures will include mechanisms for identifying additional training requirements and the most appropriate delivery model including on-site, off-site and toolbox training sessions.

Table 3: Personnel Responsibilities

Person/ Title	Responsibilities
Epic Energy General Manager	▪ Directly responsible for the management of the PPS, including all environmental aspects. ▪ Reports directly to Epic Energy Executive Management.
Epic Energy Project Manager	▪ Responsible for fulfilling the commitments of and implementing the requirements of the CEP. ▪ Ensures appropriate contractor resources are allocated to implement responsibilities under the CEP (including the Environmental Work Procedures and the Environmental Line List). ▪ Ensures environmental induction and training program is developed and implemented. ▪ Ensures adjoining landowners and other stakeholders are kept informed of matters relating to their interest. ▪ Oversees the coordination of the environmental inspection and monitoring program. ▪ Undertakes environmental Incident investigation and reporting. ▪ Has the authority to “stop work”.
Epic Energy Construction Manager	▪ Directly responsible for the overseeing construction activities and fulfilling of commitments contained in the CEP including the Environmental Work Procedures and the Environmental Line List. ▪ Responsible for ensuring adequate resources are provided for constructing and maintaining environmental controls. ▪ Environmental Incident investigation and reporting. ▪ Has the authority to “stop work”.
Epic Energy Environment Manager	▪ Conducts monitoring as required. ▪ Provides specialist advice to Project and Construction Manager on environmental matters on a day to day basis. ▪ Liaises with Crew Supervisors with regard to field issues. ▪ Reviews environmental induction and training program for compliance with CEP requirements and conducts training as required. ▪ Ensures weekly environmental checklists are completed and any shortfalls are brought to the notice of the Project Manager/Construction Manager. ▪ Responsible for identifying that all necessary environmental permits and approvals have been obtained. ▪ Environmental Incident investigation and reporting. ▪ Has the authority to “stop work”.

Person/ Title	Responsibilities
HSE Officer	▪ Ensure that all aspects of this CEP are undertaken including the reporting requirements. ▪ Ensures that agreed environmental conditions are adhered to. ▪ Monitoring health, safety and environmental legislative changes and the Company's compliance. ▪ Responsible for feedback to the Supervisor and Director on environmental compliance. ▪ Monitor the overall effectiveness of the HSE programme. ▪ Liaison with external statutory and professional HSE organisations. ▪ Inspects work areas daily. ▪ Provides specialist advice to Project and Construction Manager on environmental matters on a day to day basis. ▪ Liaises with Crew Supervisors with regard to field issues ▪ Ensures weekly environmental checklists are completed and any shortfalls are brought to the notice of the Project Manager/Construction Manager. ▪ Responsible for flagging vegetation and 'No Go' areas. ▪ Environmental Incident investigation and reporting. ▪ Responsible for landowner consultation. ▪ Has the authority to "stop work"
Epic Energy Site Supervisor	▪ Consultation with all employees and contractors ▪ Investigation of accidents (including near misses). ▪ Providing information and training to employees. ▪ Will be responsible for the implementation of all HSE policies in the workplace.
Contractors	▪ Responsible for ensuring that operations activities meet regulatory requirements and are undertaken in compliance with Epic Energy's environmental objectives, this CEP and relevant environmental procedures. ▪ Responsible for ensuring that all environmental objectives contained in the contracts are attained.
Personnel	▪ Must observe all company HSE instructions, act in a safe manner and avoid risk to themselves and others. ▪ Be responsible for HSE in operations over which they have control over working conditions and methods

3.7 Communication

3.7.1 Supervisor Meetings

A supervisors' meeting with the Epic Project Manager and Construction Manager will be held weekly. The Epic HSE Representative shall attend these meetings to provide any information required and discuss any issues with the Supervisors, in particular to provide information on environmental issues likely to be encountered in the next week and to ascertain the rate at which the crews will be moving through these areas.

3.7.2 Toolbox and Pre-Start Meetings

The construction crews will hold daily pre-start and weekly toolbox talks to discuss issues associated with the scheduled work. This will include highlighting and discussing relevant environmental issues as required. The Toolbox meetings may be used to discuss the upcoming environmental issues with the crew and to provide more detailed information as necessary.

3.7.3 Job Hazard Analysis

Prior to commencement of a new operational activity (e.g. excavation, repair activities) or a change in environmental zone, a Job Hazard Analysis (JHA) is to be completed by the Permit Issuing Officer (PIO). The PIO will have relevant experience and expertise and involve all members of the relevant operations team in the JHA process. The JHA form shall identify the specific environmental objectives and hazards associated with the particular type of operations or maintenance activity. The JHA must be approved prior to commencement of the outlined activities. A copy of the completed JHA shall be retained on the maintenance files.

4 Project Overview

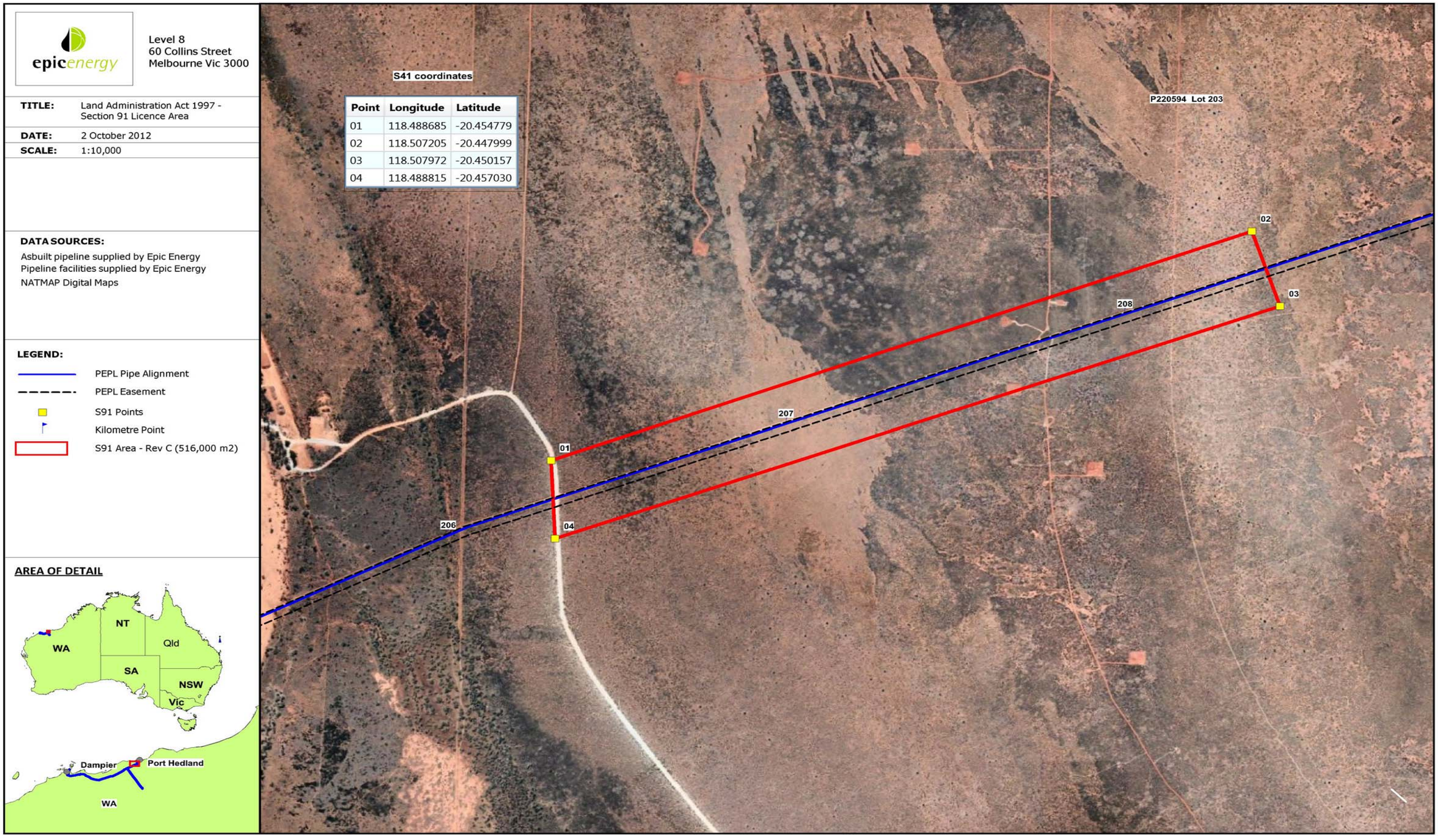
The PEPL Relocation Project is located approximately 11km south west of Port Hedland and 5 km west of South Hedland, specifically within the Boodarie Pastoral Lease Station, which is located on Crown Land. To the east of the project site is Turner River. Access to the project site can be gained through a 7.25 km access track connecting the project site to the North West Coastal Highway.

The PEPL is contained within a 30m easement, with the PL22 licence area extending 125 m laterally on either side of the PEPL centreline.

The construction will be contained within the granted PL22 licence area. A section 91 licence under the *Land Administration Act of 1997* is being sought for the area of the PL22 licence area over which the existing registered easement does not extend.

Figure 2: Location of PEPL Relocation Project Area

Figure 3: Section 91 Licence Area



5 Existing Environment

This section provides a brief overview of the key environmental features relevant to the Project area. Information summarized below has been extracted from several existing documents that have carried out extensive research and investigation with regards to the broader Pilbara Pipeline System and proposed Roy Hill Railway Project. These are given below.

- Pilbara Pipeline System Environmental Management Plan: Operations (Epic Energy 2011);
- RH1 Railway Project Flora and Vegetation Survey (Woodman Environmental 2011);
- RHI Rail Corridor: Targeted Flora Survey Multiple Areas - Chainage 2 to Chainage 148 (Maia 2011);
- Turner River and Rail Terminal Yard Flood Study (Worley Parsons 2012)
- Conservation Significant Vertebrate Fauna Species Habitat Assessment: Roy Hill Infrastructure Rail Corridor (Terrestrial Ecosystems 2011).

5.1 Biophysical Environment

The 0-93 km length of the Roy Hill Rail corridor is located within the Pilbara Interim Biogeographic Region (IBRA) of Western Australia. Within this, the Roy Hill Rail Corridor intersects the Roebourne sub-region, whose classification code is PIL4 in the north and the Chichester sub-region, whose classification is PIL1 in the south. The project site covered in this CEP is located in the Roebourne sub-region.

Woodman Environmental (2011) describes the vegetation characteristics of the Roebourne sub-region as comprising of quaternary alluvial and older colluvial coastal and sub-coastal plains, with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*.

Linear ranges of basalt uplands with minor exposures of granite occur on the plains, and are dominated by *Triodia* hummock grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands, with Samphire, Sporobolus and mangal occurring on marine flats.

Woodman Environmental (2011) has also noted that this sub-region is extensively used for pastoral activities.

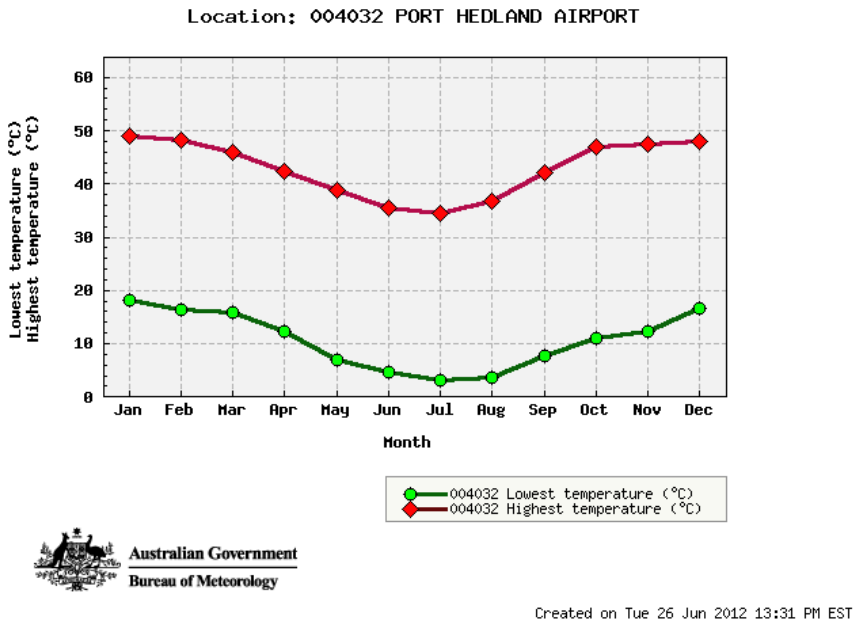
5.2 Climate

The Project is located within the Pilbara region in the Arid Zone of Western Australia. This area is classified as desert because of low and erratic rainfall in the region. The Pilbara coast has hot, humid summers from December to March and warm, dry winters from May to November. Summer temperatures are usually extreme and there is a high evaporation rate.

Figure 4 shows the highest recorded monthly maximum and minimum temperatures (data from 1948 – 2012), recorded for Port Hedland Airport, the nearest meteorological station to the project area (Bureau of Meteorology 2011). As can be seen in the Figure, temperatures can peak up to 50^{o}C around November – January, and drop as low as 2^{o}C in July. On average, the highest mean annual temperature is 33.2^{o}C and lowest is 19.4^{o}C.

High temperatures, of close to 50^{o} C expected in summer over January to November is another consideration that has to be taken into account in relation to construction activities at the project site, where potential caution has to be taken with regards to heat stress and fatigue in carrying out construction activities.

Figure 4: Temperature Variances at Port Hedland Airport



Source: Australian Bureau of Meteorology (2012)

5.2.1 Rainfall, Flooding and Tropical Cyclones

As shown in Table 4, the mean rainfall peaks in summer, particularly over the period January-March, with rainfall strongly influenced by tropical cyclones. The prevalence of such cyclonic events results in the Pilbara receiving slightly higher average annual rainfall (250-300mm) than the remainder of the Arid Zone. The mean annual rainfall in the region is 317mm and it rains for an average of 20.4 days annually.

Hydrological modeling has been carried out for areas located within the delta of Turner River in a recent study carried out by WorleyParsons (2012). Results of the 20 year and 50 year design flood events indicated that an existing natural ridge constrained flood waters to within the floodplain, therefore protecting any areas within the Roy Hill Rail Corridor from runoff and flooding from the Turner River.

Results of the 100 year modeling have shown, however, that flood waters spill over the Turner River catchment boundary in two locations, entering the proposed Roy Hill Corridor area. However, these locations are sited within the northern areas of the Turner River catchment and are not expected to affect the construction area pertaining to the PEPL Relocation Project.

Table 4: Mean Monthly Rainfall at Port Hedland Airport

Month	Mean rainfall (mm)
January	28.4
February	68.2
March	41.1
April	21.1
May	29.6
June	35.8
July	14.6
August	6.1
September	1.4
October	0.5
November	0.4
December	13.5

Source: DEC, 2006

Tropical cyclones occur in the Pilbara region between November and April, with April storms, historically being the most severe.

5.3 Flora and Vegetation

Information on vegetation, flora, floristic communities and weeds within the project area referred to in the CEP are derived from two recent surveys carried out on the Roy Hill Project. Details on these surveys are given below.

- Woodman Environmental (2011): This study reported the findings of a survey of conservation significant and introduced flora within the 0-93 km section of the entire length of the Roy Hill Project corridor. As part of this study, a Floristic Community Type Analysis of vegetation in the 0-40.5 km section of the proposed corridor was also carried out.
- Maia Environmental (2011): This study comprised of the identification of targeted flora at various points along chainage 2 to chainage 148 within the RHI Railway corridor.

5.3.1 Floristic Community Analysis

Woodman Environmental (2011) classified flora and vegetation identified in their survey of the 0-40.5 km Roy Hill Rail corridor into super-groups.

Of these communities, FCT 6a and 6d were found to occur within the Project area. These are summarized in Table 5.

Conservation Significant Flora occurring within FCT6a communities include: *Abutilon pritzelianum ms* (P1), *Tephrosia rosea* var. *venulosa* (P1) and *Eragrostis crateriformis* (P3). Even though the Project area is considered to contain portions of FCT6a and 6d communities, there are no known occurrences of Conservation Significant Flora in the area.

Table 5: Floristic Community Types (FCTs) occurring within the Project area

FCT	Extent in Survey area (ha) (%) RHI Rail Corridor	Local Conservation Significance Ranking of FCT	Local Conservation Significance	Regional Conservation Significance
6a	2,996.74 ha (32.77%) of the survey area	1	FCT 6a was found to comprise of >10 % of the area surveyed along the 0-40.5 km Roy Hill Rail Corridor. The FCT 6a community is known to occur along plains, which are a locally common and widespread type of landform in the area. Conservation Significant flora known to occur in FCT 6a is *Abutilon pritzelianum* ms (P1), *Tephrosia rosea var. venulosa* (P1) and *Eragrostis crateriformis* (P3).	Known to occur outside survey area Likely to be relatively regionally common and widespread based on usual landform type
6d	25.67 ha (0.28%) of the survey area	4	FCT comprises <1 % of survey area. Landforms on which FCT occurs (flats) locally common and widespread	Known to occur outside survey area Likely to be relatively regionally common and widespread based on usual landform type

5.3.2 Nationally Listed Threatened Flora

No nationally-listed threatened flora species, as listed under the *Environmental Protection and Biodiversity Conservation Act of 1999* were recorded in the study undertaken by Woodman Environmental (2011), which includes the Project area.

5.3.3 Threatened and Priority Ecological Communities

The closest known Threatened Ecological Communities in the area were located over 100 km to the south of the Roy Hill Rail Corridor. These are namely TEC 46, which are the Themeda Grasslands and TEC 78, which is known as the Ethel Gorge Aquifer Stygobiont Community.

There are no identified Threatened or Priority Ecological Communities within 500 m of the Project area.

5.3.4 Environmentally Sensitive Areas

There have been no Environmentally Sensitive Areas identified within 500m of the Project area.

5.3.5 Conservation Significant Flora

Conservation Significant Flora were found to occur in the area, as per the results of the survey carried out by Woodman Environmental (2011), within the 0-40.5 km length of the Roy Hill Rail Corridor. Maia Environmental (2011) also identified two Conservation Significant Flora species during their survey, which is consistent with those by Woodman Environmental (2011).

None of the Conservation Significant Flora species were identified within the Project area.

5.3.6 Weeds

No weed species identified by the surveys are listed as Declared Plants by the Department of Agriculture and Food (Woodman Environmental 2011).

5.3.7 Vegetation Clearing

Under the PL22 licence, the land within the Project area was originally cleared to construct the PEPL pipeline, under which relevant permits to clear were obtained at the time. Since then, the land has been used for pastoral grazing, with parts of the area covered by grasses such as Spinifex.

The Project has applied for a Native Vegetation Clearing (Purpose Permit) through the Department of Mines and Petroleum. The total amount of vegetation clearing may be 22.341ha.

Graders and bulldozers would be used to clear vegetation and remove topsoil. Vegetation would be broken and raked into a stockpile minimising movement of topsoil. Topsoil will be graded to a depth of 100mm for a blade-width over the trench line and other disturbed areas.

The proposed area of clearing of native vegetation along the pipeline corridor will undergo rehabilitation once the project has been completed. Ongoing maintenance access and vegetation trimming/clearing as required under AS2885.1 will be implemented through the lifetime of the operating asset.

The pipeline trench will be backfilled and recontoured to match the surrounding topography. Once backfilling has occurred, the stockpiled topsoil would be spread evenly across the area to assist in vegetation re-establishment from seed. In areas along pipeline corridor, where the route is currently vegetated with native species, stockpiled vegetation would be re-spread over the area to assist in vegetation re-establishment from branch-retained seed. No specific re-seeding will be implemented as a result of the already cleared land within which the pipeline will be located.

Monitoring of the area will be ongoing after the completion of revegetation to assess the progress of rehabilitation and also to identify any erosion or surface drainage issues.

Ten clearing principles have been identified under Schedule 5 of the *Environmental Protection Act 1986* for the purposes of determining the impact of clearing. The Project is not considered to be at variance with any of the ten clearing principles listed in Schedule 5 of the *Environmental Protection Act 1986.*

5.4 Fauna

A fauna survey has recently been carried out for the broader Roy Hill Rail Infrastructure Project area by Terrestrial Ecosystems (2011). This found that there are three species, the Crest-tailed Mulgara (*Dasycercus cristicauda*), the Brush-tailed Mulgara (*Dasycercus blythi*) and the Bilby (*Macrotis lagotis*), which are listed as Vulnerable under the EPBC Act and Schedule 1 under the WA *Wildlife Conservation Act 1950* and Priority 4 with the DEC.

As can be seen in Figure 5 given below, a significant portion of the s91 licence area is covered by potential Bilby and Mulgara potential habitats, which are protected as conservation significant flora. Key vegetation communities, namely FCT6a and FCT6d are also located within the area.

Four sets of old burrows were recorded in the assessment of the broader RHI rail corridor but none were active. Similar habitat to where this Bilby was recorded is found across the RHI rail corridor. Bilbies shift their burrows and foraging area when food resources in an area are depleted, so even if they were not present in an area during this habitat assessment, they could have moved into an area that is to be cleared before vegetation clearing commences.

To mitigate any potential harm to these species, this area is to be searched for active burrows within 6 weeks of vegetation clearing. Areas within the vegetation clearing corridor that contain active burrows should be subject to a trapping and translocation program to minimise the number of Bilbies or Mulgara that could be killed and injured during the vegetation clearing and rail construction activities.

It is also noted that four introduced species, as found in the Pilbara region, may be present in the licence area. These are namely, the house mouse, black rat, cat and fox (DEC 2006).

5.5 Water

5.5.1 Surface Waterways

The Roebourne sub-region has limited surface freshwater. Freshwater flows are variable and typically associated with storm-surge or tropical cyclone activity. These periods of high flows are followed by dry periods, when the stream flows stop and even the deeper waterholes in the gorges can dry up completely.

The closest surface waterway to the Project site is the Turner River, located to the east of the site. Heavy rainfall is required to produce flowing conditions. Cyclones can cause major flows between November and April. The rivers are generally dry between August and October, with only occasionally short-lived flows.

The Project will not impact the Turner River.

There are no Ramsar wetland sites or wetlands of national significant anywhere in the vicinity of the Pilbara Pipeline System.

5.5.2 Groundwater

The regional aquifer consists of the Pilbara fractured rock aquifer, consisting of Precambrian granite greenstone terrain overlain by superficial sediments in the river valleys. The water table is generally within 15m of the surface in the granitic areas, but may be deeper below the greenstone hills.

Project construction activities involve excavation up to 9m in depth. Therefore, the groundwater table is not expected to be encountered. Excavation activities will be carried out during the dry season, where there is very low rainfall, which will help ensure that there will be no impact on the groundwater table.

Dewatering is not anticipated to be required unless the excavation is carried out after rainfall. If groundwater is encountered in the excavation, then dewatering of both the excavation and the surrounding ground is required to prevent a reduction in slope stability. Within the Red Beds, it likely that the permeability will be inconsistent, with seepage occurring along soil defects and in zones of lower fines content. The lower 1m of the excavation is likely to be more permeable than the remainder of the Red Beds due to the lower fines content encountered at this depth.

Water for the Project will be obtained from an existing RHIO bore located south of the Project site or alternatively from potable sources in South Hedland.

5.6 Air Quality

Dust is likely to be a minor issue during construction of the Project. The generation of dust will be minimized by clearing during periods of low wind speed events and using water carts to dampen the ground where surface soil moisture is low.

There is no odour expected from the construction activities.

The Proposal is being designed to ensure compliance with *National Greenhouse and Energy Reporting Act 2007* and associated regulations and industry standards.

5.7 Indigenous Heritage

Aboriginal heritage surveys were carried out prior to construction of the existing PEPL. The PEPL alignment was selected to avoid known sites of cultural significance protected under the Aboriginal Heritage Act 1972.

A heritage survey was conducted in late 2012 and no heritage sites were identified within or adjacent to the Project Area.

5.8 Native Title

Native Title agreements have been obtained for all Pilbara Pipeline System (PPS) pipeline licences in Western Australia by processes consistent with the Native Title Act 1993. As such, the PEPL is not subject to native title claims under the *Native Title Act 1993*.

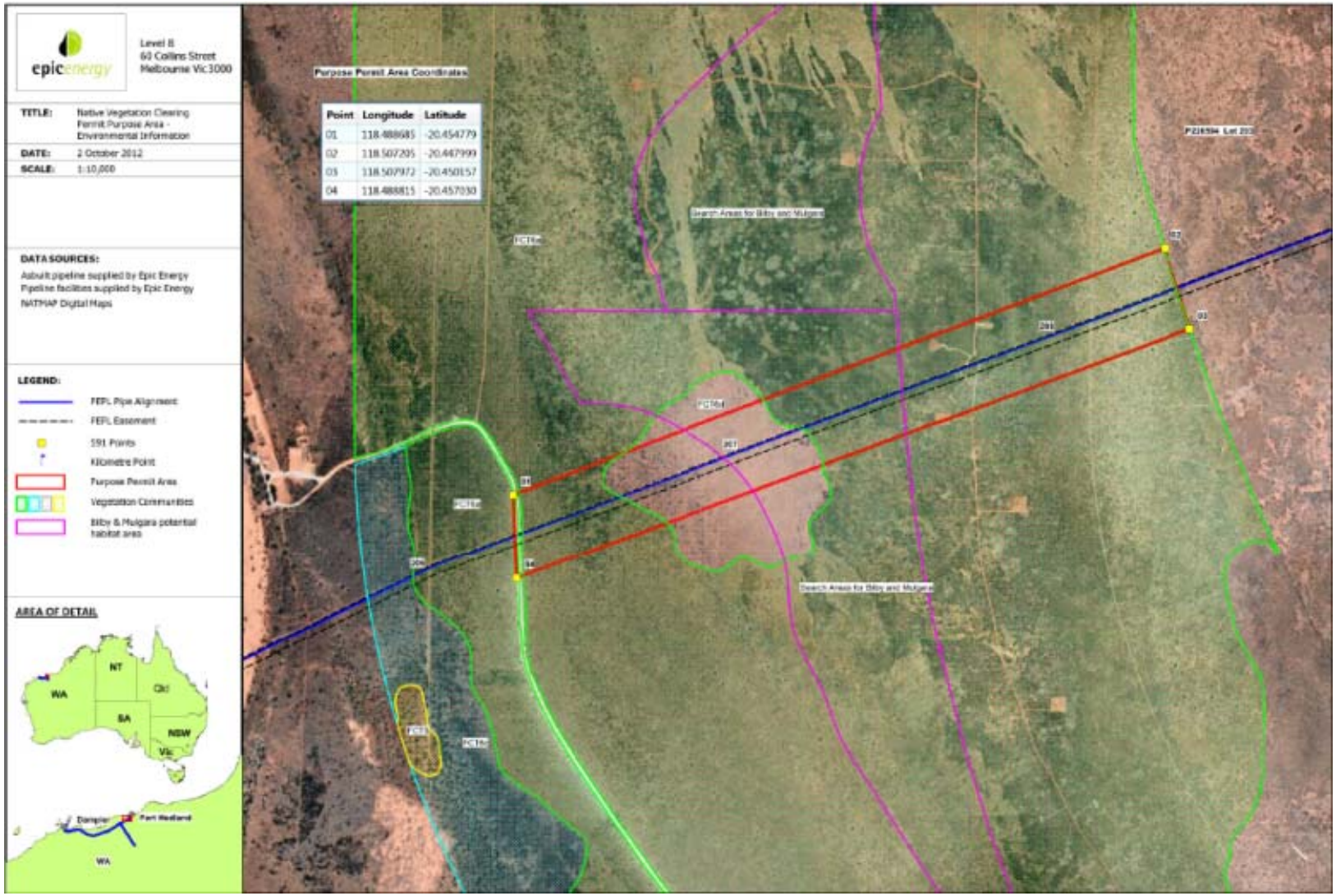
The PEPL Relocation project is being completed in association with Roy Hill Infrastructure Pty Ltd pursuant to the *Railway (Roy Hill Infrastructure Pty Ltd) Agreement Act 2010*. The pending s91 licence area is within the area that RHIO has a current Native Title Agreement with the Kariyarra People, which will be applied to this Project.

5.9 Land Use and Third Party

The PEPL Relocation Project entails the relocation of the existing pipeline so that RHI can construct a new railway as part of the RHI Railway Project.

The location of the Project is on Pastoral Lease land used for extensive cattle grazing. Access to this land has been obtained under the PEPL pipeline licence PL22, existing registered easement, existing access agreement with Boodarie Station and the pending section 91 licence.

Figure 5: Project Area Environmental Aspects



6 Stakeholder Consultation

Regular contact will be maintained with the relevant stakeholders to ensure that there will be minimal inconvenience and impact on their activities. This consultation will be the responsibility of the Project Manager and HSE Manager. All liaison activities will be undertaken in accordance with existing Epic stakeholder construction procedures.

Prior to construction commencing, all relevant stakeholders will be advised of the commencement of work, an approximate schedule of operations for their area and providing Epic contact details.

Table 6 below provides a summary of the entities with which consultation regarding Project activities has been carried out. It is noted here that no issues with regard to potential Project impacts have been raised, as of date.

Stakeholder consultation will continue throughout the Project implementation, and will include prior notification of activities to all relevant stakeholders.

Table 6: Stakeholder Consultation

Stakeholder	Discussion Topics	Issues
Roy Hill Infrastructure Pty Ltd	Project design requirements, authorisation for s91 licence and information in relation to Native Title and Cultural Heritage compliance	Nil
Boodarie Pastoral Station	Existing access agreement and ongoing consultation	Nil
Holcim	Use of existing haulage road, ongoing consultation with regard to road usage interaction and maintenance, s91 licence	Nil
Boral	Use of existing haulage road, ongoing consultation with regard to road usage interaction and maintenance, s91 licence	Nil
Water Corporation	Use of existing public access road, ongoing consultation with regard to road usage interaction and crossing of existing water pipelines	Nil
Department of State Development	Regular consultation regarding Project	Nil
Town of Port Hedland	General Project information, ongoing consultation	Nil
BHPB	General project information, including s91 licence	Nil
North West Infrastructure Alliance	General project information, including s91 licence	Nil
Department of Mines and Petroleum	Application and grant of PL22 Variation and pending Consent to Construct	Nil
Department of Regional Development and Lands	Application and grant of section 91 licence	Nil

7 Description of the Activities

7.1 Construction Activities

Key Project construction activities that will be carried out under this Project are detailed in Table 7. These activities have been identified against potential environment impacts and the mitigation measures described in this CEP.

7.2 Construction Footprint

The actual construction area will be contained within the PL22 licence area and a section 9 licence area being an area of 516,000 m^2. Within this area, an area of 22.341ha has been applied for to be potentially cleared under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. All clearing will be minimised wherever possible.

The construction footprint includes approximately 7.088ha of laydown area and 15.253ha of working area. In addition, the Project will utilise an existing cleared access track from the North West Coastal Highway to the Project area.

The construction are will include a laydown and office / crib room area which will have a maximum of 4 crib / office buildings (3m x 6m), 1 ablution block and a designated light vehicle parking area.

Figure 7 provides an overview of the working and laydown areas and Figure 6 provides an overview of the construction right-of-way.

Table 7: Description of Activities

Construction Activity Description
Site survey and potholing on the existing live pipeline ▪ Site survey and set out to determine the location of the existing pipeline, new crossing alignment, easement, Licence Area and the construction footprint ▪ Potholing on the existing live pipeline and in the transition locations and including interconnecting piping and hot tap locations
Civil works ▪ Upgrade of the access track, clearing of the work site and the pipe stockpile area and installation of temporary fencing ▪ Excavation of the existing pipeline and excavation of the pipe trench on the new alignment ▪ Establishment of site facilities, including cyclone rated site offices, crib huts, ablutions and security ▪ Set up of a laydown area for the contractor's equipment
Excavation and pipe stringing ▪ Trench excavation below ground level and benching for stability ▪ Ramping of excavation at both ends to facilitate removal of spoil, access of pipeline construction equipment, welding of the pipe string and fauna egress ▪ Single lengths of pipe transported to the ROW and welding of the pipe string ▪ Non-destructive testing and "Tie in spools" and hot tap bypass pipe work fabricated after pipe string is completed, tested and joint coated

Testing, trenching and backfilling ▪ Pipeline section holiday tested and any repairs carried out ▪ Pipe section wrapped in "rockmesh" to protect the external FBE pipe coating from potential damage caused by earth materials falling into the trench and onto the pipeline ▪ Lowering in, using sidebooms and excavators and backfilling and compaction of the pipeline trench up to the ROW/excavation floor level ▪ DCVG survey completed to determine any coating defects in the buried pipeline section ▪ Area adjacent to any defects excavated, repaired and holiday tested
Hydrostatic testing, bulk backfilling and grading and compaction of excavation ▪ Hydrostatic test undertaken on the complete new section, including filling, gauging, stabilisation, strength and leak test, depressurizing and dewatering ▪ Trench filled in with excavation spoil and bulldozer and grader spread and level the loose material prior to conditioning and compaction of the material in 300 mm layers
Hot tapping and stoppling works ▪ PEPL pipeline excavated and exposed and Hot tap and stopple fittings welded onto the existing PEPL pipeline and new pipe section ▪ Testing/Inspection of the fittings welds using Non-destructive testing (NDT) and temporary crossover pipe work measured, fabricated and tied in spools ▪ Hot tapping of the new pipe section and live PEPL pipeline completed and completion of purge and gas into the new pipe section ▪ Line stops installed, section to be removed isolated, depressurisation and purging prior to removal of redundant section of pipeline carried out ▪ Interconnecting piggable and pre tested pipe spools tied in to complete the new bypass section ▪ NDT inspection of welds, commissioning of interconnecting spools, completion of purging and tie-in sections pressurised by introduced gas ▪ Temporary valves closed, temporary cross over pipework removed and completion flanges installed
Site reinstatement and demobilisation ▪ Backfilling and compaction of open trenches and a DCVG section over the pipeline carried out ▪ Site cleaned up, reinstated and pipeline warning signs installed ▪ Equipment including temporary offices, toilets, storage containers and fuel tank demobilised from site

Figure 6: Overview of the ROW Cross-section

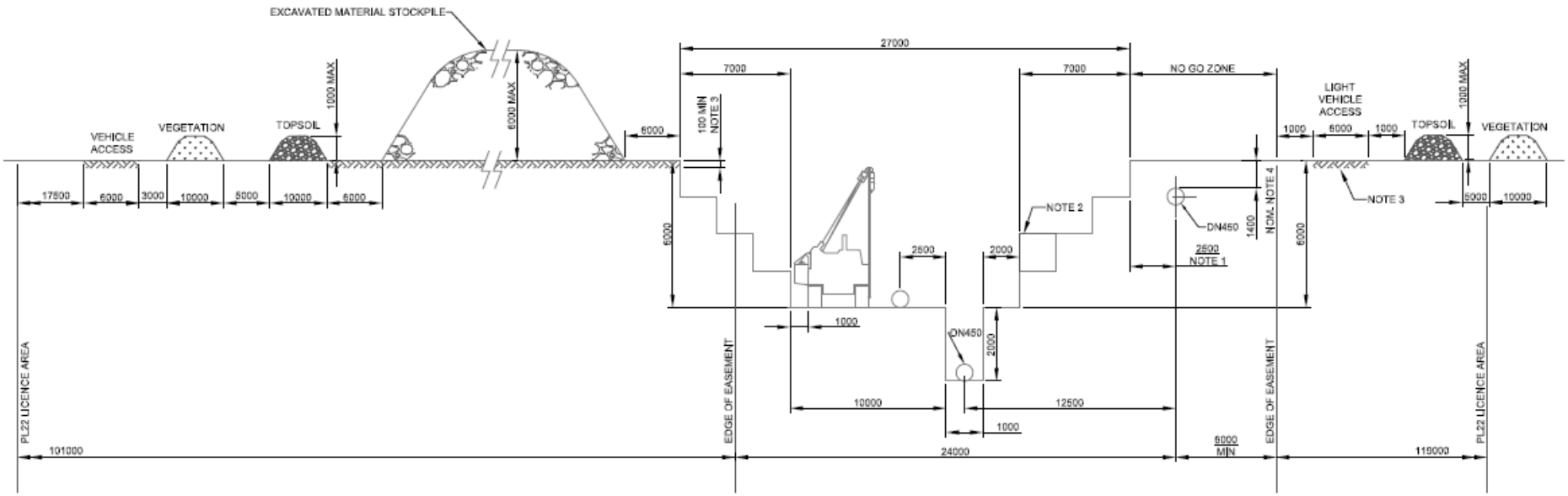
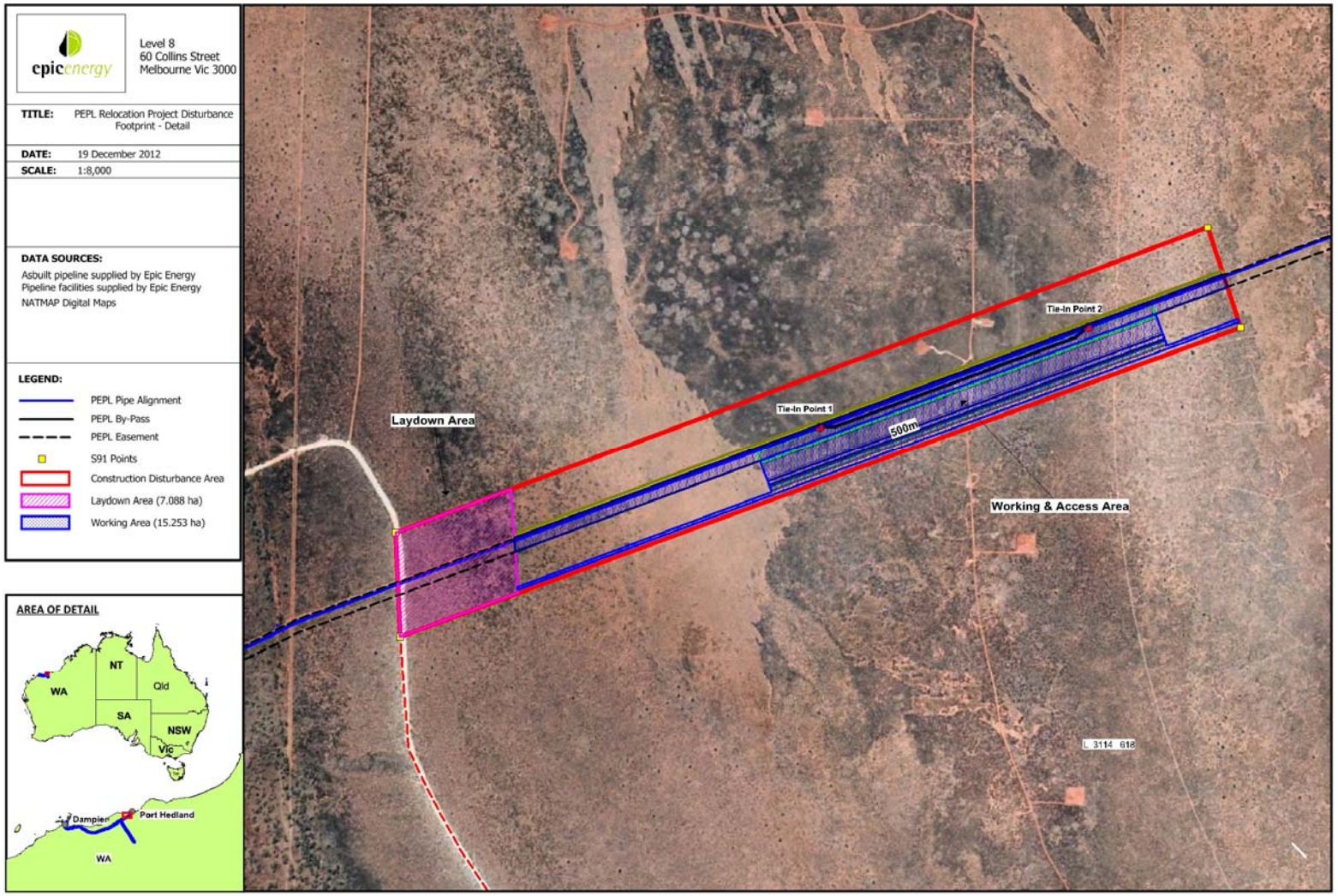


Figure 7: Construction Footprint Areas



7.3 Machinery and Equipment

A summary of the expected machinery is provided in the Table 8. A register of machinery and equipment on site will be maintained throughout the Project.

Table 8: List of Machinery and Equipment to be used during Construction

Excavators 2 x 45 tonne 1 x 22 tonne	Loaders possibly 1 TBC
Dozers 1 x D7/8	Generator sets 1-2
Rollers 1 x Padfoot 13 - 20 tonne	Hand tools various
Graders 1 x 14H/M	Posthole Diggers
Vehicles – 2WD, 4WD up to 10 x LV 4WD 4 x HV 4WD (truck)	Cranes and Franna Cranes as required
Welders 2 x AS400	Scaffold as required for hot tap operation
Compressors 1 x 600cfm (hydrostatic testing)	Trenching Machines
Bobcat	Qty of skid mounted storage tanks & pumps 1
Water Carts 1- 2 15KL 6x4	Tipper Trucks 4 x ATD Cat 740 or equivalent
Plate compactors	Welding machines see welders
Vibrating Loaders	Water trucks and water trailers see water carts
Tri-axle floats for mobilisation of machinery	Ablution facilities 1
Construction Site crib/office 3-4	Fuel trailers

7.4 Hazardous Materials

A summary of the expected hazardous materials is provided in Table 9. A register of all hazardous materials and associated MSDS's on site will be maintained throughout the Project.

Table 9: Hazardous Materials

Acetelyne: 2 x "E" size bottles	Diesel Fuel: 1,000 l up to 24 kl
Hydraulic Fluid up to 200litres	Diesel Coolant
Energrease	Gear Oil
Grease	Butylene Primer
Butylen -Tape	Cement
CRC Aerosol	Water Based Spray and Mark Aerosol
Cream Formulation Hand Cleaner	Thread adhesive
Engine Oil 200 litres	Compressed Oxygen
Paints & Thinners	Garnet

8 Environmental Impacts, Risks and Control Measures

This Section provides an analysis of the environmental risks and potential impacts associated with the construction of the Project. Appropriate management measures and control measures have also been identified and will be applied to minimise the risk of adverse environmental impact from this Project.

The activities and environmental aspects are represented in the APIA's Code of Environmental Practice – Onshore Pipelines and the Pilbara Pipeline System Environmental Management Plan - Operations and an Environmental Risk Assessment were used as a basis to develop the management measures presented in this CEP.

The following sections consider the activities by outlining key activity specific management measures, as well as identifying those responsible for ensuring the measures are successfully implemented. The perceived level of risk presented for each activity is reflective of the likelihood / frequency and severity of identified impacts.

When an environmental risk and impact is identified, the following process is undertaken:

- Environmental risks are assessed by utilising the risk assessment process,
- Whenever possible, steps are taken to eliminate any risk to the environment. If the risk cannot be eliminated, then controls are identified and treatments are established to manage and further reduce any risk,
- Identified treatments are implemented and monitored to assist in reducing or removing any risk, and
- Ongoing monitoring and review of the Environmental Risk Assessment Register will be conducted in consultation with relevant stakeholders as required.

The methods for identifying the risks and impacts, assigning the likelihood and consequences of each are detailed in Attachment 2.

8.1 Environmental Risk Assessment and Management of Potential Impacts

A copy of the environmental risk assessment for the Project is shown in Attachment 2. This risk assessment register demonstrates that the environmental impacts and risks of the Project will be continually reduced to as low as is reasonably practicable.

Should the occurrence of a series of new environmental impacts or risks be identified, a proposed revision of the attached risk assessment will be provided to the DMP.

Potential environmental impacts identified for the Project Area and associated with the construction will be managed by the strategies detailed in the following section.

8.2 Stakeholder and Access

Relevant Construction Activities	▪ General site presence of construction personnel ▪ Mobilization and demobilization ▪ Accommodation to site and return vehicle transport ▪ Vehicle and machinery movements ▪ Ground disturbing activities including earthworks, trenching, clear and grade, excavation
Potential Impacts	The construction phase of the Project will result in increased personnel, vehicle and machinery activity in the Project area than was present during previous land use. This may result in impacts to stakeholders and existing access routes. The potential impacts that have been identified are: ▪ Increased safety hazard resulting from increases in traffic volume; ▪ Access track proliferation through increased use during construction; ▪ Soil compaction, erosion and sediment release to land and water through increased traffic and earthworks activities; ▪ Disturbance of flora and wildlife habitat through clearing and general machinery movements and earthworks; ▪ Incursion of disease, weeds, vermin or destructive influences to the site through increased human and machinery activity and potential lack of adherence to Project requirements; and ▪ Degradation of existing road infrastructure through increased use during the construction phase.
Objectives	▪ To avoid disturbance to native flora through avoidance and minimization of vegetation clearing through planning and infrastructure alignment and location selection. ▪ To minimise impacts on fauna through the avoidance and minimization of vegetation clearing, awareness through inductions and Toolboxes ▪ To minimise impacts on soil and water through minimization of soil and ground disturbance areas, stripping and stockpiling of top soil for reinstatement, location of the Project away from existing water courses ▪ To avoid adverse impacts on cultural and historic heritage sites through identification and avoidance. There are no known or identified cultural heritage sites within the Project area. ▪ To achieve satisfactory site rehabilitation through implementation of required procedures and specifications, design for reinstatement to prior conditions where reinstatement will occur, weekly inspections, punchlist assessment and completion prior to practical completion of contractor scopes of work and regular monitoring after construction;
Management Measures	▪ Consultation with relevant landholders and regulatory authorities regarding the utilisation of existing roads or tracks; ▪ Vegetation clearance shall be minimised where possible; ▪ Topsoil shall be removed prior to surface preparation and either stockpiled in windrows adjacent to temporary access for respreading

	during reinstatement; ▪ Topsoil stockpiles shall be a maximum height of 1m. ▪ Use of existing access gates and tracks will be conducted from North West Coastal Highway , with additional access tracks being established within the Project area which will be reinstated after construction completion, subject to ongoing operational requirements under AS2885.3. ▪ Where vehicles are required to cross existing utilities (e.g. water pipeline) protective measures such as berming or bridging may be necessary after third party identification and consultation. ▪ Dust suppression, where identified as required through daily visual monitoring. ▪ Firefighting equipment on site. ▪ Ongoing stakeholder consultation ▪ Awareness of personnel to ensure vehicles remain on designated access roads and tracks and within a defined Project area shall be monitored through weekly inspection and daily visual monitoring and may include signs, boundary markers and temporary fences; ▪ Vehicles shall travel at safe speeds that minimise environmental risks (20km/h within the project area or as otherwise signposted), with speeds within congested and working areas at walking pace (5km/h); ▪ Vehicle parking shall be restricted to the Project area and other designated areas. Parking under trees shall be discouraged to prevent root zone soil compaction causing root damage and impairing water infiltration into the soil; ▪ Vehicle and Machinery hygiene requirements shall be adhered to with all vehicles and machinery being certified weed / disease free prior to entry to site and incorporated into the Vehicle and Plant Register. ▪ Upon completion of construction, temporary access tracks shall be closed and rehabilitated to a condition compatible with the surrounding land use; ▪ Public and private access tracks utilised during construction shall be reinstated to their pre-construction condition or as otherwise agreed with the relevant landholder or authority.
Verification Criteria	▪ Nil third party complaints ▪ Nil unauthorised clearing ▪ Nil fauna fatalities within the Project area as a direct result of Project activities ▪ All stakeholder communications recorded and actions closed out ▪ Photo monitoring pre-clearance, weekly during construction activities, and post-reinstatement at designated locations within the Project Area
Verification Documentation and Records	▪ Traffic Management Plan ▪ Incident Report Form ▪ Weed Management Procedure

	▪ Vehicle and Plant Register ▪ Heritage Management Procedure ▪ Vegetation Clearing Procedure ▪ Dust Monitoring Procedure ▪ Hazard and Incident Reporting Procedure ▪ Noise Procedure ▪ Reinstatement Management Procedure ▪ Soil Management Procedure ▪ Vibration Procedure ▪ Working in Severe Weather Procedure ▪ Dust Suppression Register ▪ Vegetation Clearing Register ▪ Weed Hygiene Inspection Register ▪ Equipment and Plant Register ▪ Training and Competency Register ▪ Site Induction Register ▪ Visitor Induction Register ▪ Site Induction ▪ Complaints and Damages Form ▪ Weekly Progress Reports ▪ Weed Hygiene Inspection Form ▪ ROW Inspection and Monitoring Form ▪ Weekly HSE Inspection Form ▪ Daily Environmental Checklist

8.3 Flora and Vegetation Management

Relevant Construction Activities	▪ Site establishment and amenities establishment ▪ Vehicle and machinery movements and parking ▪ Ground disturbing activities including earthworks, trenching, clear and grade, excavation
Potential Impacts	▪ The construction phased of the Project will involve the potential for clearing of native vegetation. The Project will include stripping of topsoil. ▪ Disturbance of flora and wildlife habitat through unauthorized clearing of native vegetation. ▪ Increased potential for erosion through clearing and top soil stripping to enable construction activities to occur.
Objectives	▪ To protect flora species and vegetation resources and maintain the construction footprint within the Project area

	▪ To maintain or enhance quality and quantity of native vegetation within the Project area. ▪ To avoid loss of biodiversity through minimised clearing. ▪ To minimise the amount of vegetation that is permanently cleared. ▪ To prevent disturbance of vegetation and flora adjacent to or outside designated work areas. ▪ To promote the natural return of vegetation and fauna through reinstatement of cleared native vegetation
Management Measures	▪ Induction and supervision of site works within the delineated area and away from other areas to maintain the correct construction footprint and recording of all clearing activities and areas; ▪ The designated parking area is located in a previous disturbed area where no native vegetation clearing is required; ▪ Working area will be clearly marked on relevant construction drawings and physically flagged on the ground to ensure only the minimum area required is cleared ▪ Pre-construction and post-construction photographs of the site area are taken at regular locations within the Project area and recorded with coordinates to ensure monitoring of clearing and ground disturbing works; ▪ Reinstate through respread of top soil and vegetation debris to promote regrowth. ▪ Any cleared vegetation is stockpiled onsite. The vegetation is then re-spread over the designated rehabilitation areas to assist in stabilisation and revegetation. ▪ Ensure that all personnel are aware of appropriate flora management protocols through induction and regular discussion at pre-starts. ▪ No burning of cleared vegetation to be conducted.
Verification Criteria	▪ Zero clearing breaches to clearing permits ▪ Maximum area of native vegetation cleared ▪ No native vegetation clearing to be conducted without appropriate by issued Clearing Permit ▪ Photo monitoring pre-clearance, weekly during construction activities, and post-reinstatement at designated locations ▪ Weekly HSE inspections
Verification Documentation and Records	▪ Vegetation Clearing Procedure ▪ Vegetation Clearing Register ▪ Incident Report Form ▪ Reinstatement Management Procedure ▪ Soil Management Procedure ▪ Weed Management Procedure ▪ Weed Hygiene Inspection Register

	▪ Site Induction Register ▪ Visitor Induction Register ▪ Site Induction ▪ Complaints and Damages Register ▪ Weekly Progress Reports ▪ Weed Hygiene Inspection Form ▪ Pre-start Meetings Form ▪ ROW inspection & Monitoring Form ▪ Weekly HSE Inspection Form ▪ Daily Environmental Checklist

8.4 Weed Management

Relevant Construction Activities	▪ Mobilisation, site and amenities establishment ▪ Vehicle and machinery movements ▪ Ground disturbing activities including earthworks, trenching, clear and grade, excavation
Potential Impacts	▪ The construction phase of the Project has a potential to introduce weed and disease infestations through the utilisation of vehicles and machinery which may not have been adequately cleaned and inspected prior to entry to the Project area
Objectives	▪ To minimise the potential for new weeds and disease to be introduced to the Project area from external sources through the implementation of a Hygiene Program to ensure all vehicles and machinery are certified prior to entry to the Project area.
Management Measures	▪ Induction to provide awareness to personnel of requirements prior to entry to site. ▪ Inclusion of hygiene requirements in contractor construction contracts or instructions to ensure hygiene inspections and clean down of vehicles and machinery is implemented prior to mobilization to site. ▪ Inspection of all vehicles and machinery prior to entry to site and completion of Hygiene Inspection Form and Register to ensure no presence of weeds and disease. ▪ Weekly HSE inspection to visually inspect for any potential weed and disease infestations within the Project area; ▪ Pre-construction and post-construction photographs of the Project area are taken at specified locations
Verification Criteria	▪ No new weeds and disease infestations have been introduced with the construction activity into the project area. ▪ No unauthorised clearing undertaken. ▪ All vehicles and machinery certified hygiene inspection prior to entry to site and included on register

Verification Documentation and Records	▪ Weed Management Procedure ▪ Weed and Hygiene Inspection Form. ▪ Incident Report Form. ▪ Weekly HSE Inspection Form ▪ Photo monitoring ▪ Weekly Progress Report ▪ Vegetation Clearing Register ▪ Reinstatement Management Procedure ▪ Soil Management Procedure ▪ Weed Hygiene Inspection Register ▪ Site Induction Register ▪ Site Induction ▪ Visitor Induction Register ▪ Complaints and Damages Form ▪ ROW inspection and Monitoring Form ▪ Daily Environmental Checklist

8.5 Fauna Management

Relevant Construction Activities	▪ Site and amenities establishment ▪ Vehicle and machinery movements ▪ Ground disturbing activities including earthworks, trenching, clear and grade, excavation ▪ Trenching, excavation, bell-hole and pipe string inspections
Potential Impacts	▪ The construction phase of the Project has the potential to impact on fauna and fauna habitat through the interaction with vehicles and machinery resulting in injured or dead fauna, unauthorised clearing resulting in loss of fauna habitat, death of fauna through entrapment in trenches and excavations and the introduction of introduced species through lack of housekeeping and waste management practices. ▪ Fauna death and injury through entrapment in trenches or excavation or interaction with vehicles and machinery; ▪ Impact on fauna habitat through unauthorized native vegetation clearing
Objectives	▪ To minimise injury to or death of fauna and minimise loss of habitat through the control of clearing ▪ To minimise adverse impacts of construction activities on native fauna species through awareness, controlled activities, excavation design and construction methodology. ▪ To prevent the spread of introduced species through the implementation of waste and housekeeping management processes.

Management Measures	▪ Potential habitats identified in the vicinity of the Project area include two protected species: Bilby and Mulgara ▪ The Project construction area will be searched for burrows of Bilbies and Mulgara within 6 weeks prior to vegetation clearing and if active burrows are located then the Bilbies and Mulgara will be trapped and translocated. ▪ Presentations including maps and photographs of fauna shall be presented and/or displayed in the workplace to raise awareness and facilitate identification and on-ground management. ▪ Pre-construction and post-construction photo monitoring will be implemented and recorded. ▪ Any fauna found within the pit, trench or excavation are removed and released by a Fauna Handler. ▪ Traffic is to be kept to designated tracks and drivers will abide by the allocated speed limits to minimise fauna fatality or injury by moving vehicles. ▪ All domestic animals are prohibited from the Project area. ▪ Bell-holes shall be adequately designed to ensure access and egress for personnel and egress by fauna through ramps of at least 45^{o}. Bell-holes will be inspected once daily by the Crew Supervisor. Photo monitoring shall include bell-hole ramp design. ▪ Bellholes, excavations and pits are thrice checked daily for fauna entrapment and appropriate barriers and ramps will be placed where practicable and do not interfere with construction activities to minimise fauna entrapment and to allow fauna to escape. ▪ All inspections are to be documented in daily and weekly reports. ▪ All staff are inducted on venomous and other wildlife hazards and potential impacts through the induction and regular pre-start meetings. ▪ Fauna are prevented from accessing food scraps by placing covers/ lids on food waste bins and the prevention of feeding of wildlife. ▪ During pipe stringing sufficient gaps are created to ensure ingress and egress of fauna. ▪ Possession of firearms is prohibited. ▪ Capture of native fauna is prohibited. ▪ Disturbed areas will be rehabilitated as soon as practicable to facilitate fauna habitat restoration. ▪ Welded pipe strings are to be capped at night to prevent fauna entry. ▪ Work procedures shall include the requirement to inspect open pipes for presence of fauna before work commences on that section and daily recording of inspections. ▪ Inspect trench prior to lowering-in and backfill ▪ Observations of feral species will be reported to the Site Manager.
Verification Criteria	▪ Nil fauna fatalities within the Project area as a direct result of Project activities

	▪ No disturbance to vegetation and fauna habitat outside designated Project areas ▪ Report all opportunistic sightings of conservation significant fauna (Mulgara). ▪ Daily recorded bell-hole and excavation inspections ▪ Recorded trench inspections half an hour prior to lowering-in ▪ Recorded trench inspections half an hour prior to back fill ▪ Twice daily open pipeline trench inspections and records within 3 hours of sunrise and after 3pm in the afternoon ▪ Site general waste bins with lids ▪ Photo monitoring pre-clearance, weekly during construction activities, and post-reinstatement at designated locations ▪ Daily records and photographic evidence of end caps on pipe strings ▪ Weekly HSE inspections
Verification Documentation and Records	▪ Weekly HSE Inspection ▪ Site Induction ▪ Site Induction Register ▪ Visitor Induction Register ▪ Vegetation Management Procedure ▪ Vegetation Clearing Register ▪ Incident and Report Form ▪ Wildlife / Fauna Handlers on site Licensed to DEC regulations ▪ Fauna Interaction Procedure ▪ Hazard and Incident Report Form ▪ Reinstatement Management Procedure ▪ Waste Management Procedure ▪ Driving Safety Procedure ▪ Site vehicle speeds ▪ JHA Procedure ▪ Waste Collection Register ▪ Fauna Inspection Register ▪ Weekly Progress Reports ▪ ROW inspection and Monitoring form ▪ Incident Report Form ▪ Daily Environmental Checklist

8.6 Dewatering and Water Disposal Management

Relevant Construction Activities	▪ Hydrostatic testing activities ▪ Times of natural rainfall during construction activities ▪ Vehicle and machinery movements ▪ Dewatering of work areas, if required, after natural rainfall events ▪ Excavation, trenching, clear and grade, reinstatement activities
Potential Impacts	▪ The construction phase of the Project has the potential to impact the environmental in relation to erosion and sedimentation during dewatering and water disposal activities. The Project does not expect to conduct any dewatering of trenches and excavations, however dewatering from hydrostatic testing activities will be required. Water disposal during construction will be from hydrostatic testing activities. ▪ Erosion and sedimentation have a potential of occurring through water disposal activities conducted without suitable protection of the environment such as water dispersal and ground / soil protection. ▪ Impact on surrounding environment through unauthorized and incorrect water disposal. ▪ Loss of topsoil and sub-soils due to erosion of stockpiles and working areas ▪ Siltation and sedimentation due to runoff from erosion areas ▪ Reduced potential for rehabilitation success due to loss of top soil
Objectives	▪ To ensure that water disposal does not result in adverse impacts to the surrounding environment such as erosion or sedimentation ▪ To minimise potential for soil loss and degradation, both on and off construction areas
Management Measures	▪ Construction amenities will be regularly inspected and maintained and effluent will be collected and disposed of offsite at an appropriate facility by a licenced contractor. ▪ Water used for hydro-testing shall be disposed by being dispersed to ground with suitable protection to ensure no erosion or runoff through the use of aeration, dispersion onto geofabric or similar material to dissipate the energy and ensure no erosion. ▪ Soil stockpiles will be constructed so as to direct surface water drainage around and away from the stockpile. ▪ Soil stockpiles will be no greater than 6m in height and will be monitored for signs of erosion, in particular after rainfall. ▪ Grading will ensure that surface drainage is directed away from excavations and spoil storage areas to minimise potential sedimentation. ▪ Water removed from excavations would be disposed to adjacent land and would avoid soil erosion by discharging to stable vegetated areas or through energy dissipaters and would not result in flooding beyond the intended receiving area. Disposal shall avoid damage to remnant

vegetation.

- Disposal of dewater product shall be undertaken in the first instance, through usage in dust suppression if possible.
- Weekly monitoring of Project area for signs of erosion or sedimentation
- Ground disturbance shall be minimised as far as practicable to maintain soil stability
- The period for which the soil is left exposed to erosion shall be minimised
- Vehicle and machinery movements shall be restricted to designated areas within the approved Project area (refer construction footprint) at all times and consideration of potential bogging or potential generation of erosion or sedimentation during wet weather will be considered and where necessary, access restricted;
- Consideration has been given to scheduling works outside known wet periods. Construction will be commenced in May through to November;

If required, installation of drainage, erosion and sediment control measures shall consider site conditions including:

- natural and constructed drainage patterns
- soil type and erodability potential
- slope
- rainfall frequency and intensity
- catchment size and, therefore, required capacity and coordination of control Structures
- vegetation cover
- proximity to sensitive environments, particularly sedimentation leading to impact on water quality
- Rehabilitation of the construction area shall be to the same as prior to construction where rehabilitation will occur;
- Spoil stockpiles shall be no greater than 6m in height.
- Wastewater discharge from construction activities (e.g. hydrotesting, trench de-watering or well-point de-watering) shall be managed in accordance with the following principles:

Soil erosion and sedimentation of land shall be prevented by:

- applying inlet filters or screens on water uptake hoses
- supporting the inlet hose above the sediment layer in the water
- avoiding discharge directly to waterways where discharge water sediment loads significantly exceed that of the receiving waters and is likely to result in detrimental impacts
- discharging water in a manner which does not result in flooding of land both on and off the pipeline construction area or run-off beyond the intended receiving area or to waterways
- discharging trench and hydrotest water through sediment filters (e.g. hose outlet filters, geotextiles or straw bales) to remove solids
- discharging trench and hydrotest water to stable land through flow

	diffusers (e.g. spray bars) and energy dissipaters (e.g. rock rip-rap or geotextile filters/fabrics)
Verification Criteria	▪ No unauthorised disposal of water. ▪ No erosion or sedimentation resulting from dewatering or water disposal activities. Photographic evidence. ▪ No discharge of contaminated water to grade. ▪ No disposal of water to ground / grade without dispersion and dissipation measures ▪ Weekly record of volumes of water disposed of or dewatered ▪ Nil unauthorized vegetation clearing ▪ Photographic records of no soil stockpile greater than 6m ▪ Photographic records of 100mm of top soil stripped from disturbed areas ▪ Photographic records of spoil stockpile stored separately from top soil stockpiles ▪ Photo monitoring pre-clearance, weekly during construction activities, and post-reinstatement at designated locations ▪ Photographic records of reinstatement with spoil, then topsoil then vegetation (where possible) ▪ Nil significant (300m deep x 3m in length) erosion recorded in weekly inspections ▪ Photographic records of nil offsite erosion as a direct result of Project related activities ▪ Photographic records of nil pipeline trench subsidence of greater than 300mm deep
Verification Documentation and Records	▪ Complaints and Damages Form ▪ Complaints and Damages Register ▪ Daily Environmental Checklist ▪ Dewatering and Wastewater Procedure ▪ Dust Suppression Register ▪ Hazard and Incident Reporting Procedure ▪ Hydrostatic Testing Procedure ▪ Incident Report Form ▪ Reinstatement Management Procedure ▪ ROW Inspection and Monitoring Form ▪ Sediment Procedure ▪ Site Induction ▪ Site Induction Register ▪ Soil Management Procedure ▪ Vegetation Clearing Register

	▪ Visitor Induction Register ▪ Weekly HSE Inspection Form ▪ Weekly Progress Report ▪ Working in Severe Weather Procedure

8.7 Waste Management

Relevant Construction Activities	▪ General construction presence and activities ▪ Construction activities involving use of consumables ▪ Unwrapping of materials and equipment ▪ Putrescible waste from personnel meals (morning tea, lunch, afternoon tea) brought to site daily ▪ Ablution facility waste
Potential Impacts	▪ The construction phase of the Project has a potential to produce various waste streams. These may include construction waste such as concrete, formwork, steel, pipe cut offs, wires, etc., as well as personnel associated waste with lunch and food and associated wrappers and ablution facility waste. There will be minimal hazardous materials or hydrocarbon waste due to the size of the project and the minimal volume of hazardous materials required on site. ▪ Impact on visual amenity
Objectives	▪ To minimise health risks associated with waste management through appropriate housekeeping ▪ To minimise environmental impacts related to waste management through appropriate housekeeping
Management Measures	**Solid Inert Wastes** ▪ Solid inert wastes associated with construction may include building rubble, concrete, bricks, timber, plastic, glass, metals, bitumen and tyres. Appropriate solid waste management shall be applied during construction and will include: ▪ Purchasing Policy and encouraging suppliers to reduce and/or collect packaging; ▪ Stockpiling reusable and recyclable wastes, such as timber skids, pallets, drums, scrap metals, pipe transport spacers, tyres, for salvage at the designated laydown area for removal and re-use by the Contractor; ▪ Supplying designated collection bins at work sites for aluminium cans, glass and paper recycling; ▪ Collecting and transporting general refuse to the Town of Port Hedland approved location Refuse Disposal Site through the use of secured loads in trailers;

	Hazardous Wastes ▪ Hazardous wastes are those which pose an immediate potential risk to human health and/or the environment. Such wastes, which are relevant to construction, may include: radiography or cleaning chemicals, waste oils or sewage. Management measures will include: ▪ Purchasing supplies in bulk containers, where practicable, to minimise packaging; ▪ All waste chemicals and other toxic materials shall be stored and collected for safe transport off-site for reuse, recycling, treatment or disposal at locations approved by relevant regulatory authorities and tracked through the on-site waste register; ▪ Hydrocarbon wastes, including lube oils and oily sludges, shall be collected for safe transport off-site for reuse, recycling, treatment or disposal at approved locations and tracked through the on-site waste register. The hydrocarbon waste shall be contained within a signed, designated, segregated bunded area until collection; ▪ Hazardous waste storage areas must be suitably designed to adequately contain any spills & leaks (e.g. bunded in accordance with statutory requirements); **Putrescible Wastes** ▪ Putrescible wastes are those wastes able to be decomposed by bacterial action and may include discarded food, domestic garbage and garden clippings. Appropriate putrescible waste management shall be applied during construction and will include: ▪ Collection and transportation to a landfill approved by the relevant regulatory authority after recording and tracking in waste register; ▪ Ablution waste will be collected by an authorized contractor, recorded and disposed of at an appropriate facility **Housekeeping** ▪ The construction area, work and storage sites shall be maintained to an orderly and hygienic standard; ▪ Housekeeping shall be taken to ensure litter accumulation is avoided through containment of all waste, including the provision of litter bins with lids on-site and weekly site inspection and maintenance duties;
Verification Criteria	▪ Zero environmental incidents from waste mismanagement ▪ Nil third party complaints ▪ Bins with lids to prevent fauna access ▪ Segregation of waste ▪ Waste register to include type, volume, collection and disposal location/facility ▪ Ablution facility effluent removed by authorized contractor for off-site

	disposal ▪ Storage, handling and disposal of hazardous waste in accordance with MSDS and recorded in waste disposal register
Verification Documentation and Records	▪ Waste Collection Register ▪ Waste Management Procedure ▪ Hazardous Waste Procedure ▪ Stakeholder Management Plan ▪ Hazardous and Incident Reporting Procedure ▪ Waste Collection Register ▪ Site Induction ▪ Complaints and Damages Form ▪ Incident Report Form ▪ ROW Inspection and Monitoring Form ▪ Weekly HSE Inspection Form ▪ Daily Environmental Checklist Form

8.8 Cultural Heritage Management

Relevant Construction Activities	▪ General construction activities
Potential Impacts	▪ The construction phase of the Project does not intersect any identified cultural heritage sites. The Project does not expect to impact any cultural heritage sites, however should an unknown site be discovered during construction works, the potential impacts could be: ▪ Damage to Aboriginal and historical heritage sites;
Objectives	▪ Avoid impacts to cultural heritage sites ▪ To protect and preserve Aboriginal and historical heritage sites and values ▪ To avoid disturbance to known European and Aboriginal heritage sites within the vicinity of the construction Project. ▪ To manage new Aboriginal heritage sites/artefacts uncovered or identified during construction
Management Measures	▪ There are no Cultural heritage sites within the Project area ▪ All Project related activities are to be within the designated Project area ▪ Designated access tracks and routes shall be established In the event that site earthworks uncover potential Indigenous heritage material, the following procedure will be actioned: ▪ All work in the immediate vicinity of the materials will cease, the area be demarcated and no further works until assessment by Traditional owners and Epic.

	▪ The Epic Supervisor will be notified as soon as reasonably practicable. ▪ Reasonable efforts to protect the materials/remains and secure the site shall be made and flagging and protective fencing will be installed to protect any sites detected. The materials/remains shall not be moved or further disturbed and buffer zones or temporary barriers may need to be established. ▪ No further work at the locations shall be undertaken until all parties have been consulted and agreement has been reached. ▪ Construction work may continue at a reasonable distance from the site as determined by Epic.
Verification Criteria	▪ 100% of new construction Project areas surveyed to identify and register Aboriginal cultural heritage sites ▪ Zero impacts to cultural heritage sites ▪ Nil cultural heritage site damage or disturbance ▪ New Indigenous heritage sites identified and reported to the Client.
Verification Documentation and Records	▪ Heritage survey completed in November / December 2012 ▪ Traffic Management Plan ▪ Daily Environmental Checklist

8.9 Noise

Relevant Construction Activities	▪ General construction activities and use of vehicles and machinery
Potential Impacts	▪ The construction phase of the Project may result in potential noise impacts within the construction area and a small potential for intermittent impacts outside the Project area. These potential impacts will be monitored to ensure compliance with requirements and avoid: ▪ Temporary potential impacts on stock and wildlife due to increased noise levels.
Objectives	▪ To minimise the amount of noise generated by construction activities through utilization of services and regulated machinery and equipment with relevant noise suppression devices. ▪ To minimise/prevent disturbance of fauna adjacent to work areas through the minimization of noise and the location of the Project area ▪ Comply with legislative requirements
Management Measures	▪ Noise monitoring to be undertaken should a noise complaint be received. ▪ All equipment is maintained in proper working order. ▪ Noise abatement barriers or covers for noisy equipment are used to minimise construction noise where appropriate. ▪ Equipment and vehicles will be fitted with adequate noise suppression systems where appropriate and other noise control devices as supplied

	by the manufacturer of the equipment and such devices will be maintained ▪ Appropriate equipment will be selected for construction. ▪ All equipment, machines and vehicles to be used on site during construction will be routinely maintained to ensure the effectiveness of noise suppression systems and equipment. ▪ All construction work will be carried out in accordance with control of environmental noise practices set out in section 6 of AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites. ▪ Compliance with Regulation 13 Environmental Protection (Noise) Regulations 1997 (general construction noise). ▪ No blasting will be required as part of the construction activities.
Verification Criteria	▪ Nil third party noise complaints received ▪ No equipment left running for extended periods (greater than 2 hours) when not in use monitored through daily visual inspections (recorded on daily inspection form) ▪ Zero breaches of noise legislation
Verification Documentation and Records	▪ Noise Procedure ▪ Hazard and Incident Report Procedure ▪ Incident Report Form ▪ Vehicle Plant and Equipment Management Procedure ▪ Equipment and Plant Register ▪ Site Induction ▪ Complaints and Damages Form ▪ Noise Level record Form ▪ Weekly Progress Reports ▪ Weekly HSE Inspection Form ▪ Daily Environmental Checklist

8.10 Dust and Air Emissions

Relevant Construction Activities	▪ General construction activities involving the use of machinery, vehicles and mobile plant such as gensets ▪ General vehicle, machinery movements and earthworks activities including clear and grade, trenching and reinstatement
Potential Impacts	▪ The construction phase of the Project has the potential to impact the environment through dust and air emissions as a result of vehicle, machinery and mobile equipment use as well as general ground disturbing activities. ▪ Impacts on sensitive flora and fauna through increased dust and air emissions;

	▪ Inconvenience to sensitive receptors such as residents and construction workforce due to increased dust emissions; ▪ Generation of greenhouse gases and other potentially reportable emissions due to increased use of machinery and equipment in the area;
Objectives	▪ To minimise impacts on the construction workforce through dust suppression and minimisation of air emissions ▪ To minimise impacts on land, water and air quality through dust suppression and minimisation of air emissions ▪ To minimise impacts on flora and fauna through dust suppression ▪ To improve level of emissions and reduce amounts of reportable emissions through minimisation of air emissions ▪ Prepare for and submit all relevant emission reports by due dates
Management Measures	▪ Daily visual monitoring of dust during construction. ▪ Vehicle speeds within Project areas shall be restricted to minimise dust, being a maximum of 20km/hr or as otherwise sign posted and walking pace (5km/hr) in congested areas, when passing personnel and subject to hazards such as dust and ground conditions or as otherwise signposted. ▪ Plant and equipment to be regularly maintained and monitored (mobile and fixed); ▪ Water shall be applied to exposed soils as required to prevent dust generation and should not lead to soil contamination (e.g. saline groundwater or contaminated waste water). Dust generated from soil stockpiles shall be minimised by ensuring exposure time is minimised, applying water, covering stockpiles with protective materials (e.g. hessian, tarpaulins), applying polymers or applying sterile grass as a longer term stabiliser on stockpiles or exposed slope batters; ▪ If all available methods of dust stabilisation fail to suppress dust and it continues to result in unacceptable impacts, construction activities may need to be temporarily halted until dust generating conditions subside or are rectified;
Verification Criteria	▪ Recorded daily visual dust monitoring ▪ Nil damage to vegetation through dust impact ▪ Nil harm to fauna due to dust impact ▪ Nil third party complaints due to dust or air emissions directly as a result of Project activities ▪ All reports submitted by due dates ▪ Commencement of the energy efficiency strategy ▪ Nil complaints regarding dust ▪ Dust suppression records
Verification Documentation and Records	▪ Dust Monitoring Procedure ▪ Stakeholder Management Plan

	▪ Incident Report Form ▪ Dust Suppression Register ▪ Hazard and Incident Reporting Procedure ▪ Soil Management Procedure ▪ Vehicle, Plant and Equipment Management Procedure ▪ Site Induction ▪ Complaints and Damages Form ▪ ROW Inspection and Monitoring Form ▪ Weekly HSE Inspection Form ▪ Daily Environmental Checklist ▪ Driving Safely Procedure

8.11 Hazardous Materials

Relevant Construction Activities	▪ General construction activities associated with the use of vehicles and machinery, as well as the use of specific hazardous materials such as paints, thinners, greases, etc. which can be involved in vehicle inspections and daily maintenance, mechanical piping and installation works, and other general construction works.
Potential Impacts	▪ The construction phase of the Project has the potential to have environmental impacts as a result of the use of hazardous and potentially hazardous materials. The quantity of hazardous materials on site is expected to be minimal due to the size and nature of the Project with the largest volume expected to be 24kL of diesel. ▪ Pollution due to spills to ground and potential contamination of soil and local atmosphere ▪ Fauna and vegetation degradation and damage due to spills to vegetation and potential fauna habitat
Objectives	▪ To minimise impacts of emergency events, the likelihood of spills and leaks of hazardous materials to the environment, and to minimise impacts to the environment in the event of spill or leak through awareness, housekeeping and management of hazardous materials. ▪ To ensure storage and handling of hazardous materials do not pose a public / environmental risk and are maintained in accordance with the relevant MSDS and environmental requirements for containment.
Management Measures	▪ HAZCHEM signs at entrance to site where hazardous materials are stored. ▪ Spill clean-up kits and Material Safety Data Sheets, will be available onsite in easily accessible locations that are relevant to the materials and quantities on site. Locations will be communicated by signs, inductions, toolbox talks, training and awareness programs. ▪ Spills will be cleaned up immediately to avoid contamination and reported immediately. ▪ Fuel and chemical storage and handling (including refueling) areas will

be inspected daily and ensure bunding and containment is effective and maintained and the areas are free of spills and contamination.

- Vehicles and equipment will be maintained to minimize the potential for spills, leaks and ruptures through weekly inspections and off-site maintenance as and if required.
- Report all spills, regardless of volume, in accordance with Hazard and Incident and Reporting Procedure, including monthly DMP reporting and other statutory reporting as required.
- Hazardous materials must have secondary containment that is at least 110% of the largest single waste container, or 25% of the total storage capacity (whichever is greater).
- All storage facilities will have necessary Dangerous Goods licences and permits, where required. All storage facilities will be integrity tested prior to placement on site, and certificates will be provided to the Licencee representative.
- A site register will be maintained including locations of hydrocarbon and chemical storage areas/facilities and associated MSDS.
- All fuel storage tanks will be bunded to capture 110% of volume and / or double skinned.
- Drip trays must be provided to capture any possible drips or spills during the transfer of fuel. This will include where there are breaks or joints in the hose. Drip trays will be able to contain a minimum of 20L.
- During refueling, the refueling station will be attended at all times.
- All drums of hydrocarbon or chemical products will be stored upright with lids in appropriately bunded and designed areas. Drums will be checked weekly for signs of leaks and corrosion. All drums and fuel storage areas will be labeled, as per the relevant legislation.
- Spill control equipment will be stored in critical locations around the site and replaced as required, including on mobile refueling trucks. Spill kits will be inspected weekly and maintained. Spillages will be contained and managed by the use of absorbent material and the excavation and removal of contaminated soil off-site to a licenced facility and recorded in the waste disposal register.
- Spills will be cleaned up and affected areas including inside bunded areas will be restored as soon as practicable after the spill has occurred.
- No maintenance shall be planned to be conducted on site. Should temporary workshops be required due to inability to remove plant from site for maintenance, areas shall be constructed to ensure bunding to 100% of potential spill.
- A complete inventory of all hazardous materials stored at site together with a complete up to date set of MSDS's for each substance is maintained.
- The amount of flammable fuel, chemicals and other hazardous substances stored at the construction site will be recorded and maintained at all times in conjunction with relevant MSDS register.
- Diesel generators are self-bunded with external bunding required if in-situ for greater than 1 week.

	▪ Fuel storage is bunded with drip trays used for all refueling activities. ▪ Fuel trailer is self-bunded with spill trays at the refueling point. ▪ Plant and equipment are weekly inspected for leaks. ▪ Spill response management is implemented as part of the emergency response arrangements including provision of spill kits on site, isolation or containment of spill, equipment available to remove contaminated soil, containment of contaminated soil and provision for authorized disposal. ▪ All staff are made aware of emergency procedures and trained in these procedures through inductions and during scheduled emergency drills which occur once every 4 weeks and shall include at least one (1) environmental incident drill. ▪ Fire-fighting equipment is provided and maintained within the construction site for the duration of construction and inspected weekly. ▪ Fuels, lubricants and chemicals will be stored and handled within containment facilities, such as bunded areas or leak trays, designed to prevent the release of spilt substances. ▪ All storage and handling equipment will be maintained in good condition. ▪ No servicing or maintenance of vehicles will be undertaken within the Project area; these activities will be undertaken off-site at authorized vehicle maintenance areas such as service stations. ▪ Only vehicles not easily transported away from the Project area will be refueled in the construction area. All other vehicles and machinery will be refueled offsite or in the designated refueling bunded area. The bund will be designed to capture 100% of the volume. ▪ A maximum of 24kL of diesel fuel will be stored within a double skinned self bunded trailered tank or the trailered tank will be stored within a bunded trailer if being transported for refueling within the site area or a constructed site bund if all refueling will be conducted at a stationery location.
Verification Criteria	▪ Zero reportable (<200l or watercourse oil spills) ▪ Zero major spills (10-200L) ▪ <10 minor spills (0-10L) ▪ Hazardous materials register maintained on site ▪ MSDS register maintained on site ▪ Storage of materials is in accordance with MSDS requirements and in designated areas ▪ Quantities over 1,000L will be stored in double skinned and / or self bunded areas or designated bounded areas to contain 100% ▪ Spill kits will be located at points of use and storage and will include as a minimum 1 x 70L spill kit and 2 x 30L spill kit ▪ Report all spills ▪ Firefighting equipment to be on site at all times ▪ Fire extinguishers to be in all vehicles and machinery

	▪ No contamination of land in or around the site created by construction activities
Verification Documentation and Records	▪ Construction Emergency Response Plan ▪ MSDS Register ▪ Spill Kit Register ▪ Incident Report Form ▪ Inductions ▪ Refuelling Procedure ▪ Hazardous Waste Procedure ▪ Hazard and Incident Reporting Procedure ▪ Waste Management Procedure ▪ Waste Collection Register ▪ Spill Kit Register ▪ Hazardous Materials Register ▪ Site Induction ▪ ROW Inspection and Monitoring Form ▪ Weekly HSE Inspection Form ▪ Weekly reports ▪ Incident reports

8.12 Soil Management

Relevant Construction Activities	▪ Hydrostatic testing activities ▪ Times of natural rainfall during construction activities ▪ Vehicle and machinery movements ▪ Vegetation clearing activities ▪ Spoil stockpile design ▪ Excavation, trenching, clear and grade, reinstatement activities
Potential Impacts	▪ The construction activities will potential result in impacts to soil through the use of machinery and excavation of soils potentially resulting in compaction, inversion and erosion of soils. ▪ Erosion and Sedimentation through lack of management of soil ▪ Inability to rehabilitate Project area due to compaction or lack of top soil for reinstatement
Objectives	▪ To avoid or minimise adverse impacts to the quality and structure of soils and terrain during construction, and maintain soil stability/integrity on the Project area during construction through the minimization of disturbance, stripping of top soil and storage and management of spoil to reduce potential for erosion. ▪ To avoid land contamination through minimization of potential for

	erosion. ▪ To conserve and reuse topsoil for rehabilitation through stripping and stockpiling.
Management Measures	▪ Topsoil (approximately 100mm) will be separated from subsoil during excavation activities. ▪ Soil erosion berms, drains and sediment barriers are cleaned or replaced as required. ▪ All activities and control measures are monitored and reviewed after heavy rainfall to address efficacy. ▪ Excavations are profiled and rehabilitated as soon as practical to minimise soil erosion ▪ Following heavy rain falls, the site is to be inspected and assessed for water pooling as soon as practical (depending on weather conditions) and dewatered. ▪ The recovery and dispersal of stockpiles when wet should be avoided where practicable. ▪ To minimise airborne dust from topsoil stockpiles, water will be applied to stabilise the surface where practicable. ▪ On completion of construction activities, compacted areas are ripped or scarified. ▪ On completion of construction activities, backfilled top soil is graded to match the surrounding terrain.
Verification Criteria	▪ Photographic records of no spoil stockpile greater than 6m ▪ Photographic records of 100mm of top soil stripped from disturbed areas ▪ Photographic records of spoil stockpile stored separately from top soil stockpiles ▪ Photo monitoring pre-clearance, weekly during construction activities, and post-reinstatement at designated locations ▪ Photographic records of reinstatement with spoil, then topsoil then vegetation (where possible) ▪ Nil significant (300m deep x 3m in length) erosion recorded in weekly inspections ▪ Photographic records of nil offsite erosion as a direct result of Project related activities ▪ Nil pipeline trench subsidence of greater than 300mm in depth ▪ Recorded daily visual dust monitoring ▪ Weekly HSE inspection
Verification Documentation and Records	▪ Incident Report Form ▪ Vegetation Clearing Procedure ▪ Dust Monitoring Procedure ▪ Reinstatement Procedure

	▪ Sediment Procedure ▪ Soil Management Procedure ▪ Dust Suppression Register ▪ Vegetation Clearing Register ▪ Site Induction ▪ Weekly Progress Reports ▪ ROW Inspection and Monitoring Form ▪ Weekly HSE Inspection Form ▪ Daily Environmental Log

8.13 Vibration Management

Relevant Construction Activities	▪ Earthworks, civil compaction and machinery movements
Potential Impacts	▪ The construction phase of the Project has the potential to impact on the environment through vibration as a result of the use of machinery and compaction tools for earthworks. This has a potential to cause ▪ Disruption to fauna through vibration of the ground
Objectives	▪ To minimise impact on social amenities of the area and disruption to fauna behaviour.
Management Measures	▪ Ensure vehicles remain on designated roads and access tracks. ▪ Project area is located within a pastoral lease and is not expected to have an impact on stakeholders through vibration.
Verification Criteria	▪ Nil third party complaints
Verification Documentation and Records	▪ Incident Report Form ▪ Vibration Procedure ▪ Complaints/Damages Form

8.14 Greenhouse Gas Management

Relevant Construction Activities	▪ Use of vehicles and machinery ▪ Use of hazardous materials
Potential Impacts	▪ The Project has the potential to impact the environment through contribution to long term air pollution through the use of vehicles and machinery and some hazardous materials.
Objectives	▪ Compliance to *National Greenhouse and Energy Reporting Act 2007*. ▪ To minimise greenhouse gas emissions through the construction cycle and recording of use for reporting purposes.

Management Measures	▪ A schedule of preventative maintenance is in place for all construction equipment. ▪ The use of Ozone Depleting Substances (ODS), such as those used in refrigerators, air-conditioners and fire extinguishers will be minimized where possible. ▪ Use energy efficiently and without waste (including turning off equipment when not in use) through awareness through induction, pre-start meetings and weekly inspections. ▪ Energy efficiency on all vehicles, plant and energy use is to be considered in the selection of equipment. ▪ Accurate records including fuel invoices are to be recorded in a timely and methodical process for the purposes of NGER reporting obligations ▪ All equipment on site is to be mechanically sound and routinely maintained. ▪ Carpool shuttles and vans to be used to reduce vehicle transport numbers where the work crew size is greater than 30 personnel and construction equipment is not being removed from site daily.
Verification Criteria	▪ Weekly Greenhouse Data Report ▪ Daily fuel use records ▪ Daily and weekly Greenhouse materials use records
Verification Documentation and Records	▪ Greenhouse Fuel Use Register ▪ Equipment and Plant Register

8.15 Reinstatement

Relevant Construction Activities	▪ Ground disturbing activities including clear and grade, earthworks, trenching ▪ Reinstatement processes
Potential Impacts	▪ The construction phase of the Project has the potential to impact on the environment through ineffective reinstatement processes. This can be caused through the lack of stripping and stockpiling of top soil and the ineffective reinstatement of spoil and topsoil to enable soil stabilization. ▪ Erosion through lack of compaction and stabilization resulting in the loss of top soil.
Objectives	▪ To minimise soil erosion potential through sound compaction and reinstatement ▪ To minimise the potential for sedimentation through sound compaction and reinstatement ▪ To minimise modification to drainage patterns sound compaction and reinstatement ▪ To minimise weed, vermin or pathogen invasion through implementation of soil management in accordance with this CEP ▪ To minimise adverse impacts on other land users through sound

	compaction and reinstatement to reduce the potential for erosion.
Management Measures	▪ The period of time between backfilling and rehabilitation of the temporary Project areas shall be minimised to less than 6 months to prevent degradation and loss of exposed soils; ▪ Waste materials and equipment shall be removed from the construction area as soon as practical; ▪ Compaction relief shall be undertaken as required by ripping or scarifying soils along the contours, particularly on heavily trafficked areas such as the construction work side, temporary access roads and turn-arounds and work sites. ▪ The construction area shall be re-profiled to original or stable contours, reestablishing surface drainage lines and other land features where areas are going to be reinstated. ▪ Native vegetation clearing minimized during the Project.
Verification Criteria	▪ Nil pipeline trench subsidence greater than 300mm ▪ Photo monitoring demonstrating spoil, then top soil re-spread over disturbed areas being reinstated ▪ Photo monitoring demonstrating ripping or scarifying soils of compacted and heavily trafficked areas ▪ Photo monitoring demonstrating reinstatement of contours and re-establishing natural contours along the pipeline alignment ▪ Photo monitoring demonstrating reinstatement of any fences and gates
Verification Documentation and Records	▪ Incident Report Form ▪ Reinstatement Management Procedure ▪ Soil Management Procedure ▪ Clearing Register ▪ ROW Inspection and Monitoring Form ▪ Photo Monitoring Register ▪ Weekly HSE Inspection

8.16 Bushfire Prevention

Construction activities have the potential to temporarily increase the risk of bushfires. Bushfire risk in relation to construction is considered low; however, it involves two primary issues. Firstly, the potential for construction activities to generate a bushfire, and secondly, the potential for bushfires to impact on the Project.

Potential bushfire ignition sources associated with construction are cutting, welding and grinding activities and the operation of equipment (e.g. petrol driven pumps) or vehicles in high fire hazard areas. This section provides guidelines for conducting pipeline construction activities in a manner which minimises fire risks.

Relevant Construction Activities	▪ General vehicle and machinery movements ▪ Hot works such as cutting, welding and grinding ▪ Storage and use of hazardous materials ▪ General construction activities and associated wastes
Potential Impacts	Through the construction phase of the Project there is the potential to temporarily increase the risk of bushfires through the implementation of various hot work activities and the use and storage of hazardous materials and general waste. Should a fire occur, this can result in the following potential impacts: ▪ Soil erosion and sedimentation of land and water through loss of vegetation and use of water to extinguish fires; ▪ Damage to, or loss of, flora and fauna through fire impacts; ▪ Damage to, or loss of, wildlife habitat though fire impacts; ▪ Temporary impacts on primary industry production through potential impacts on landholder land use for agricultural purposes; ▪ Damage to, or loss of, third party infrastructure through fire impact on services;
Objectives	▪ To minimise bushfire risk during pipeline construction through ongoing housekeeping, appropriate storage and handling of hazardous materials, firefighting equipment on site at all times and personnel awareness ▪ To protect the public and construction personnel through implementation of safe work methods and ensuring firefighting equipment on site at all times. ▪ To protect property and minimise damage or loss through implementation of safe work methods and ensuring firefighting equipment on site at all times. ▪ To prevent the spread of bushfire in the event of ignition through ensuring firefighting equipment on site at all times.
Management Measures	▪ Welding and grinding activities will take place in a controlled environment away from flammable materials, with fire-fighting equipment on hand and in an area cleared of vegetation. ▪ The construction will have fire-fighting equipment and fire extinguishers that are placed near all hot work and flammable substance storage areas, and all vehicles to be fitted with one fire extinguisher. ▪ All vehicles shall be fitted with dry chemical extinguishers (light vehicles with 1kg units, trucks/ plant and equipment with 9kg units). All extinguishers to be tagged by an approved inspector prior to mobilisation and documented on the Emergency Equipment Register. All extinguishers will be tagged and inspected and tagged 6 monthly. ▪ A site induction program that specifies the site fire management requirements. ▪ An Emergency Response Plan will be implemented and guidance notes provided for reactions to bushfires. ▪ Instructions regarding procedures for smoking in the workplace are

	implemented and a designated area for smoking maintained. ▪ All machinery exhausts are fitted with adequate spark suppression systems where appropriate and maintained in good condition, with regular vehicle inspections. ▪ Vehicle and equipment movement is managed in accordance with the site Traffic Management Plan. ▪ Vegetation stockpiles/windrows are stored in designated areas and away from ignition sources. ▪ Ignition sources / activities that have the potential to ignite fires are kept at least 5m away from flammable material. ▪ Adequate lightning protection and earthing/bonding/surge protection is maintained across the site. ▪ Smoking at designated locations away from vegetation only and removal of all butts. ▪ Construction area will be cleared to minimise ignition sources. ▪ Emergency Response Plan to include utilisation of third party assistance where appropriate. ▪ Weather monitoring shall be a consideration at pre-start meetings.
Verification Criteria	▪ Nil incidents relating to fire. ▪ All flammable materials stored in accordance with MSDS and segregated from ignition sources. ▪ Fire suppression equipment available on site and personnel trained in their use. ▪ Weather monitoring documented at pre-starts. ▪ Vehicle inspections include fire extinguishers
Verification Documentation and Records	▪ Fire risk activities are managed during the fire danger season in accordance with FESA requirements ▪ Equipment Inspection records ▪ Construction Emergency Response Plan ▪ Site Emergency Plan ▪ Incident Report Form

8.17 Emergency Planning

Relevant Construction Activities	▪ General construction activities have the potential to result in an emergency event with the potential to impact the environment.
Objectives	▪ The objectives of the Project is to minimise impacts of potential emergency events as a result of the implementation of the Project construction activities.
Management Measures	▪ Material Safety Data Sheets would be maintained for all fuels and chemicals in a readily accessible location to ensure personnel can

	access the required clean up and emergency response processes. ▪ Signs displaying emergency procedures will be posted throughout the construction area. ▪ All personnel would be made aware of emergency procedures through induction and emergency procedures would be practiced through site emergency response drills at no less than every 4 weeks including at least one (1) environmental incident drill. ▪ Spill response equipment would be maintained on-site and replaced as required after identification through the reporting and assessment of an incident, and / or the weekly HSE inspections. ▪ The minimum amount of flammable fuel and chemicals would be stored at the construction site. ▪ Hot work and/or cutting would be restricted to cleared areas as approved by the Supervisor and identified within the relevant JHA under the designated Permit-to-Work system ▪ Firefighting equipment including water tank/trailer and fire extinguishers will be provided and maintained within the construction site for the duration of construction. ▪ Visual recorded inspections would be undertaken at least weekly for evidence of spills where hydrocarbons are stored or used. ▪ All emergency situations would be investigated and the procedures implemented would be recorded, including identification of corrective actions and close out responses and follow up inspection through audit and monitoring of future similar incidents to prevent re-occurrence.
Verification Criteria	▪ Emergency response undertaken in accordance with emergency procedures verified through review of incident reports. ▪ All chemical or fuel spills will be reported internally. Where the spill is considered to have a significant environmental impact, the spill would be reported to the DMP in writing. ▪ All incidents will be reported immediately to on Site Supervisor and verified through review of incident reports. ▪ All incidents would be reported externally within 48 hours of occurrence and verified through review of incident reports. ▪ All spills would be stopped at the source and contained as soon as possible verified by review of incident reports and site inspections. ▪ Spilt material would be recovered, where possible, and contaminated soil or spill recovery materials would be collected and disposed at an appropriate licenced facility.
Verification Documentation and Records	▪ Incident Report Form. ▪ Incident Reporting Procedure. ▪ Construction Emergency Response Plan. ▪ Site Induction ▪ Spill Kit Register

8.18 Oil Spill Contingency Plan

This Oil Spill Contingency Plan is designed for prevention and outlines the response structure, strategy and relevant information needed for decision making in the event of a spill. These mitigation measures are included in Section 8.11 of this CEP.

The four key aspects of spill response are prevention, preparedness, response and recovery.

The following response is to be followed for a spill at the Project site. The recommended procedures for each step are given in the following sections:

1. Visually inspect and ascertain the nature of the spill and required response procedures (complete detail incident form).
2. Notify DMP Authorities.
3. Contain as best the spill at its source.
4. Contain any spill products.
5. Make area safe, especially with respect to fire hazards, and have the fire fighting equipment at location on standby.
6. Recover any spill products or containment consumables and dispose of these substances in a safe and sound manner.
7. Clean-up and restore the Area.

Spill Response Priorities:

1. Ensure personnel are not in danger.
2. Stop and make safe spill source.
3. Using oil spill equipment and procedures, minimise contamination area.
4. Assess requirements for return to operations.
5. Complete spill clean-up.

The incident response equipment such as Spill kits are to be made available at the site, near the hazard storage containers and fuel trailers.

9 Monitoring and Reporting

9.1 Incidents and Corrective Actions

An incident is any occurrence that can have an adverse impact (or impacts) on the environment (HB 203:2006). An incident can be a short, one-off occurrence such as an explosion or spill, or ongoing, such as a continuous emission or slow leak.

Any activity carried out during the construction of the Project that causes a material breach to Epic Energy's environmental procedures will be viewed as a reportable environmental incident. Reportable environmental incidents shall be recorded and reported using the Incident Reporting Procedure.

9.1.1 Incident Reporting

The Epic's incident reporting procedure will be used for all field activities conducted by employees and contractors. Any environmental incident, near miss, or newly identified hazard is reported under this procedure.

All personnel will report all environmental incidents involved with the PEPL Relocation Project. The procedure identifies any follow up action and provides for field suggestions to minimise the existing or future environmental risk. The reporting system has an incident and action tracking process to facilitate timely and effective close out of any identified actions arising from the incident. All environmental incident/spill reporting will also be in accordance with regulatory guidelines.

In addition, the Supervisor is to maintain the incident reporting system to minimise environmental harm and to encourage the prevention of more serious incidents. All personnel are encouraged to report minor events to act as an alert to environmental risks and to maintain a program of continual improvement.

Where an incident has the potential to have a significant impact on the environment, government agencies may need to be notified to aid with the mitigation of impacts on the environment, these include DMP and DEC.

Under the *Petroleum Pipelines Act 1969* and *Schedule of Onshore Petroleum Exploration and Production Requirements 1991* significant incidents must be reported to DMP. This is for incidents within the Pipeline Licence area(s). Incidents outside the Pipeline Licence area(s) are covered under the *Environmental Protection Act 1986* and must be reported to the Department of Environment & Conservation. Initial notice to DMP shall be verbal and must be provided at the earliest practicable opportunity, within 24 hours, and initial report within 3 days after the first occurrence of the accident or incident or the detection of the accident or incident by the operator (unless a written extension is obtained). Epic Energy is responsible for reporting incidents to DMP.

Reportable incidents include:

- leakage or escape of dangerous goods to the environment
- spills of >500 L hydrocarbons to land
- spills of hydrocarbons or other materials (such as drilling fluids, chemicals, produced formation water or substances that have the potential to adversely affect the surface vegetation, soil or subsurface ground water) that affects a ground surface area greater than 100 m2
- uncontrolled escape of >500 m^3 of gas
- an unplanned potentially hazardous event

- discharge of ozone depleting substances (during servicing or refrigeration or air conditioning equipment) inappropriate waste disposal causing environmental pollution.

Contact Details:

DMP 24-Hour Reporting Number: 0419 960 621

DMP Reporting Email: petroleum.environment@dmp.wa.gov.au.

A report in writing of any occurrence referred above shall be submitted to the Director as soon as practicable after the occurrence specifying:

- The nature of the incident;
- The date, time and place of the occurrence;
- The estimated quantity of liquid that escaped or burned
- Particulars of damage caused by the incident;
- The events as they are known, or suspected that caused or contributed to the escape;
- Particulars of methods used to control the incident;
- Particulars of methods used or proposed to be used to repair property damaged by the incident; and
- Measures taken, or to be taken, to prevent a possible recurrence of the incident.

A record of all environmental incidents, including complaints, will be maintained in an Incident Register, and will include details of the action implemented to minimize potential reoccurrence.

9.1.2 Reportable Incidents

A reportable incident is described as an incident that causes a material breach to Epic Energy's environmental procedures as outlined in this CEP, legislative requirements or licence conditions associated with the construction of the Project.

Potential reportable environmental incidents that may occur as a result include, but are not limited to:

- Spillage of fuel, oil, hydrocarbons or chemicals, resulting in contamination of soil and/or water;
- Uncontrolled release of gas;
- Introduction or spread of listed weed species;
- Excessive erosion;
- Explosion and/or fire; and
- Unacceptable reinstatement following maintenance activity.

DMP will be notified within 2 hours of any reportable incident. An incident report will be provided to the nominated DMP representative within 72 hours of any reportable incident.

DMP's Emergency 24hr phone number is: 0419 960 621 and e-mail is: environment.petroleum@dmp.wa.gov.au.

A report in writing of any occurrence referred above shall be submitted to the DMP as soon as practicable after the occurrence specifying:

- nature of the incident;
- the date, time and place of the occurrence;

- the estimated quantity of liquid that escaped or burned;
- particulars of damage caused by the escape of ignition;
- the events so far as they are known or suspected that caused or contributed to the escape or ignition;
- particulars of methods used to control the escape or ignition;
- particulars of methods used or proposed to be used to repair property damaged by the escape or ignition; and
- measures taken, or to be taken, to prevent a possible recurrence of the escape or ignition.

9.1.3 Non Conformance Reporting

If the incident constitutes a material breach to Epic Energy's environmental procedures, a non-conformance will be raised. This will be kept on a register and will highlight opportunities to improve the operational activity to ensure that work can be undertaken in an efficient manner whilst still meeting the requirements of this CEP.

9.2 Monitoring and Reporting

Environmental monitoring will be undertaken to assess compliance with stated environmental objectives, relevant regulatory requirements and to ensure that the construction of the project is conducted in a manner, which minimises impact to the environment.

During construction, additional preventative actions may be identified through review of JHAs and work processes. New preventative actions will be incorporated into JHAs, and where appropriate into the relevant procedures and the Project Hazard Register.

Corrective actions may be required to address an actual environmental impact (for instance a spill or erosion event) or near miss during construction and will be developed through incident and hazard investigations according to Incident Reporting and Investigation Procedure. These corrective actions may include actions intended to prevent a recurrence, such as an update of relevant procedures and construction documentation, JHAs and training materials.

Corrective actions identified through incident and hazard investigations will be recorded as part of that system. Through this system, actions will be assigned to a responsible person, given a due date and tracked to completion.

9.2.1 Daily

During construction, daily inspections of the construction areas will occur to ensure that the CEP requirements are being complied with.

Daily reports will be completed by Supervisors and the HSE Officer and will include environmental requirements and recognition and completion of hold points.

Copies of reports and audits will be kept by Epic and made available to RHI and Regulators as required.

9.2.2 Weekly

Weekly Environmental inspections will be conducted and a weekly HSE checklist completed. This Weekly HSE checklist will be updated upon approval of this CEP to ensure all commitments are incorporated.

The HSE Representative shall complete weekly update reports which shall be submitted to the Project Manager. These reports should include items such as environmental activities undertaken, copies of completed inspection checklists, work areas and status, completed reinstatement, monitoring undertaken, consultation undertaken and tasks to be completed.

In addition, the Weekly HSE checklist and associated HSE procedures and registers will be review upon receipt of any additional approvals and any approved Project changes to ensure relevant and consistent content and implementation.

All inspections and audits will be documented and made available and discussed with the workforce to ensure awareness of issues and ability to address hazards before they become incidents. This will be documented in the Weekly Environmental Inspection Checklist.

All weekly reports will be forwarded to the Project Manager and or Site Supervisor.

Weekly reports to DMP will be provided within 3 days of the reporting week completion by HSE Manager.

Weekly fauna inspection reports will be prepared and provided to DMP, as required, within 3 days of the reporting week completion. A final report of all fauna interactions under the Regulation 15 Licence will be issued to DEC within one (1) month of the completion of construction activities.

9.2.3 Monthly

The HSE Representative shall prepare a monthly environmental report to update the Project Manager on the activities of the previous month. This report is typically based on a summary of the weekly reports prepared by the HSE Manager and will include information regarding summary monthly fauna reports, vegetation clearing, watercourse crossings, spills, audits and areas of reinstatement.

A monthly report will be provided to DMP within 15 days after the end of the month to which it relates to. This report will include a summary of the recordable incidents, including where no incidents have been recorded for that month.

9.2.4 Environmental Monitoring Location

Photographic monitoring points will be marked at locations and not exceeding 500m distances. Photographs will be taken by the Environmental Officers at each key work stage and prior to further works commencing at the monitoring point. The construction phases at which photographs will be taken are:

- Prior to construction;
    - Prior to vegetation clearing and after pegging;
    - After clear and grade;
    - After trenching; and
    - After reinstatement.

9.2.5 Records

Epic will establish and maintain an auditable record system as detailed that will be in accordance with the principles of AS/NZS ISO 14001. The documentation will be:

- Easily located and logically filed in hard copy and electronic copy form, including the date of issue.
- Available for all Project personnel.
- Periodically reviewed and revised as necessary by authorised personnel.
- Removed from all points of issue when obsolete.
- Maintain records for a minimum of five years unless specified otherwise.

9.2.6 Monitoring

Epic will establish monitoring records for the Project prior to, during, and following construction. The following table outlines the guidelines for pipeline construction, inspection and corrective actions in the Environmental Monitoring Plan.

Table 10: Guidelines for Pipeline Construction Inspection and Corrective Action

Inspection/ Monitoring Subject	Potential Problems	Frequency of Inspection/Monitoring	Corrective Action
Soil stockpiles, cleared works areas	Dust	Daily or as required	Apply water spray as required.
Soil stockpiles, cleared works areas	Soil Inversion	Daily	Ensuring adequate space provided to accommodate separate soil and spoil stockpiles.
Areas of ground disturbance	Dust	Daily or as required	Apply water spray as required. Rehabilitate/re-surface disturbed areas as soon as possible.
Extent of disturbance along works area	Excessive area affected	Monitor during activity	Ensure no further incursions beyond immediate work area. Rehabilitate area as soon as possible.
Erosion and Sedimentation	Soil loss	Daily	Install/reinstate erosion and sediment control measures as and where appropriate.
Extent of open trench	Fauna entrapment	Twice Daily – Morning & Evening Pre-lowering-in & Pre-backfill	Prompt removal and release of trapped fauna by suitably experienced personnel
Hazardous material storage areas	Soil Contamination	Daily	Maintain containment measures. Remove contaminated soil from site and dispose to approved landfill facility.
Construction site	Litter	Daily	Remove construction generated waste and litter from

			site and dispose of appropriately.
Air quality	Pollution from vehicles and machinery	Vehicles and machinery visually inspected when introduced to site and weekly thereafter	Ensure vehicles and machinery are equipped with appropriate emissions controls and are adequately maintained.
Noise	Noise nuisance	Vehicles and machinery visually inspected (for standard noise attenuation equipment) when introduced to site and weekly thereafter	Ensure vehicles and machinery are equipped with appropriate emissions controls and are adequately maintained.
Flagging and fencing	Damage or destruction to identified sensitive areas and heritage sites	Daily	Install/reinstate damaged flagging of fences as required. Communicate locations of sensitive areas with supervisors and crew.

9.3 Complaints Management

All complaints from landowners, local authorities and the general public in relation to the activities on the Project will be recorded. The register will be made available to the regulatory authorities upon request. Actions taken with respect to complaints will be noted and the complainant advised of the outcome. Follow up is the responsibility of the Site Supervisor.

9.4 Inspections and Audits

An audit and review of environmental performance at the PEPL Relocation Project will ensure that all commitments of the CEP have been met, and that its effectiveness is reviewed and updated where necessary.

There will be 2 internal audits conducted, one within 4 weeks of mobilization and one at least 2 weeks prior to the commissioning phase of works.

DMP will be advised of the timing of the audits at least 2 weeks in advance.

9.4.1 Inspection

A weekly inspection and associated environmental inspection report will be completed by the HSE Officers and will be submitted the HSE Manger. This inspection form will be developed based on approved Project specific documentation.

The aim of the inspection and monitoring program is to ensure that construction management complies with the requirements of the CEP and associated procedures.

9.5 Management of Change

Changes to design or construction methods can have environmental impacts and may require regulatory approval.

Epic shall ensure that any required regulatory approvals (e.g. for pipeline realignment outside the easement or extra workspace areas) are obtained. Approval will be sought from in the event that design changes with environmental management implications (e.g. affecting areas outside the alignment sheet or Environmental Line List specifications) are required.

Approved changes shall be documented by the Project Manager including any additional hazard controls or Project modifications. The Project Manager shall formally notify relevant personnel of any change and details of the change shall be recorded in the Project log.

9.6 Review

This CEP will be reviewed as required throughout the construction of the Project. Reviews will be conducted to maintain the relevance of the document and ensure that all applicable regulatory changes and internal systematic alterations are maintained and reflected to ensure ongoing compliance with pipeline licence conditions.

10 References

Pilbara Pipeline System Environmental Management Plan - Operations (Document No: W-0-TYP-ER-G-001).

Environmental Management System Environmental Objectives (E-00-000-EMS-002

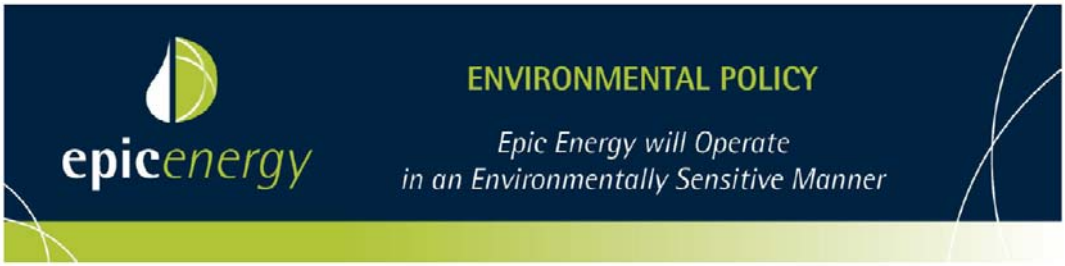
Emergency Management Plan (E-00-000-ERM-G-001)

Woodman Environmental Consulting. Roy Hill Iron Ore Ltd, RH1 Railway Project Flora and Vegetation Survey, Floristic Community Type Analysis and Survey for Conservation Significant Flora Taxa, 0-93 Survey Area. September 2011.

Terrestrial Ecosystems. Conservation Significant Vertebrate Fauna Species Habitat Assessment, Roy Hill Infrastructure Rail Corridor from Port Hedland to Chainage 262. Version 3, May 2011.

Maia Environmental Consultancy. RHI Rail Corridor: Targeted Flora Survey Multiple Areas – Chainage 2 to Chainage 148. Version 1, 2 September 2011.

Attachment 1: Epic Energy Environmental Policy



Purpose:

Epic Energy is a large gas transmission company that owns and operates gas transmission pipelines throughout Australia. The Board of Directors and the Executive Team at Epic are committed to minimising any potential adverse impact of the company's activities on the environment. This principle is in keeping with our belief that corporations must at all times be responsible in their management of environmental issues.

Scope:

This policy applies to all Epic employees and contractors.

Policy:

To achieve this objective, Epic will:

- Comply with all relevant environmental legislation and standards as a minimum.
- Integrate care for the environment into the responsibilities and work ethics of all personnel.
- Adopt appropriate new technologies and best practices that reduce the impact of its activities on the environment.
- Minimise land and habitat disturbance by applying environmentally sustainable solutions.
- Openly communicate on environmental issues with landholders and interested parties.
- Ensure significant environmental risks are identified and managed.
- Continually improve our environmental performance through regular review.
- Report on environmental performance openly and transparently.
- Monitor the environment in which we operate and adjust our practices as required.
- Endeavour to prevent pollution and develop opportunities for recycling and more efficiently using energy, water and other resources.

Approved by:

Steve Banning – Managing Director

Date Approved: 8 April 2010

Attachment 2: Risk Model for Environmental Risk Assessment

Consequence Descriptions[2]		Examples			
		Cost/ Loss	Injuries	Environmental impact	Reputation
5 Catastrophic	Would threaten the survival of the Company or one or more of its Business Units.	> $20 m	Fatalities	Regional scale, >100 ha. Major, long term/permanent impact (5 years plus). Effects widespread: viability of eco-systems or species affected:	Total outrage (e.g. Longford, Auckland (attributable to the Company)
4 Very High	Would threaten the effective operation of the Company for a period of up to a year or have a significant effect on how the Company will operate in the future.	$10 m to $20 m	Multiple Hospitalisations	Large scale, (1-100 ha). Major, long term impact (1-5 years). Rectification difficult	Major alarm and anger
3 Moderate	No threat to the effective operation of the Company, but exposes the Company to unacceptable cost consequences	$4 m to $10 m	Injury or illness requiring hospitalisation.	Localised (<1 ha) and short term impact (<1 year), easily rectified	Widespread complaints and anger
2 Low	No material impact on the Company, issues are dealt with internally	$500k to $4 m	Medical time injury (MTI)	Localised (<0.1 ha) and very short term impact (weeks), minimal rectification	Limited complaints and anger
1 Insignificant	No material impact on the Company, issues are routinely dealt with by operational areas	< $500k	Injury requiring first aid treatment	No effect; minor on-site effects rectified rapidly with negligible residual effect (days	Inconvenience, concern and some complaints

Likelihood Descriptions		Examples
5 Almost Certain	Event is expected to occur in most circumstances	Once a year or more frequently.
4 Likely	Event will probably occur in most circumstances	Once every three years
3 Possible	Event should occur at some time	Once every 10 years
2 Unlikely	Event could occur at some time	Once every thirty years
1 Rare	Event may occur only in exceptional circumstances.	Once every hundred years

Qualitative Risk Analysis Matrix – Level of Risk					
	Consequence				
Likelihood	1 Insignificant	2 Low	3 Moderate	4 Very High	5 Catastrophic
5 Almost Certain	Moderate	Significant	**Extreme**	**Extreme**	**Extreme**
4 Likely	Moderate	Significant	High	**Extreme**	**Extreme**
3 Possible	Moderate	Moderate	Significant	High	**Extreme**
2 Unlikely	Low	Low	Moderate	Significant	High
1 Rare	Low	Low	Moderate	Moderate	Significant

Legend	
Extreme	Extreme risk – Detailed research and management planning required at senior levels.
High	High risk – Immediate senior management attention needed.
Significant	Significant risk – Senior management attention needed.
Moderate	Moderate risk – Management responsibility must be specified.
Low	Low risk – Manage by routine procedures.

Measuring Risk – Dynamics	
Category	
INCREASING - The risk is increasing with time.	
STATIC - The risks are not dependent on time.	
DECREASING - The risks are decreasing with time approx.	

Risk Analysis – Level of Control	
Strong	Risk has been reduced to as low as reasonably practicable within acceptable cost parameters Meets best practice for the type of risk identified
Adequate	Controls are satisfactory, but may not be optimum Quite confident. Satisfactorily implemented. Some variance in control quality.
Fair	Marginal risk reduction Moderately confident. Quite a degree of variance in performance. Fair implementation only.
Poor	Controls need to be improved if the risk is high or extreme Additional controls should be put in place for risk

Risk Analysis – Level of Influence	
Direct	The management of the risk is largely within the Project teams control Typically applies to Operational Risks
Indirect	The management of the risk is not in Project teams control; at best the Project team can play an influencing role. Typically Applies to Strategic Risks driven by legislation, Government Policy, etc.

Risk Tolerability
The Qualitative Risk Analysis Matrix is used to determine the overall level of risk associated with identified items.

Risk Tolerability is set according to the following criteria;

All risk rated as Extreme are ranked within the intolerable region. The Stage 3 Project Management Team must apply measures to reduce these risks to a tolerable level or ALARP by modifying the task or the operating philosophy. These risks must be brought to the attention of the QSN 3 Steering Committee, who will be responsible for accepting and monitoring the risk.

Risks that are rated as High, Significant or Moderate require control measures to be applied which will bring the risk down to an acceptable level or to ALARP. The risk associated with this type of hazard is tolerable only if further risk reduction is impractical and appropriate ongoing management and review of the risk control measures is maintained.

Risks that are rated as Low are considered to be acceptable risks.

ALARP (As Low As Reasonably Practicable)
A risk is considered as ALARP; only if the hazard cannot be reduced further without the expenditure of costs that are grossly disproportionate to the benefit gained and will not be intolerable. In addition appropriate ongoing management and review of the risk control measure is maintained.

Attachment 3: Environmental Risk Register

No.	Location	Hazard	Event	Causes	CONSEQUENCES (Impact on People / Asset / Enviro)	CONSEQUENCE DESCRIPTION (what type of extent of injuries/impact)	PHYSICAL SAFEGUARDS (Identify existing Controls)	PROCEDURAL SAFEGUARDS (Identify existing Controls)	Risk Ranking		
									Likelihood	**Consequence**	**Risk**
3	Mobilisation	Traffic, weather and road conditions	Vehicle collisions Impact with wildlife	Vision impaired by conditions and driver not adjusting speed to the prevailing conditions Loss of concentration and impaired judgment due to driver fatigue	Environment/Heritage Impact	Wildlife death		Licensed drivers Site inductions Toolbox meetings Awareness Speed limits FFW designated access routes induction Confirm drivers are licensed . All employees inducted to site Establish designated parking areas	2 - Unlikely	2 - Low	LOW
12	CROW	construction activities (clear & grade, trenching, etc.)	soil disturbance	lack of procedures lack of awareness lack of marking out	Environment/Heritage Impact	soil contamination soil compaction		CEP top soil stockpiled separately adequate backfilling of trench topsoil replaced following backfilling designated laydown areas ripping on completion of construction top soil stockpiled separately installation of temporary erosion control devices as appropriate recontouring after backfill	2 - Unlikely	2 - Low	LOW
13	CROW	construction activities (clear & grade, trenching, etc.)	erosion	vehicular movements, vegetation management	Environment/Heritage Impact	loss of top soil and vegetation		Inspections CEP awareness designated tracks only speed limits only use ROW for inspections, not as general access (reduction of traffic)	2 - Unlikely	2 - Low	LOW
14	CROW	construction activities (clear & grade, trenching, etc.)	Fauna death or injury	lack of procedures lack of awareness lack of marking out	Environment/Heritage Impact	environmental damage		CEP speed limits habitat trees marked and retained where possible fauna injury management processes minimal open trench fauna ramps open trench monitoring and checking	2 - Unlikely	2 - Low	LOW
15	CROW	construction activities (clear & grade, trenching, etc.)	Fauna habitat disturbance	lack of procedures lack of awareness lack of marking out	Environment/Heritage Impact	environmental damage		mature trees marked and retained where possible CEP clearing permit	2 - Unlikely	2 - Low	LOW
16	CROW & Above ground facilities	construction activities (clear & grade, trenching, etc.)	dust	lack of procedures lack of awareness driving ROW, blow down/through of pipe work/pipeline	Environment/Heritage Impact	localised impact/contamination of surrounding area	Watering cart when necessary	CEP visual monitoring for dust dust control implementation as required commissioning procedure awareness pre-starts cleanliness acceptance of pipeline from hydro activities consideration of areas not cleaned by pigging experienced personnel	4 - Likely	1 - Insignificant	MODERATE

No.	Location	Hazard	Event	Causes	CONSEQUENCES (Impact on People / Asset / Enviro)	CONSEQUENCE DESCRIPTION (what type of extent of injuries/impact)	PHYSICAL SAFEGUARDS (Identify existing Controls)	PROCEDURAL SAFEGUARDS (Identify existing Controls)	Risk Ranking		
									Likelihood	Consequence	Risk
18	CROW	construction activities (clear & grade, trenching, etc.)	groundwater disturbance	lack of procedures lack of awareness	Environment/Heritage Impact	inundation of previously dry areas erosion		CEP local disposal of dewatering construction during drier months to minimise dewatering minimal open trench	2 - Unlikely	2 - Low	LOW
19	CROW	construction activities (clear & grade, trenching, etc.)	Noise	lack of procedures lack of awareness	Environment/Heritage Impact	public complaint non-compliance with regulations		CEP regular equipment and machinery maintenance limit of construction hours pre-start checks	2 - Unlikely	2 - Low	LOW
21	CROW	construction activities (clear & grade, trenching, etc.)	Air quality (emissions)	lack of procedures lack of awareness	Environment/Heritage Impact	pollution		CEP regular equipment and machinery maintenance emissions reporting engines turned off when not in use	2 - Unlikely	1 - Insignificant	LOW
22	CROW	Clearing operations and clear work areas for mobile plant	Damage to native vegetation	Design of service interferes with native vegetation requiring excessive clearing lack of compliance with clearing permit	Environment/Heritage Impact	Reduction of the natural habitats for local fauna Lack of compliance with statutory approvals	flagging disturbed area	No work outside the scope of the approved CEMP Native Vegetation Clearing Permit (NVCP) Any tree felling to be approved - three-cut method to fell small trees set out and marking respreading of vegetation after construction as appropriate designated laydown areas induction awareness monitoring	2 - Unlikely	2 - Low	LOW
24	Entire site	construction activities (clear & grade, trenching, etc.)	spread of weeds/seeds	lack of procedures lack of awareness vehicle movements, alignment inspection, clothing/boot contamination, equipment movement	Environment/Heritage Impact	contamination of area resulting in degradation of the environment and a potential loss of species (although it should be noted that third parties access this area for other purposes and these controls are only able to control activities related to this asset) worst case credible considered introduction of weeds rather than disease)		CEP clean on entry procedure awareness inductions weed maintenance procedure utilisation of existing disturbed areas.	2 - Unlikely	2 - Low	LOW
40	General	Chemical/Fuel/Hazardous materials Spill	Leaking hoses or pipes Chemical or waste spill to ground Plant refuelling	Spillage during transfer of chemicals from trucks or around the site lack of compliance with CEMP lack of appropriate containment	Environment/Heritage Impact	Contamination of soil under the equipment if hoses or pipes leak Contaminates leaching into ground water	bunding Spill kits are available on site	Fuel Spill Control and Clean Up Disposal of Prescribed Waste Site spillage may require contaminated soil to be removed from site Hoses and pipes are to be inspected periodically for integrity CEP SCA CERP	3 - Possible	1 - Insignificant	MODERATE

								hazardous materials/chemical register MSDS spill response procedure awareness/training induction waste management pr			
41	General	Hazardous substances – lube oils, aerosol spray, lime, fuels, paint & miscellaneous)	Exposure to harmful substances Chemicals contaminating the environment	Spillage of substances Inhalation of fumes Accidental mixing of substances in non-segregated areas	Environment/Heritage Impact	Environmental damage Fire	Segregation of chemicals and appropriate flammable storage All decanted chemicals are to be appropriately labeled & in containers that are fit for purpose Hazardous substances storage area to have appropriate signage and fire extinguishers	CEP Induction Personnel to wear appropriate PPE suitable for chemical as defined in MSDS Hazardous Substances Safety Practice Hazard Management Principles Site MSDS register Spill kit materials to be stored adjacent to hazardous substances storage area experienced personnel bunding (inc in procedures) Compliance with Hazardous Substance Management Procedure Hazardous Substances Register to be maintained with risk assessment of chemicals for site and projects MSDS register maintained for all chemicals on site and readily available for reference by all personnel Prior to chemicals being brought on site, they are to be approved by Epic Operators trained in use/fit, storage and maintenance of relevant PPE Hazard reporting	2 - Unlikely	2 - Low	LOW
43	General	House Keeping	Slips / trips / falls Fire	Rubbish laying around Materials not stored correctly Leads and hoses laying on the ground	Environment/Heritage Impact	Potential for fires	Provide rubbish bins Provide adequate storage for materials	Induction Pre-starts training on housekeeping Regular workplace inspection Instruct employees to clean work periodically during the day Introduce accountability for the standard of housekeeping	3 - Possible	3 - Moderate	SIGNIFICANT
45	General	Rain and working outdoors in the rainy season	Vehicles bogged Slips, trips and falls Personal illness	Continual exposure to rainfall Poor soil drainage Uneven and muddy ground conditions	Environment/Heritage Impact	Undue damage to ground and vegetation from bogged vehicles		PPE and inductions Daily JHA and Startup planning	4 - Likely	2 - Low	SIGNIFICANT

51	Emergency	Fire	Localised fire outbreak on project site due to project activities	Hot work in dry areas Vehicle exhausts igniting dry grasses working during fire bans	Personal Injury	Flora / Fauna death / injury	Fire extinguishers with all plant and vehicles Fire water trailer to be available on site Vehicles with under-chassis exhaust to be parked on cleared areas CROW clear and grade - no grass/debris	Emergency Management Procedure Hot Work Safety Practice Fire Prevention and Control landholder/stakeholder liaison LGA / FESA liaison for fire bans Housekeeping Induction Access ways to be unobstructed at all times Familiarise employees with emergency plan at induction Emergency Lighting maintenance and testing No smoking on site unless at designated areas Correct storage of chemicals and flammable substances Housekeeping removal of flammable waste from site Fire extinguishers tagged, checked and tested regularly Provision of a portable firefighting apparatus if necessary	2 - Unlikely	3 - Moderate	MODERATE

Attachment 4: Organisational Chart