

APPENDIX I
Operational Environmental Management Plan (OEMP)

APPENDIX 4-C: ENVIRONMENTAL MANAGEMENT PLAN

Purpose and Objectives

The Environmental Management Plan (EMP) sets out the strategies to manage the potential environmental impacts that may occur as a result of operational and maintenance activities on the assets managed by NT Gas.

The EMP assists the NT Gas employees to achieve the following environmental objectives to:

- ❑ Operate and maintain the Pipelines in a safe manner
- ❑ Operate and maintain the Pipelines corridors and right of way in a manner to minimise potential impact to the environment, land use and third parties and
- ❑ Conduct maintenance and repair activities in a manner consistent with the APIA Code of Environmental Practice – Onshore Pipelines (Part B – Operations).

Legislative Framework

The integrated management system aims to ensure that all operation and maintenance activities are performed in a manner consistent with applicable legislation and licence requirements. Each pipeline licence held has specific requirements for environmental management requirements. These include:

- ❑ Northern Territory Legislation
- ❑ Energy Pipelines Act 2005
- ❑ Energy Pipelines Regulations 2001
- ❑ Dangerous Goods Act 1996
- ❑ Australian Codes and Standards
- ❑ AS 2885.3
- ❑ APIA Code of Environmental Practice – Part B – Onshore pipeline operation.

Pipeline Licence conditions referring to environmental management requirements or practices are:

- ❑ Pipeline Licence 4 sections 3, 4, 5, 18, 19, 22, 23, 25 and Appendix 4
- ❑ Pipeline Licence 8 sections TBC
- ❑ Pipeline Licence 10 and 11 sections 31(b), 40
- ❑ Pipeline Licence 17 sections 5, 20, 22, 25, 26, 38, 39, 42
- ❑ Pipeline Licence 18 sections 6, 22, 24, 27, 28, 40, 41, 44 and
- ❑ Pipeline Licence 19 sections 5, 25, 26, 38, 39, 42.



NT Gas Environmental Management System

The NT Gas HSE management system expresses commitment to the health and safety of its people and to protecting the environment within which it operates. HSE management systems apply to all NT Gas staff, contractors, products and services. HSE management systems set out the policies, requirements, standards and guidelines that each area of the business must meet or exceed, relating to HSE management.

The development of this Environmental Management Plan (for operation and maintenance activities) expresses NT Gas's commitment to meet each of its legal obligations, through its HSE management systems.

OPERATION AND MAINTENANCE

NT Gas Key Environmental Issues

NT Gas EMP covers key environmental operational and maintenance issues that are listed below. Control measures implemented to manage these issues are described under separate headings.

The key environmental issues on the NT Gas operated network are:

- ❑ Disturbance to native vegetation and wildlife (disturbance due to vehicular movement, track clearing, repairs, etc)
- ❑ Soil compaction, erosion or release of sediment to land and water
- ❑ Subsidence of pipeline trench
- ❑ Excessive vegetation re-growth especially of weeds
- ❑ Damage to stock or native vegetation or wildlife
- ❑ Introduction of weeds
- ❑ Disturbance or destruction of indigenous or non-indigenous heritage
- ❑ Contamination of soil and water including ground water
- ❑ Gas/Noise emissions
- ❑ Odorant spillage and
- ❑ Bush fires.

Access to Pipeline Right of Way:

During pipeline operation the corridor is accessed on a regular basis. Access may be by foot, vehicle, aircraft or boat. Providing and using access routes to a pipeline corridor may have an impact on the environment.

Control measures include:

- ❑ The ROW is only to be used as an access for activities essential to ensuring continued safe pipeline operation and protection of the local environment, and not to be used as a general thoroughfare



- ❑ Access to the pipeline is via existing farm tracks and roads only – no new tracks are created to access the easement
- ❑ Public access along the ROW is not permitted unless the easement is in a public right of way
- ❑ The width of the access track is kept to the minimum practical width to enable safe vehicle movement
- ❑ In sensitive environments, vehicle access is restricted as appropriate and foot access only is permitted
- ❑ Potential impact associated with access to the pipeline corridor is monitored as part of a structured inspection and monitoring program and
- ❑ Avoid areas that are wet or have recently been flooded.

Soil and Ground Stability

Operation and maintenance activities may increase the vulnerability of the pipeline corridor and surrounding land to erosion. The potential environmental issues and the strategic measures for management of these issues are described below.

Control measures include:

- ❑ When slashing, lopping or removal of vegetation is required for easement maintenance, operations will be carried out in a manner that will not expose the bare earth to increased or accelerated rates of erosion
- ❑ Soil Conservation authorities are consulted and are used to train appropriate staff in the repair of any problems with soil erosion and sediment release
- ❑ Erosion control structures are routinely checked to ensure they are in good order and continue to be effective and if deficient are restored as soon as practicable
- ❑ Where erosion is occurring due to inadequate vegetation cover on the pipeline corridor, consideration should be given to promoting additional growth in consultation with stakeholders
- ❑ Where erosion is occurring due to inadequate water control on the pipeline corridors, consideration shall be given to establishing new erosion control structures in consultation with stakeholders
- ❑ Vehicle access is restricted to stable ground where practicable. Additional care must be taken near waterways and drainage lines and
- ❑ Potential impact associated with access to the pipeline corridor is monitored as part of a structured inspection and monitoring program.

Vegetation and Weed Management

Vegetation cover protects against erosion, reduces weed growth and contributes to production in agricultural areas. Weeds are any plant growth that invades areas of native vegetation. Pipeline corridors have the potential to harbour weed species. Weed growth usually effects the health of natural vegetation, productivity of agriculture etc.



Control measures include:

- ❑ Regrowth trees that are within three metres of the trench centre line are removed at seedling or sapling stages to ensure tree roots do not create a safety risk to the pipeline. This is in exception to the Desert Grass Tree, *Xanthorrhoea Thorntonii*, which cannot be felled as required by licence conditions
- ❑ The access track is kept navigable by adequately controlling vegetation growth
- ❑ Care must be taken not to disturb any areas of native vegetation outside the access tracks or pipeline corridor access track
- ❑ Revegetation success is monitored in accordance with an approved monitoring program. Further restoration works may be required in areas where vegetation establishment has been less than acceptable
- ❑ Pipeline route is regularly inspected and monitored for weed control
- ❑ Some field personnel are trained in weed identification and techniques for their eradication
- ❑ Maintenance personnel are aware of weed control techniques and their activities are monitored by trained operators and
- ❑ All weeds within the pipeline easement are to be removed as far as reasonably practicable
- ❑ Vehicle and machinery hygiene procedure

Disease:

Movement of operation and maintenance vehicles, equipment and personnel may spread disease along the pipeline corridor.

Control measures include:

- ❑ Should an area be declared an affected disease area, management practices will be implemented as recommended by Department of Infrastructure, Planning and Environment

Earthwork and Land Use:

Earthworks may be required during maintenance activities for construction of additional facilities and inspection of the buried pipeline within the corridor.

Control measures include:

- ❑ Hazard netting shall be places around excavations to prevent entrapment of animals
- ❑ Where practicable, all relevant residents, landowners and third parties shall be notified in advance of any disruptive activities and
- ❑ Consultation with landowners shall be maintained and documented.
- ❑ All imported soils will be sourced from registered quarries to ensure the transfer of weeds or weed seeds is minimised.



Bushfire Prevention

Generally, the risk of bushfire as a result of pipeline operation and maintenance is considered low. Ignition sources are many and varied.

Control measures include:

- ❑ Pipeline operations and maintenance shall be conducted in accordance with the requirements of the local regulatory and local fire authority
- ❑ All equipment shall comply with relevant fire safety standards
- ❑ Where flammable or combustible chemicals are required to be stored on-site, appropriate containers shall be used and fire-fighting equipment shall be available. Incompatible chemicals shall not be stored together
- ❑ Incompatible chemicals shall not be stored together
- ❑ Firebreaks shall be installed and maintained at facilities as appropriate
- ❑ Staff shall be trained in basic fire fighting techniques
- ❑ Clear vegetation for above ground facilities and the areas around above ground facilities to minimise the risk of bushfire
- ❑ Slash and spray weeds and
- ❑ Use diesel fuelled vehicles generally to eliminate the risk of hot catalytic converters coming into contact with vegetation and igniting a fire.

Air Emissions

Activities such as purging, flaring, creating dust etc may occur along the corridor and may have adverse effects on air quality.

Control measures include:

- ❑ Purging and flaring procedures are used to manage the environmental risks associated with air emissions when these activities take place on the pipeline
- ❑ The planned release of gas from the pipeline shall be minimised for economic, environmental and greenhouse gas emission reasons
- ❑ Periodic leakage detection surveys shall be conducted to detect gas leaks
- ❑ Gas vents shall be located at appropriate distances from residential areas and infrastructure
- ❑ Adjacent residents and local authorities shall be advised of pending major venting operations prior to undertaking the activity
- ❑ Odourisation of the gas shall be undertaken in a manner to minimise the risk of accidental release of the odorant and
- ❑ Odorant spillage control procedure and training shall be current



Noise Emissions

Vehicle movement may generate noise emissions, above ground maintenance, gas vented from pressurised equipment and above ground equipment, at line valves and scraper stations and at the Warrego Compressor Station. Noise emissions can impact residential areas, stock and wildlife.

Control measures include:

- ❑ equipment shall be selected with consideration to noise emissions
- ❑ Local residents shall be informed of potential noise from maintenance or project activities prior to the commencement of those activities
- ❑ Where appropriate noise monitoring shall be conducted and
- ❑ Appropriate strategies for dealing with noise complaints shall be implemented. In particular, all complaints including noise shall be investigated and remedial action shall be undertaken as required.

Heritage and Sacred Sites

Heritage sites are of cultural value to the community and are protected by law. Such sites may comprise areas or items of archaeological, anthropological, ethnological, environmental or scientific significance. It is unlikely that damage to sites would occur during pipeline operation, however, inadvertent disturbance is possible.

Control measures include:

- ❑ At present, there are no sacred or heritage sites being impacted by the pipeline's corridors. In the event work is required to be done outside the ABDP corridor, heritage and sacred site clearances must be obtained from the relevant authorities.
- ❑ Permits are required to access the pipeline on Central Land Council and the Northern Land Council lands. Staff has the right to travel on the land using designated access routes for work purposes only.

Water Management

Run-off from pipeline easements can cause impacts associated with; sediment loads to streams, the potential for spills of product or chemicals, and the maintenance of appropriate surface and ground water flows.

Control measures include:

- ❑ Erosion and sedimentation shall be managed in accordance with Part B Section 4.2.1.2 Soil and Ground Stability, Code of Environmental Practice, APIA
- ❑ As a priority, water crossings shall be maintained in a stable condition
- ❑ Stability of the pipeline corridor, and in particular the condition of watercourse banks, shall be inspected
- ❑ Erosion control measures such as silt fences and drains shall be appropriately maintained



- ❑ Appropriate remedial action shall be undertaken if erosion and sedimentation occurs; Conduct regular pipeline surveillance and monitoring for any problems due to altered drainage patterns of some water flows along the route of this pipeline and
- ❑ Conduct any repairs promptly to minimise wash away and erosion at watercourses.

Management of Pipeline Facilities

Above ground facilities associated with pipeline operations include; compressor stations, main line valves, delivery facilities, and scraper stations. These facilities may have a negative impact on the environment.

Control measures include:

- ❑ Pipeline facility sites are fenced and locked to prevent entry by unauthorised persons
- ❑ Fire fighting equipment is maintained on-site in areas of high fire risk and
- ❑ Pipeline facilities are kept in a clean and tidy state.

Fuel and Chemical Storage and Disposal

Pipeline Operation activities can involve the use of fuel and other chemicals. These are to be managed to ensure there is no unwanted release or spillage.

Control measures include:

- ❑ The storage and handling of fuels and chemicals comply with all relevant legislation and appropriate standards eg. AS 1940- The storage and handling of flammable and combustible materials
- ❑ ChemAlert Material Safety Data Sheets (MSDS) are obtained when purchasing chemicals
- ❑ Chemical use is minimised where possible
- ❑ Company procedures and manuals such as Chemical Management, Environmental Manual, and Risk Register are followed to properly manage fuel and chemical storage
- ❑ Quantities of stored fuel and chemicals are minimised
- ❑ ChemAlert sheets MSDS are available for all hazardous chemicals and
- ❑ Chemical storage sheets are located at each manned base
- ❑ A receipt or record of chemical disposal must be received from the contractor receiving the disposed chemical and forwarded to the Purchasing Officer. The Purchasing Officer will save this receipt as a record of disposal by attaching it to the invoice for the service provided.



NT Gas System and Procedural Control Measures

The integrated management systems/processes in place at NT Gas used to mitigate the risks to the environment include:

- ❑ Environmental impact assessments
- ❑ Work permit process
- ❑ Job Hazard Analysis
- ❑ Weed Management Manual
- ❑ Documented Instructional Policies
- ❑ Continual improvement process
- ❑ Hazard identification and control and
- ❑ Designated access and egress to the pipeline ROW (Access Manual).

A complete listing of specific guidelines, systems and policies incorporated into the integrated management system is given in Appendix 5-B Maintenance Policies.

Monitoring and auditing

This EMP is to be reviewed biennially as part of the PMP review and updated if changes to the environment issues and control procedures occur.

The EMP is audited as an integrated part of the PMP.