

Environmental Management Plan



PROPOSED CHANDLER FACILITY DRAFT ENVIRONMENTAL MANAGEMENT PLAN

Draft Report | October 2016





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ABBREVIATIONS

AQMP	Air Quality Management Plan
BFMP	Bushfire Management Plan
BIMP	Biting Insect Management Plan
BMP	Biodiversity Management Plan
CEMP	Construction Environmental Management Plan
CHMP	Cultural Heritage Management Plan
CLC	Central Land Council
DME	Department of Mines and Energy
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environment Protection Authority
ERP	Emergency Response Plan
FRMP	Flood Risk Management Plan
Km	kilometres
LCP	Landscape Concept Plan
MLA	Mining Lease Area
MMP	Mine Management Plan
NT	Northern Territory
NVMP	Noise and Vibration Management Plan
OEMP	Operational Environmental Management Plan
RCP	Rehabilitation and Closure Plan
RCP	Rehabilitation and Closure Plan
SEMP	Sediment and Erosion Management Plan
SIMP	Social Impact Management Plan



TMP Traffic Management Plan

WMP Water Management Plan



1 INTRODUCTION

1.1 Purpose

The Draft Environmental Management Plan (EMP) for the proposed Chandler Facility (the Proposal) within Northern Territory (NT) Mining Lease Area (MLA) 30612 is being submitted as a requirement of the Final Terms of Reference for the Environmental Impact Statement (EIS) under the NT *Environmental Assessment Act*.

The purpose of the draft EMP is to provide:

- Environmental objectives and performance targets for construction and operation.
- Required statutory and other obligations, including consents, licences, approvals and voluntary agreements.
- Management policies, procedures and review processes to assess the implementation of environmental management practices and the environmental performance of the Proposal against the objectives and targets.
- Requirements and guidelines for management in accordance with:
 - Conditions of consent for the Proposal.
 - Mitigation measures specified by this environmental assessment.
 - Relevant construction management guidelines.
- Requirements in relation to incorporating environmental protection measures and instructions in all relevant standard operating procedures and emergency response procedures.
- Specific procedures, including monitoring, as defined by the environmental assessment and the conditions of consent.
- Roles and responsibilities of all personnel and contractors to be employed on-site.
- Procedures for complaints handling and ongoing communication with the community.
- Environmental sub-plans, including:
 - Mine Management Plan.
 - Biodiversity Management Plan.
 - Bushfire Management Plan.
 - Water Management Plan.
 - Sediment and Erosion Management Plan.
 - Cultural Heritage Management Plan.



- o Safety Case.
- o Air Quality Management Plan.
- o Noise and Vibration Management Plan.
- o Social Impact Management Plan.
- o Rehabilitation and Closure Plan.
- o Biting Insect Management Plan.
- o Traffic Management Plan.
- o Flood Risk Management Plan
- o Landscape Concept Plan
- Incident response procedure.
- Monitoring and auditing program.

This document provides the overarching framework for environmental management and will provide the basis for development of the Construction Environmental Management Plan (CEMP), Operational Environmental Management Plan (OEP) and Rehabilitation and Closure Plan (RCP).

An environmental monitoring program enables auditing of mitigation measures to ensure they achieve their objectives and to facilitate modification, where necessary. An environmental monitoring program would be established for both the construction and operational phase of the Proposal. Monitoring requirements would be listed within the CEMP, OEMP and RCP.

1.2 Scope

The EMP has been structured in the following sections:

Section 2 Project Overview

- Summary of the Project details including operator details, title details and location.

Section 3 Stakeholders

- Provides a summary of identified stakeholders and strategy of engagement throughout the project life

Section 4 Environmental Management Obligations and Commitments

- Identifies and records obligations and commitments for environmental management of the Proposal

Section 5 Regional Description

- Summary of site conditions from previous assessments undertaken at the Project

Section 6 Project Activities

- Outlines key activity areas and components within the Proposal



Section 7 Risk

- Provides an outline of risks identified at the Project in relation to the environment.

Section 8 Approval and Legislative Requirements

- Outlines environmental approvals, Commonwealth and Northern Territory legislation and relevance to the Project.

Section 9 Environmental Management System

- Outlines the environmental management system, attributes responsibilities, internal and external reporting requirements and the management of non-conformance and complaints.

Section 10 Management Plans

- Provides a summary of the management plans relevant to the Proposal and Sub-management plans required

Section 11 Management of Information and Data

- Details information management system in place

1.3 Environmental objectives

The EMP is a document to manage potential environmental risks that may be present during the construction and operation of the Proposal.

1.4 Document review

This draft EMP is a 'live' document, and will be reviewed and revised as the Project progresses through the design/planning stage to the construction and operation phases.



2 PROJECT OVERVIEW

2.1 Overview

The Proposal would comprise:

- Mining a salt (halite) bed at a depth of about 850 metres below ground level (bgl).
- Providing for the permanent isolation of hazardous waste¹ or the temporary storage of materials in void spaces left from salt mining.
- Haulage of salt products and waste materials via private haul roads.
- A Storage and Transfer Facility known as Apirnta located adjacent to the Darwin to Adelaide railway.
- Transport of salt to port via rail.
- Delivery of waste predominantly by rail.
- Transport of workers and mine consumables via public and private roads.

The Proposal includes two key sites, the Chandler Facility and the Apirnta Facility (comprising a rail siding and transfer station), which combined, comprise the Proposal.

2.2 Location

The project is located approximately 120 kilometres (km) south of Alice Springs in the NT (Figure 3-1). The project site is currently accessed from the Maryvale Road. The Maryvale Road is predominantly unsealed for approximately 100 km and links Alice Springs to the Aboriginal Community of Titjikala, Maryvale store and the Chambers Pillar Road.

2.3 Land ownership

Tellus will apply for a conversion of land from pastoral to Crown reserve in perpetuity under the NT *Crown Lands Act*. This process will execute an agreement between existing landowners on Maryvale and Henbury Estates and Tellus.

Tellus will compensate both landowners for the right to use the agreed parcel of land for the construction of mine access and / or ancillary mine infrastructure. The NT Department of Lands Planning and Environment will facilitate negotiations between Tellus and landowners. They will also execute the final land access and necessary conversions.

¹ Hazardous waste is a generic term but is equivalent to Listed Waste in the Northern Territory and by other descriptions in other states and Territories.



2.4 Mining tenure

The project is owned by Tellus. Present tenure includes 5 granted exploration licences and MLA 30612 which was lodged on the 10th October 2014.

2.5 Contact details

The Proponent's details are:

Tellus Holdings Ltd

Suite 2, Level 10
151 Castlereagh Street
Sydney NSW 2000
Tel: +61 2 8257 3395

The key contact for this draft EMP is:

Mr Richard Phillips

Environment and Approvals Manager

Suite 2, Level 10
151 Castlereagh Street
Sydney NSW 2000
Tel: +61 2 8257 3395
Email: richie@tellusholdings.com



Figure 2-1 Proposal location



Key information about the Proposal is listed in Table 3-1.

Table 2-1 Key Proposal information

Characteristic	Description
Property	Northern Territory Portion 810
Registered use	Cattle grazing
Planned use	• Salt mining of an average of 895,000 tonnes per annum with salt processing deferred for the first 5 years of mining operations. • The storage, disposal, and permanent isolation of up to 400,000 tonnes per annum of waste material (30,000t in year 1)
Planned life	Four years of construction plus 25 years of operation.
Capital expenditure	\$644.5 million (nominal, including finance).
Employment	
Construction	270-540 workers (including indirect)
Operation	180-216 workers
Surface footprint disturbance	
Chandler Facility (including camp)	219hectares
Apirnta Facility (including rail siding)	170hectares
Other (roads and services)	231 hectares
Underground footprint	
Proposed mining area (including decline and shaft pillar)	403 hectares
Operations	
Salt production (export)	Life of mine average of 750,000 tonnes per annum (tpa) from year 6 of mining operations.
Waste storage	Maximum of 400 ktpa waste sales (Yr1 30kt, annual av. 293kt)



3 STAKEHOLDERS

3.1 Introduction

The key external stakeholders of the Proposal are identified in the EIS. In summary, they include:

- The NT Department of Mines and Energy (DME).
- The NT EPA.
- The CLC.
- Traditional Owners.

Each of the key external stakeholders have been consulted during development of the EIS. Should the Proposal be approved, Tellus will continue to consult with the above stakeholders through the development of the EMP.

3.2 Stakeholder identification

‘Stakeholders’ are defined as internal and external parties who are likely to affect, to be affected by or to have an interest in mine closure planning and outcomes.

The internal stakeholders for mine closure are:

- The Tellus Board and Executive Management
- Project Manager – Mr Stephen Hosking
- Mine Manager – To be confirmed
- Environment and Approvals Manager – Mr Richard Phillips

A list of key external stakeholders and interested parties can be found in Table 4-1.



Table 3-1: Stakeholder list through the development of the Chandler project

Stakeholder category	Sector / Group
Aboriginal groups	Native title claimant groups
Government	Commonwealth government representatives Northern Territory government representatives Local government representatives
Non-government organisations and service providers	Community groups Environmental groups Research institutions Private sector service providers (including indigenous businesses)
Industry and business	Regional and economic development boards Local and regional industries and businesses
General public	Local Regional State National

3.3 Stakeholder engagement register

3.3.1 Stakeholder engagement strategy

Purpose of Communication

For mine closure to be effective, engagement with stakeholders is required at every phase of the Chandler Project. The Community Engagement and Development Handbook (DITR, 2009) outlines two frameworks generally implemented by miners to engage with the community and stakeholders.

Tellus considers the International Association of Public Participation (IAP2) process as the appropriate framework for the Chandler Project, as it allows for a continuum of consultation with stakeholders. Tellus has interpreted the purpose of each type of engagement as described below:

- **Inform** – providing information about the mine.
- **Consult** – direct conversation on specific areas of risk and opportunity in relation to mine closure.



- **Involve** – interactive mode between Tellus and the stakeholder to achieve a common closure outcome.
- **Collaborate** – Stakeholder-driven consultation on aspects of closure.
- **Empower** – participation in planning and decision-making, not only on issues related to operational impacts, but also on decisions regarding the community's future once the mine has closed.

In the initial stages of mine closure planning, Tellus will inform stakeholders of the plans for mine closure. As the project develops and is operational, there will be a move towards the consult, involve and collaborate forms of engagement. Nearing the end of the mine life, there may be opportunities to empower stakeholders. The purpose of communication and method chosen will be evaluated following each engagement event, and reflected upon during the three yearly review of this MCP.

Methods of Communication

Single or multiple methods may be used to communicate with stakeholders, depending on the purpose of the communication. Several methods are listed in Table 4-2.

Table 3-2 Communication methods

Purpose	Method
Inform	Information booths, media releases, newsletters, brochures, mail out programs, websites and hotlines.
Consult	Public meetings, discussion groups, polls, surveys and focus groups.
Involve and Collaborate	Workshops and discussion groups, learning circles, interviews, reference groups and community consultative committees.
Empowerment	Site visits, direct phone calls and electronic mail.

Targeted Communication

The consultation to be undertaken prior to the submission of the next revision of this EMP includes:

1. Discussions internally within Tellus to agree on any required changes to the post-mining land use and closure objectives (Section 5). If changes are proposed, these are to be assessed and a list of changes to the Closure Obligations Register (Section 6), Collection and Analysis of Closure Data which is built on baseline data and Closure Implementation (Section 10) and Closure Monitoring and Maintenance (Section 11) prepared.
2. The list of required changes will be discussed with all external stakeholders with the aim of achieving agreement.
3. Once agreed, Tellus will make the changes to the sections outlined above, and also recalculate and amend the Financial Provisioning for Closure (Section 11).

The revised EMP will be issued to all external stakeholders for comment, and where appropriate comments incorporated.



Adequate Resources for Engagement

Financial resources as documented in Section 12, have been allocated for expenses related to carrying out stakeholder engagement.

In this draft RCP the Project Planner/Engineer and the Environment & Approvals Manager are responsible for stakeholder engagement, and have adequate time available as part of their current roles to engage with stakeholders.

Documentation

All stakeholder engagement, regardless of purpose or form, will be recorded.



4 IDENTIFICATION OF ENVIRONMENTAL MANAGEMENT OBLIGATIONS AND COMMITMENTS

4.1 Legal obligations register

The Proposal's environmental commitments contained within the EIS and, subject to planning approval, conditions of consent, will be used to fulfil a legal register for the Proposal. This would be completed in conjunction with the Proposal's Mining Management Plan (MMP). The Proponent will comply with the legal requirements both of the NT and the Commonwealth of Australia.

A mining agreement is currently being negotiated with Traditional Owners and environmental commitments will be set under the agreement as facilitated through the CLC. The mining agreement details Tellus' environmental commitments made to protect Traditional Owners and traditional land use. The details of the mining agreement with the Traditional Owners are confidential and cannot be disclosed in this document.

Accordingly, the overall objective of environmental management is to manage potential environmental risks that may be present during the development and operation of the Proposal.

The environmental management strategy will remain flexible and can be amended as operations evolve, new techniques are developed, and environmental investigations progress.

All legal obligations relevant to environment management and reporting at Chandler are identified in the Legal Obligations Register (Table 4-1). Note: this register will be updated following receipt of environmental approvals.

Table 4-1 Legal obligations register

Relevant DME conditions

Tenement No	Condition No	Closure Conditions
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Ministerial Statement (Date)

Condition No	Condition
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Works approval (No and Date) Relates to Tenement No.

Condition	Aspect Related to Closure
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Waste Management Pollution Control Act

Environmental Approval No.

Environmental Licence No.

Condition	Aspect Related to Closure
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5 REGIONAL ENVIRONMENT

5.1 Climate

The location of the study site falls within the arid zone of Central Australia.

Climate data taken from the Alice Springs weather station indicates that average annual rainfall is approximately 274 mm per year. Average annual evapotranspiration rates are on average approximately 3,100 mm per year.

Average daily temperatures range in summer from 22-36 °C to winter temperatures of 4-20 °C. Maximum summer temperatures can reach 45 °C with overnight temperatures sometimes dropping below freezing point.

5.2 Geology

The Tellus exploration leases are located within the Amadeus Basin in the southern region of the Northern Territory. The Amadeus Basin is an asymmetrical, east-west trending, intracratonic depression covering 155,000 km² of central Australia.

The site location lies within surface outcrop of undifferentiated Quaternary cover consisting of quartz sands, with some Tertiary Silcrete and Devonian Sandstone outcrops (Santo Sandstone). The site location lies towards the south of the Central Ridge and is not associated with any major local or regional structural elements.

The stratigraphy within the Chandler area has been well defined from drilling of historic petroleum wells Mt Charlotte 1 and Magee 1, and correlate well with recent drilling completed by Tellus.

A soil survey was completed in April 2015. An examination of the CSIRO (2000) Atlas of Australian Soils – Northern Territory Portion and NRETAS Database shows the soils as category B43 sand dune fields and siliceous sands.

5.3 Groundwater

The project area falls within the south-eastern groundwater system of the Amadeus Basin which is characterised by geographical folding and faulting which has resulted in the development of a regional fractured rock aquifer of low to moderate productivity.

Three major sandstone aquifers are north-west of the Amadeus Basin; the Mereenie, Pacoota and Hermannsburg Sandstones. In the north-west, the three main aquifers act independently, separated by two main aquicludes (Parke Siltstone and Horn Valley Siltstone). The three sandstone aquifers act as a double-aquifer system in the central Amadeus Basin as the Parke Siltstone is absent. In the eastern region of the basin, the three sandstone formations are hydraulically connected and act as a single, widespread sandstone aquifer.



The recharge area for the Great Artesian Basin (GAB) lies about 70 km to the southeast of the Charlotte Blocks (the project area) and the linkage between the two areas is low or non-existent due to the lack of connectivity between the fractured rock aquifer system and the porous regional aquifer system of the GAB (Aurora Environmental, 2012).

5.4 Surface water

Tellus' leases lie on the easterly edge of the Amadeus Basin. It is within the Finke bioregion, characterised by arid sand plains with dissected uplands and valleys. The region has extensive low-lying topography with a drainage network that can best be described as being 'uncoordinated' (Finlayson *et al* 1988). Surface waters drain inland and not towards the coast. There are two major inland river systems bordering the project area. They are the Finke River and the Hugh River. The Hugh River is a major tributary to the Finke River system.

The Finke River lies to the west and south west. Its tributaries flow to the east and southeast and elevations range from 28 m AHD (Australian Height Datum) to 1500 m AHD. The Hugh River is approximately 15-20 km to the east of the site and dissects Chambers Pillar Road. The two river systems are formed in arid zones, and flow over hundreds of kilometres. They have particularly low and infrequent flows.

There are no major lake bodies in close proximity to the project area. A man-made dam on the Maryvale Station (Halfway Dam) lies within the southern boundary of the proposed surface infrastructure area. Tellus proposes to remove this dam as part of the proposal, for which the pastoralist will be offered compensation.

Rain gauges installed adjacent to hydrographic stations provide information on total rainfall and rainfall localisation. North, south, east and west facing photographs of the rain gauges enable a ground cover monitoring system similar to the NTG tier 2 pastoral vegetation monitoring stations. Although there are no major surface water bodies such as lakes in the area, clay saltpans, water courses and floodplains are periodically inundated after rain. Due to higher clay content in some low lying areas, clay/salt pans are capable of holding surface water for longer periods of time.

5.5 Flora and fauna

The bioregion is dominated by Mulga with various *Senna*, *Eremophila* and *Acacia* species present over short grasses and forbs. No Critically Endangered, Endangered or Vulnerable species listed under the Territory Parks and Wildlife Conservation Act have been recorded in the vicinity (NRETAS Database).

Seasonal flora and fauna surveys of the proposed mine infrastructure area, camp site, access and haul roads and the Apirnta rail siding area have been carried out since Spring 2013. The results of seasonal surveys indicate none of the sites are constrained by rare, threatened, endangered or critically listed plants or animals.



5.6 Cultural heritage

A search of the NT Archaeological Site Register (Heritage Branch of NRETAS) has indicated that registered archaeological sites have previously been recorded in the vicinity of the project area, but none are recorded within it. The closest sites are located at Chamber's Pillar and a location to the north of EL28900 (around 24.80S and 133.75E GDA94).

The Aboriginal Areas Protection Authority (AAPA) have provided an Abstract of Records in relation to land covered by Tellus Exploration Licenses (Correspondence: File: 2012/1238 No. 201213299) and advised that there are no records of sacred sites listed within the area.

The Central Land Council (CLC) issued two sacred site clearance certificates for exploration activities within a defined boundary.

Desktop and field cultural heritage surveys have been completed. Field surveys included consultation with Traditional Owners. The project area does contain items of cultural importance but can be easily managed through the implementation of a cultural heritage management Plan. The layout of the surface infrastructure will be designed to avoid known items of cultural heritage.



6 PROJECT ACTIVITIES

For the purposes of environmental management, the Proposal has been divided into five key areas of activity. They are:

- The Apirnta Facility – which includes a rail siding.
- The Chandler Facility (above ground).
- The Chandler Facility (below ground).
- Accommodation village.
- Bore field and pipelines.

Figure 6-1 shows the locations of the above areas of activity. Details of each aspect is outlined in the following sections.

6.1 Apirnta Facility

The Apirnta Facility will cover an area of approximately 170 hectares. The Facility includes a rail siding, storage and transfer area, and access road.

6.1.1 Rail Siding

The rail siding will cover an area of approximately 55 hectares. The siding track has been offset from the mainline to provide clearance from existing services. Opportunities to move the siding track closer to the main line will be investigated during detailed design. Moving the track closer to be the mainline could reduce the overall disturbance footprint.

An elevated hardstand (nominally 1800m long by 30m wide) is proposed adjacent to the rail siding track.

6.1.2 Storage and transfer area

The storage and transfer facility will cover an area of approximately 115 hectares. The storage and transfer area will be located adjacent to the rail siding and incorporates the following components:

- Inspection shed and office
- Weighbridge
- Vehicle wash-down facility
- Workshop
- Quarantine area
- Internal roads and access ways
- Lighting



- Security fencing and gatehouse
- Fuel farm
- Power generation
- Waste water treatment plant
- Potable water treatment plant
- Site office/administration building
- Car park

6.1.3 Access road

The Apirnta access road will cover an area of approximately 128 hectares.

The access road will be approximately 56km in length and will connect the Stuart Highway to the Apirnta Facility.

6.2 Chandler Facility (above ground)

The Chandler Facility will cover an area of approximately 219 hectares.

6.2.1 Run of mine salt stockpile

The Chandler surface layout includes a run of mine salt stockpile of up to 3.5Mt. Salt processing will be deferred for the first 5 years of salt mining to allow waste operations to ramp up unencumbered and for pilot processing and test work to be carried out prior to full operations and product export.

Tellus will use the run of mine stockpile as a blending feedstock to the salt processing plant as well as bulk salt backfill for underground closure activities.

6.2.2 Other stockpiles

Spoil from the mine development and underground development within the strata overlying the Chandler Salt bed will be segregated and stockpiled on surface.

These stockpiles will be used for bulk earthworks and road building and maintenance where appropriate during the initial construction phase and during operations.

Remaining stockpiles will be utilised in the shaft and decline backfilling activities at closure. All stockpiles will therefore be fully drawn down by closure.

6.2.3 Run-off detention basins

A run off detention basin will be constructed adjacent to the salt stockpile to capture run off and trap salt carried in solution from the stockpile.



Figure 6-1 Location of Proposal activity areas



6.3 Chandler Facility (below ground)

The life of mine below ground footprint (including decline and shaft pillar) will cover an area of 403 hectares.

6.3.1 Salt rooms

The underground workings would be developed by room and pillar using continuous miners. The rooms would be 250 long by 6m high by 15m wide. It is estimated that approximately 313 rooms would be mined over the 25 years of operations.

Each room would be progressively filled with waste materials, either by hydraulic placement via a surface hydraulic backfill plant and pipeline, or by dry placement of bulk bags, drums or similar packaging. Fine salt would be placed around all dry placed waste packages and an integrated operational activity. The underground rooms and development drives would be progressively closed using bulk salt from the mining operations.

6.3.2 Decline access

The mine will be accessed by a 5.5km long decline, development by drill and blast. Any aquifer contacts during construction would be grouted and sealed prior to development into the salt bed.

6.3.3 Shafts

The mine development will also include 2 shafts each of 5m finished internal diameter. The purpose of each shaft can be summarised as follows:

- An 860m Air Intake Shaft, also used for personnel conveyance and salt hoisting
- An 820m Air Exhaust Shaft

6.4 Accommodation village

The accommodation village will cover a total area of 15 hectares and consists of a car park, workshop, accommodation units, dry mess, offices, and sewage system.

6.5 Bore field and pipelines

Pipelines will consist of PVC pipe to connect borefield to infrastructure area such as the mine site and camp.



7 RISK

7.1 Risk Assessment

During preparation of the EIS, a series of detailed risk workshops were undertaken to identify risks that may impact the environment during construction and operation of the Proposal.

7.2 Identification of Environmental Risks

Each technical discipline considered both direct and indirect impacts of the Proposal. After pre-mitigation risks were identified, proposed relevant mitigation and management measures were assessed.

Following the adoption of mitigation and environmental management measures, a second risk assessment (post mitigation risk assessment) was undertaken to account for these measures.

7.3 Controls and Mitigation Measures

Future controls and mitigation measures that were identified (Table 7-1) and will be further developed through detailed design and detailed management plans.

Table 7-1 List of controls and mitigation measures

Category	Environmental control and/or mitigation measure
Occupational health and safety requirement	Personal protection equipment including equipment used in hazardous locations.
	Testing for gases
	Provisions of full time emergency services
	Enforcement of safe working practices
	Provision of adequate safety measures for electrical equipment, working at height, confined spaces and other hazardous work conditions.
Construction and operation	Monitoring of groundwater conditions
	Monitoring of surface water conditions
	Monitoring of air quality conditions
	Enforcement of policies and procedures for management of hazardous materials including chemical, fuels and explosives.
	Effective contractor management
	Material Safety Data Sheets
	Surface water run-off management
	Bushfire buffer zones and hazard reduction measures
	Effective communication with key stakeholders
	Provisions of adequate ventilation, dust extraction and standard duct control and operating procedures for enclosed spaces
	Implementation of appropriate stock / land use management system
	Recycling materials where appropriate
	Requirement to undertake further modelling (groundwater)



Category	Environmental control and/or mitigation measure
	Above ground designs of surface infrastructure including aspect, wind directions, lighting.
Standards	Compliance with Australian Dangerous Goods for transport of all hazardous goods
	Compliance with all applicable Australian (and other) Standards
Design of plant and equipment	Design in accordance with standards and conditions of consent
	Design for correct capacity
	Design to include environment and climate considerations
Certification	ISO 9001
	ISO 14001
Other Tellus plans and policies	Enforce all environmental management plans
	Enforce all operational policies, such as employment policies, which will be required to be adopted as a minimum by all contractors and sub-contractors.



8 APPROVAL AND LEGISLATIVE REQUIREMENTS

8.1 Environmental Approvals

The Proposal is currently comprised of a proposed mining operating and a proposed waste storage operation. Each operation will involve the proponent seeking approvals, licenses and permits from both the Commonwealth and NT Government.

8.2 Commonwealth

The Proposal will involve the proponent seeking approvals, licenses and permits from the Commonwealth, specifically:

The Australian Minister for the Environment under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and *Environment Protection and Biodiversity Conservation Regulations 2000*.

8.3 Northern Territory

The Proposal will involve the proponent seeking approvals, licenses and permits from the NT Government, specifically:

The NT Minister for Mines and Energy under the provisions of MMA, specifically Section 82 of the MMA. The *Mining Management Regulations* (MN Regulations) are also relevant to the Proposal.

The NT Minister for the Environment under the following legislation:

EA Act and *Environmental Assessment Regulations* (EA Regulations) and the *Environmental Assessment Administrative Procedures*.

WMPC Act and *Waste Management Pollution Control Regulations*. The WMPC Act deals with the granting of any licences and/or permits for storage, transportation or discharge of material.



9 ENVIRONMENTAL MANAGEMENT SYSTEM

9.1 Environmental Policy

Tellus projects and operations will endeavor to:

- Operate in a responsible manner that respects the environment at all stages of our business.
- Incorporate environmental management systems as part of our critical business activities.
- Encourage new ways of minimising our environmental impacts.
- Strengthen our partnerships with stakeholders to achieve our objectives and obligations.
- Strive to effectively manage resources, reduce waste and eliminate or minimise adverse environmental effects and risks associated with our operations.
- Meet and, where appropriate, exceed applicable environmental laws, statutory obligations and relevant voluntary codes of practice.
- Monitor and set measurable targets to seek continual improvements to our environmental performance.
- periodically review, feedback and improve our Environmental Policy and Procedures;
- Protect natural, historic and culturally significant sites.
- Ensure that all people who work or visit our projects and operations are aware of and have the necessary skills to fulfil their environmental obligations.
- Openly communicate our environmental performance with our workforce, government and the wider community.

9.2 Statutory Requirements

All construction and operation activities will be conducted under the relevant acts and regulations which may include, but not limited to the following:

- Aboriginal Land Rights (NT) Act
- Bushfires Act and Regulations
- Dangerous Goods Act and Regulations
- Environmental Assessment Act
- Environmental Protection and Biodiversity Conservation Act (Com)
- Heritage Conservation Act and Regulations
- Mineral Titles Act and Regulations
- Mining Management Act and regulations
- Northern Territory Aboriginal Sacred Sites Act and Regulations
- Soil Conservation and Land Utilization Act
- Territory Parks and Wildlife Conservation Act, By-Laws and Regulations
- Waste Management and Pollution Control Act and Regulations
- Water Act and Regulations
- Weeds Management Act and Regulation
- Workplace Health and Safety (National Uniform Legislation) Act and Regulations
- Reporting requirements including employment/injury and safety statistics, production statistics
- Lease conditions
- Authorisation conditions



9.3 Non-Statutory Requirements

Constructive and positive working relationships with communities are essential elements of Tellus business practices. Tellus is committed to work with neighbours, employees, indigenous groups and other stakeholders to make a meaningful contribution in areas where Tellus operates.

Tellus will develop an ILUA with the Central Land Council and in consultation with traditional owners.

Regular communications will be undertaken with the Pastoral Lessee and other authorised users of the site, updating them on activities as they occur. Details of mobilisation and demobilisation of each phase of construction activities and any change to operations will be notified to these users in advance.

9.4 Roles and Responsibilities

The preparation and update of the EMP will be the responsibility of the Environmental Manager.

Site supervision and responsibility will be with the Mine Manager.

A detailed HR plan including organisational chart with roles and responsibilities is being developed by the Company and will be included in the EMP.

9.5 Training and Induction

A site induction of all Tellus Management, employees, consultants and contractors will be conducted prior to the commencement of activities by the Tellus representative. The induction will cover the following topics;

- Tellus corporate policies
- Environmental Policies and Responsibilities
- The Risk Management Plan (RMP) and workplace safety
- The Environmental Management Plan (EMP)
- Site specific management plans
- Agreements or arrangements in place with Pastoral Holder and Indigenous Communities
- Emergency procedure and incident reporting

And will include site specific induction training outlining;

- Site access, use of roads, tracks and gates
- Expected behaviour and personal conduct rules
- Handling, storage and disposal of waste
- Control measures required in regard to Weed control
- Sediment and erosion control
- Control measures required in regard to surface and groundwater management
- Control measures required in regard to management of Aboriginal and historic heritage, including what to do in case of discovery of sacred site or heritage item
- Control measures required in regard to management of flora and fauna



- Control measures required in regard to management of dust, noise, water pollution and soil contamination
- Housekeeping, security, safety equipment, first aid

Tool box meetings will be held regularly as a reminder and an opportunity to discuss any environmental and work safe concerns arising from the operations.

Copies of the EMP and other Management Plans will be available to all personnel and contractors. Copies will also be kept by the;

- The Managing Director, Tellus Corporate Office
- Mine Manager
- Environmental Manager / Supervisor

9.6 Identification of Environmental Aspects and Impacts

A preliminary review of identified environmental aspects and impacts relevant to current activities are listed in Table 9-1. This list will be updated prior to construction in coordination with Mine Manager, Lead Contractor, sub-contractors and staff.

Table 9-1 Identification of Environmental Aspects and Impacts

Aspect	Impact	Risk Rating	Management measures (prevention)	Management measures (remediation)
Clearing of drill pads/ tracks / camp	Removal of vegetation Removal of wildlife habitat	Low	Locate drill pads, tracks, camp to minimise disturbance	Revegetation of disturbed area, monitor and review
Excavation of drill sumps and soakage pits	Removal of vegetation Potential hazard to wildlife	low	Locate sumps to minimise disturbance Stockpile topsoil for rehabilitation Construct pit with slope to allow wildlife to egress, fence with barrier mesh	Regular monitoring of site during program Revegetation, review and monitoring post- activities
Driving between drill site / camp / tenements / Alice Springs	Spread or introduction of invasive pests	low	Follow weed control methods (i.e. physical removal and wash down of vehicles leaving site and travelling between tenements and properties)	Early detection, swift follow up action (physical removal, land management techniques, biological control, chemical control) Monitor and Review



	Dust and noise pollution	low	Ensure that modern well maintained vehicles are used at all times Limit vehicle speeds	Undertake noisy activities during daylight hours Review and monitor
Drilling / Construction	Dust and noise pollution	Low	Water carts, dust control sprays. Ensure that modern well maintained equipment is used at all times. Use acoustic containers or barriers where necessary	Monitor occupation noise and control operational hours if necessary. During drill and blast all workers will wear dust masks in the event of high levels of dust being generated from the rig.
	Groundwater and aquifer contamination	Moderate	Consultation with experienced hydrogeologists prior to drilling. Prepare detailed drilling plan following Department guidelines Use experienced contractors	Monitoring of water quality and resources
Fuel Storage	Hydrocarbon / drilling fluid spills – contamination of soil, surface and ground water	Moderate	Fuel to be stored on bunded spill pallets. When refuelling follow approved procedure Ensure drilling fluids stored in approved containers and approved procedures in place	Have spill kit onsite, bund and remove contaminated soil from site to an approved waste or remediation facility
Waste disposal	Pollution or contamination to soil, surface or ground water	Low	domestic waste will be stored in covered containers and then removed from site on a regular basis Industrial waste collected in approved containers and removed from site to be disposed of at approved facility	Remove waste and any contaminated soil to approved waste facility Remediation, monitoring and review



Personnel in remote field area	Disturbance of cultural or heritage sites	High	Aboriginal Areas Protection Authority Abstract of Records search conducted Heritage survey conducted prior to exploration activities Cultural and Heritage training and induction for field personnel	If any sites or heritage items are discovered, they will be left undisturbed and the find reported to a warden, a Police Office or Minister for Environment
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9.7 Reporting

Project reporting will be undertaken internally and externally. Internal reporting has been designed to capture the overall effectiveness of the EMP. The data from internal reporting will be utilised to fulfil external reporting requirements including to the Department of Mines and Energy and Central Land Council. The EMP internal reporting will be undertaken by the Environmental Manager.

9.8 Complaints

The Project has the potential to impact upon the community both negatively and positively. The mitigation measures developed through the management Plans are designed to mitigate and reduce potential environmental impacts. Should a complaint be received from the general public in relation to the Project they will be lodged within the complaints register including:

- Date
- Name and location of complainant
- Contact details
- Complaint
- Aspect
- Flow-up Actions / Mitigation Measures
- Close-out Approval.

All complaints will be investigated to determine the source of the complaint, identify any underlying cause, establish additional investigation measure (if required), summarise corrective actions and undertake follow-up to ensure corrective actions are undertaken. The outcomes of investigations will be shared with the complainant and summarised in both Monthly, Half-Year Reporting and the Annual Performance Review.

9.9 Environmental Auditing and Monitoring

Tellus will conduct internal environmental audits and inspections at regular intervals (e.g. quarterly



during construction) and at key stages during operations and site closure for regulatory performance and compliance.

Tellus may also engage consultants to conduct audits of the area for environmental baseline, monitoring, regulatory performance and compliance.

The audit will assess the implementation of each sub-environmental management plan and/or EMP requirements.

Prior to the audit, a checklist will be developed that includes:

- Mitigation / commitment being assessed
- Compliance with each mitigation measure / commitment
- Corrective actions required and responsibility
- Risks associated with non-compliance
- Additional mitigation measures.

The Environmental Supervisor shall ensure that investigations are initiated into non-conformances to determine whether mitigation measures are possible and appropriate.

Departmental officers may wish to inspect the site during construction and operations for regulatory compliance and following site closure for MMP Clearance purposes. Tellus will be guided by the outcomes of any audits that may be undertaken by Departmental officers.

9.10 Emergency Response Management

The management of emergency responses will be undertaken in accordance with the Emergency Response Plan (ERP). The ERP outlines standardised procedures to follow in the event of emergency situations that may occur during construction and operation of the Proposal including:

- Missing Person Procedure
- Medical Emergency Procedure
- Flood Emergency Procedure
- Fire Emergency Procedure
- Chemical Emergency
- Bushfire Emergency
- Post Emergency Procedure



10 MANAGEMENT PLANS

A series of management plans have been developed to support the environmental management of the Proposal, each plan is focussed on specific environmental aspects of relevance and importance to the Proposal and are listed in Table 5.

Table 10-1 Management Plans for the Chandler Proposal

Management Plan	ID	Administrating Authority
Environmental Management Plan	EMP	Internal
Construction Environment Management Plan	CEMP	To be developed prior to construction
Operational Environmental Management Plan	OEMP	To be developed prior to operations
Mine Management Plan	MMP	Administered through DME
Risk Management Plan	RMP	Administered through NT WorkSafe
Safety Case	MHFSC	Administered through NT WorkSafe
Sub Management Plan		Location within the EIS
Emergency Response Plan	ERP	
Biodiversity Management Plan.	BMP	
Bushfire Management Plan.	BFMP	
Water Management Plan.	WMP	
Sediment and Erosion Management Plan.	SEMP	
Cultural Heritage Management Plan.	CHMP	
Air Quality Management Plan.	AQMP	
Noise and Vibration Management Plan.	NVMP	
Social Impact Management Plan.	SIMP	
Rehabilitation and Closure Plan.	RCP	
Biting Insect Management Plan.	BIMP	
Traffic Management Plan.	TMP	To be developed under CEMP, OEMP
Flood Risk Management Plan	FRMP	To be developed under CEMP, OEMP
Landscape Concept Plan	LCP	To be developed under CEMP, OEMP



11 MANAGEMENT OF INFORMATION AND DATA

All environmental management information and data, including previous versions of this EMP will be stored in Tellus' Environmental Management System (EMS) which is located on the Q drive of the Sydney server. The Tellus EMS is accredited to ISO 14001 standard and is regularly audited internally, and annually audited by an external party.

Each record, including raw data and monitoring reports will be saved electronically in the EMS with a unique reference number.

Appropriate data management policies (including off site data back up and security) are in place.



12 REFERENCES
