



MOSMAN OIL AND GAS
LIMITED

Northern Territory Department of Mines and Energy

GPO Box 4550

Darwin, NT, 0801

Mosman Oil and Gas Ltd

Suite 1 Gunshot Alley

Suakin Drive

Mosman, NSW, 2088

17th June 2015

RE: ENVIRONMENTAL MANAGEMENT PLAN SUMMARY

Dear Sir/Madam,

Mosman Oil and Gas Ltd, as parent company of Trident Energy Ltd which is titleholder/Operator of the EP 145 Petroleum Exploration Licence, hereby submits an Environment Plan Summary as part of the requirements pertaining to conducting Geological and Geophysical Survey under the *Clauses 701 and 703 of the NT Schedule of Onshore Petroleum Exploration and Production Requirements (2012)*. Further this has been prepared using the NTDME's 'Guideline' and with reference to "*Process for Onshore Petroleum Geophysical and Geotechnical Survey Approvals*".

This summary is intended to specifically cover:

- a) Coordinates and locality maps (legible and at appropriate scale) of the activity;
- b) Description of the activity;
- c) Description of the environment where activity will occur;
- d) Description of the activity in relation to the environment (including best environmental practice);
- e) State major environmental hazards and risks; describe hazard/risk assessment process and controls measures;
- f) Provide an overall description of the environmental management approach;
- g) Advice on consultation undertaken and provision for ongoing consultation; and
- h) State the contact details of operator's nominated liaison personnel for the activity.

SUMMARY

Mosman Oil and Gas Ltd will undertake a non-ground disturbing geological and geophysical survey within EP 145. Its constituent parts are:

- a) A Geological field mapping and reconnaissance project with a duration of a total of 180 days (rotating in and out). This comprises a field geologist, with a support assistant, using existing tracks to access transect starting points, at which point they traverse terrain on foot making written observations and taking non-invasive orientation measurements.

The EMP covers any environmental requirements for the entry to and carrying out of the non-ground disturbing work but also includes details on future plans to manage any ground disturbing work if it was to take place. It should be noted that if there are any changes to the exploration program the Environmental Protection Agency would be notified.

The activity in relation to the environment is extremely low impact with no heavy machinery required, no destructive activities required, and no creation of permanent environmental scars (roads or tracks).

The survey is expected to commence in June 2015.

A map of the area (EP 145) is attached to the back of this document.

Environment of EP 145

The main land types of the region are arid sand plains with dissected uplands and valleys, including some major rivers (Finke, Hugh and Palmer rivers). The region is dominated by mulga with various *Senna*, *Eremophila* and other *Acacia* species present over short grasses and forbs. Major land uses are cattle grazing and Aboriginal land management. Major population centres are Alice Springs, Finke and Imanpa.

EP145 sits just to the West South West of Alice Springs in the outer edge of the Finke bioregion. The bioregion as a whole crosses the border of the Northern Territory (NT) and South Australia (SA; 74% of area in the NT, 26% in SA). The figure below shows the location of the bioregion.



Compared to the rest of Australia, the project area experiences far below average rainfall and humidity levels. Daytime temperatures, overnight temperatures and numbers of clear days are above average. Numbers of cloudy days are below average. Wind speed is average.

Summer in within EP145 is between December and February and maximum daily temperatures average between 36.4 and 38.4°C with overnight minimums averaging between 22 and 23.4°C. Summer days are very hot, averaging around 38.4 °C in the hottest months.

Winter is between June and August and maximum daily temperatures average between 21.8 and 24.6°C with overnight minimums averaging between 6.1 and 8.4°C. Winter days in within EP145 are moderate but can be moderately cool if windy, dropping to around 21.8 °C.

Decile rainfall was above the long-term median for most years in the reporting period. The period 1998–1999 to 2001–2002 had higher rainfall, while 1991–1992 and 1995–1996 were drier.

Note that regional averaging of rainfall conceals spatial variability. Some parts of the Finke bioregion may have experienced better seasonal quality and others worse during the 1992–2005 period.

Invasive animal species known to occur in the region include:

Common name	Scientific name
Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus</i>
Wild dog	<i>Canis spp.</i>
Feral cat	<i>Felis catus</i>
Donkey	<i>Equus asinus</i>
Horse	<i>Equus caballus</i>

Fire data effecting wildlife for the region was significant in 2002, most likely caused by fuel accumulation in the wetter years of 2000 and 2001. Most fire occurred in the cooler months of April to November.

Dust data report for the whole bioregion. The mean Dust Storm Index value (1992–2005) was 2.91, which was moderate compared with all rangeland bioregions. Dust levels were slightly lower in the centre of the bioregion compared with elsewhere.

In the local Bioregion there were more than 200 bird species recorded by 2005, a case study (see Buffel grass, Transformer weeds in Chapter 3) exists on how buffel grass is transforming habitats (Biodiversity Working Group indicator: Transformers).

A systematic regional biodiversity survey has been conducted in the local Bioregion. Data on threatened species was as follows:

- 3 threatened plant species
- 16 threatened mammal species (including 5 extinct species)
- 7 threatened bird species
- 2 threatened reptile species
- 1 threatened invertebrate species.

Most (92%) of the region is held as pastoral leasehold. This area has not changed noticeably. The remainder is Aboriginal Freehold Land which is being dealt with via the Central Land Council (CLC), as mentioned above all dealings with the CLC are confidential.

The expansion of *Tamarix aphylla* (Athel pine) covered in the MOG Weed Management Plan is of major concern within the region. Recordings have been made as far west as Karinga Creek. Efforts to manage the weed have been successful in small concentrated pockets only. Invasion of buffel grass is evident in the region.

The work program for EP145 has been approved by the Central Land Council (CLC), this process included a sacred site clearance program. Approval is conditional on not disturbing sacred sites. MOG has been provided with the coordinates of sacred sites but their location is to remain confidential as part of the agreement with the CLC. To avoid entering or disturbing sacred sites coordinates will be entered into hand held GPS units so that all workers remain clear of them. The CLC will be notified immediately if any MOG worker discovers what they believe could be an aboriginal sacred site.

MOG will contact the Department to obtain records of heritage sites within the project area, if any are flagged or discovered during exploration GPS coordinates will be taken and the information will be passed onto the relevant authority.

A request for a Heritage Clearance do determine if there are any European Heritage Artifacts within the work area is being conducted.

Hazards and Risks

The Company identified key areas of risks (see below), which it adopted/adapted specific policies to address-

- Competence, Training & Awareness;
- Flora/Fauna/Biodiversity Management;
- Cultural & Heritage Management;
- Biting Insects Management;
- Health & Safety Management;
- Waste Management;
- Weed Management;
- Vehicle Management;
- Dangerous Goods and Hazardous Substances Management;
- Rehabilitation and Closure Management.

The Risk Management/Assessment process is comprised of four (4) steps:

Step 1 Identifying Hazards;

Step 2 Assessing Risks;

Step 3 Deciding and Implementing Risk Controls;

Step 4 Monitoring and Reviewing Risk Assessments and Controls.

Each step of the process must be undertaken in appropriate consultation with relevant Workers and/or their Representatives. The process is to be repeated if the activity changes or if there're legislative changes.

Step 1 - Identifying Hazards

This means finding out what may cause harm to Workers and the Environment due to workplace activities. A list of identified workplace hazards is to be maintained on a Hazard Register at head office. Hazards will be recorded in a register.

The following are some of the sources of hazard information which may be utilised to identify hazards:

- a) direct report from Workers and others. All Workers are responsible for reporting to Management as soon as reasonably practicable any hazards that they identify;
- b) industry and legislative requirements;
- c) incident reports;
- d) workplace inspections;
- e) observation of work tasks and activities;

- f) expert advice;
- g) consultation with Workers; and
- h) audits.

Appropriate steps must be undertaken to identify any reasonably foreseeable hazards using any one or combination of the above methods, for example under any of the following circumstances:

- a) before the introduction of any new or used plant or equipment or a new substance;
- b) before the introduction of a work practice or procedure;
- c) before changing the workplace, a work practice, or an activity or process where to do so may give rise to a risk to health or safety of workers and the environment;
- d) after an incident has occurred;
- e) when new information about workplace hazards and risks becomes available;
- f) when responding to a concern about Health, Safety and the Environment;
- g) when new legislation or Approved Codes of Practice are promulgated;
- h) when planning to increase productivity or reduce costs.

Step 2 - Assessing Risks

Whenever a hazard has been identified, a risk assessment must be conducted using the company's Risk Assessment Worksheet. Risk assessment scores must then be entered into the Hazard Register.

Risk assessment involves:

- a) understanding the nature of the harm which could be caused by the hazard;
- b) estimating how serious the harm could be; and
- c) estimating the likelihood of harm occurring.

Step 3 - Implementing Risk Controls

Whenever the Risk Assessment Worksheet score indicates that the risk needs to be controlled, controls should be implemented using the Hierarchy of Controls outlined below and in the Risk Control Worksheet. The most effective control measures that are reasonably practicable must be chosen.

Controls should be considered in the following order of priority, "**the hierarchy of controls**":

ELIMINATION of the hazard is the best form of hazard control, eliminating any risk to health and safety. Elimination should be sought as the first control measure in all cases.

Where this is not possible:

SUBSTITUTION by a less hazardous means which presents less risk should be implemented (for example, where a toxic substance is being used, a different substance with lower toxicity that can do the same job should be sought).

Where this is not possible:

ENGINEERING controls should be used. This is based on the 'engineer out' hazard principle and generally involves modification of plant, equipment or processes to minimise risk.

Where this is not possible:

ADMINISTRATIVE CONTROLS should be considered. These are "rules" which may involve training, safe operating procedures, policies and procedures.

Where this is not possible:

PERSONAL PROTECTIVE EQUIPMENT should be provided.

It is important to note that risk reduction may involve a combination of measures developed from this hierarchy of controls.

Wherever the Risk Assessment Worksheet score indicates it is necessary, a procedure must be developed.

When controls have been selected, they must be recorded on the Hazard Register, along with dates by which the controls are to be implemented; and the name of the responsible party.

Step 4 - Evaluating and Performing Ongoing Reviews

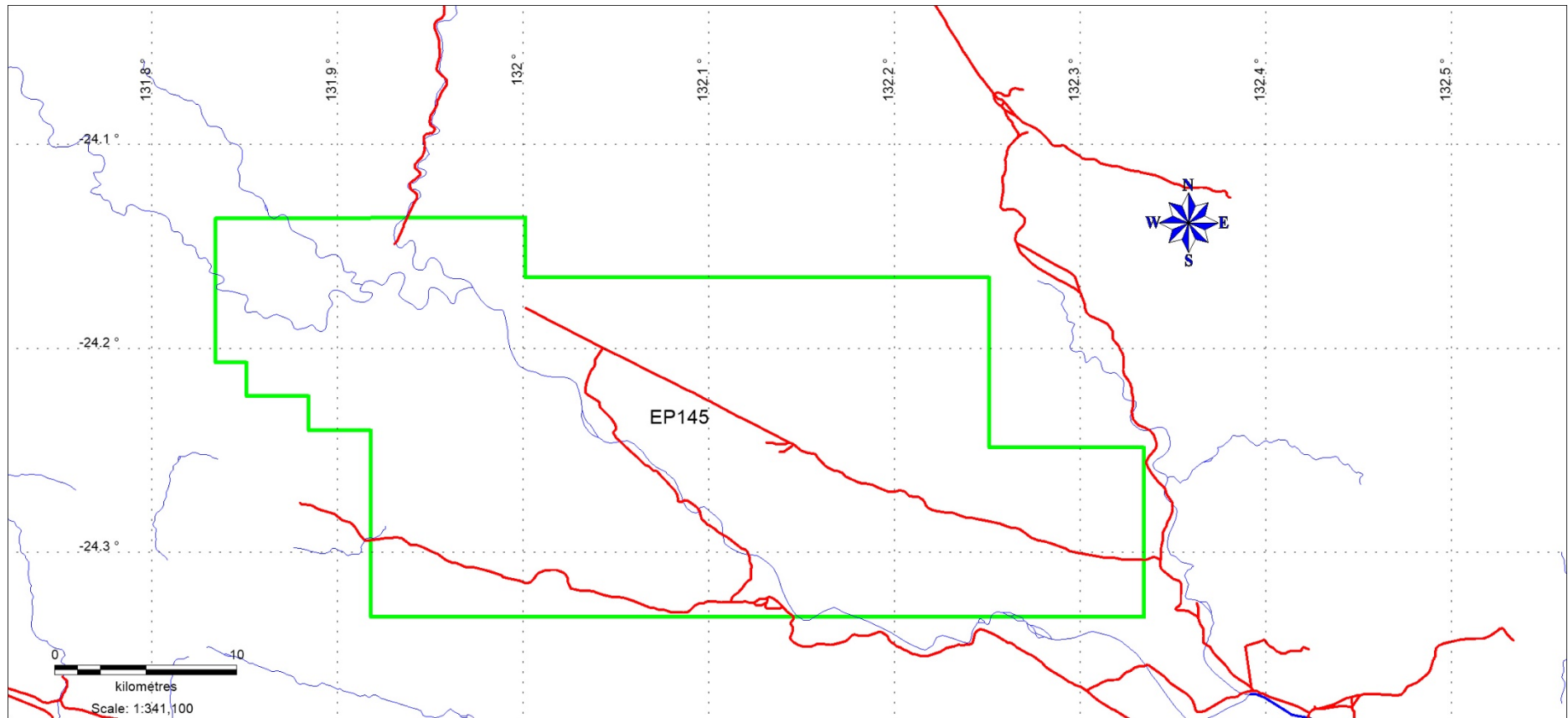
After risk control measures have been implemented, a review of the measures is to be completed to ensure that they are working as planned and that risk levels have been effectively eliminated or reduced so far as is reasonably practicable to an acceptable level.

Review of risk control measures must also be completed when:

- a) there is a change in the system of work associated with the hazard being controlled
- b) a relevant incident occurs;
- c) a relevant change in legislation occurs;
- d) new information is provided about the hazard and/or associated controls that may impact on health and safety of Workers and others.

The Company has undertaken a comprehensive approach to the Environmental Management of this area and in particular, this very low impact program. Consultation has been undertaken with all groups required under the permitting process and further consultation will occur in the event of any change of circumstance, timing, or discovery of new information.

The work will be supervised by the Exploration Manager (Australia) on behalf of Mosman Oil and gas, Mr Torey Marshall (0438816069), tmarshall@mosmanoilandgas.com, Suite 1, Gunshot Alley, Suakin Drive, Mosman NSW 2088.



Map of the EP 145 Area – Map Grid is in GDA 94 Lat/Lon