

Environmental Management Plan

Coastal Oil and Gas Limited

Unit 9
Bridgend Business Centre
Bridgend
CF31 3SH

Llandow 2 Exploration Borehole

Llandow 2 MWP - 005 - Environmental Management Plan

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Environmental Management Plan for the drilling of the Llandow 2 Borehole

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1. Introduction

1.1 Background

Coastal Oil and Gas Limited is based at the Bridgend Business Centre, Bridgend, South Wales. It is principally involved in the exploration of UK onshore gas reserves. It has a 50% interest in 99.9 sq. km. of Petroleum Exploration and Development Licence (PEDL 217) which is part of a licence holding in South Wales of 1052.4sq. Km. The remaining 50% is held by Adamo Energy (UK) Limited a wholly owned subsidiary of Eden Energy Limited of Perth, Australia. Coastal Oil and Gas Limited is approved as an operator for this licence by the Crown.

Coastal Oil and Gas Limited were granted Petroleum Exploration and Development Licence (PEDL) 217 by the Department of Energy and Climate Change (DECC). This licence gives the Applicant exclusive rights to search for subsurface petroleum by physical means within the licence area.

2. Definitions

UKOG	UK Onshore Gas Limited
The Group	UKOG and any of its subsidiary companies
Continuous Improvement	The process of implementing changes to achieve improvements in environmental performance.
Environmental Aspects	A feature of the Group's activities, products or service that can have an impact upon the environment
EMS	Environmental Management System
ENVID	Environmental Impact Identification Study
HS&E	Health, Safety and Environment
HAZOP	Hazard and Operability Study
HAZAN	Hazard Analysis Study
HAZID	Hazard Identification Study

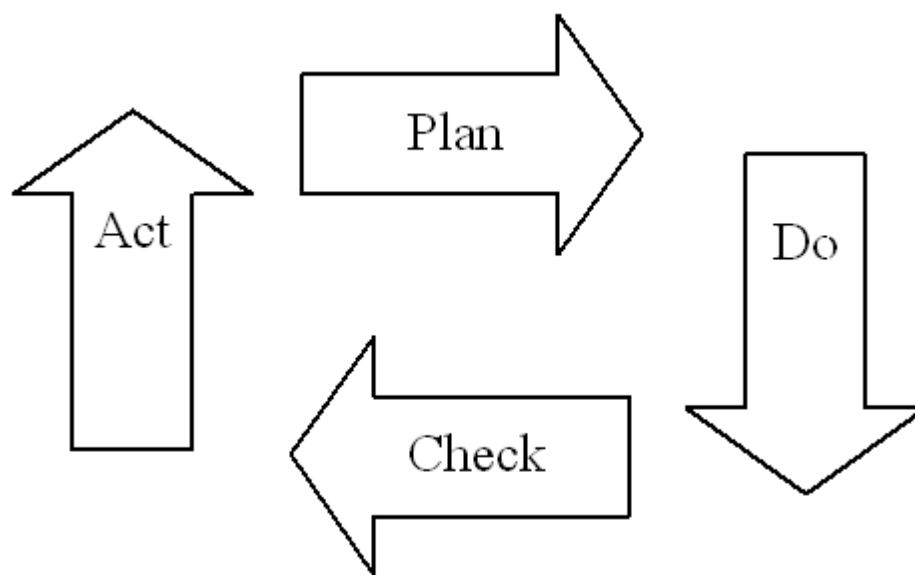
3. Objective & Scope

UKOG aims to identify and minimise the potential environmental impacts caused by its activities through the systematic control and continuous improvement of its policies and procedures contained within the Environmental Management System and risk assessment.

The principal activity is the exploration and production of hydro-carbons. In fulfilling its primary business objective, UKOG undertakes exploration, appraisal, project development, operation and decommissioning activities onshore only.

The EMS is applicable to all operating assets and development projects, and is designed for effective management of environmental aspects of the activities, products and services. The EMS is maintained and reviewed to ensure continuous improvement of the systems and legal compliance.

Effective risk-based, systematic, management of well integrity, the integrity of the surface equipment used in drilling operations and of other associated operations is critical to ensuring the safety of the well operations and environmental protection.



Plan - This stage involves:

1. Carrying out an initial environmental review;
2. Developing an environmental policy;
3. Developing an environmental program.

Do - How to implement and structure an environmental management system:

1. Communication with internal and external stakeholders;
2. Organisation of environmental documentation;
3. Control and maintenance of documents and worksheets;
4. Development of codes of conduct and precise instructions to support the EMS;
5. Accident and emergency plans

Check - This stage involves controlling and monitoring environmental performance and management systems including:

1. Monitoring and measurements;

2. Reviewing continual improvements and corrective actions;
3. Records;
4. Internal audits

Act - This stage involves:

1. Reviewing the environmental management system;
2. Communicating and reporting on the organisations environmental performance;
3. Getting official recognition through external verification.

4 Roles and Responsibilities

Within UKOG there are various activities that generate the potential for environmental hazards and the requirement to manage the associated risks to human health and the environment. These are addressed by the introduction of controls, generic standards, work instructions or project-specific procedures, and through employee/contractor training and awareness programmes.

All work activities, services and products, including new and changed, are evaluated with respect to impact upon the environment before implementation, including an assessment of the significance and control measures required to minimise any associated risks. The assessments are prepared in accordance with EMS Environmental Aspects Evaluation Procedure.

- Identifying the Hazards

Environmental aspects of the UKOG's activities can be considered in terms of the severity of the environmental impact i.e. the environmental hazards presented as a consequence of raw material usage, waste disposal, atmospheric emissions, etc. The techniques used to identify hazards depend on the nature and complexity of the operation or activity.

- Assessing the Risks

Risk is defined as the possible exposure and harm from a particular hazard. The level of risk is dependent on various factors such as the frequency of exposure to the hazard, the potential severity and the probability that the hazard will be realised. When assessing risks, consideration is given to any legal or other requirements and the sensitivity of the receiving environment, whether human health or ecosystem e.g. land, water and air.

- Reducing the Risks

Eliminating the risk is the preferred option (i.e. removing the hazard by using alternative materials, technologies, working practices, etc.). If risk cannot be

eliminated, then reducing the risk to an acceptable level is achieved through the identification and implementation of control measures e.g. written procedures, training, containment, Safe Systems of Work and/or management programmes developed based on the risk assessments. These are made available to relevant managers/departments for reference, approval and action.

- **Managing the Risks**

By effective management reduction of outgoing wastes can be achieved.

Significant environmental aspects are considered to be those hazards that have the potential to cause harm to the environment or to have legal implications should control measures fail.

The identification of hazards, assessing risks associated with those hazards and implementation of control/mitigation measures are managed in accordance with the EMS Policy and associated procedures. Periodic management system audits are undertaken to ensure that implemented controls remain up to date and effective.

4.1. Chief Executive Officer (CEO)

Overall accountability for ensuring that the Mining Waste Activity is conducted safely, in compliance with relevant legislation and permit conditions, and without harm to the environment.

The CEO, along with the Management Team, will have responsibility for setting environmental improvement goals and for measuring the attainment of these goals at annual intervals.

Responsible for ensuring that suitable and sufficient management arrangements are in place to facilitate the conduct of the Mining Waste Activity safely, in compliance with relevant legislation and permit conditions, and without harm to the environment.

4.2. Environmental Manager

Responsible for managing the permit conditions and supporting site management to ensure operatives are aware of their duties.

Responsible for ensuring that employees, contractors and relevant visitors are provided with appropriate training that is relevant to their needs, in order to ensure that they can discharge their functions, duties and responsibilities.

Responsible for ensuring that the relevant sections of the Site Condition Report are updated throughout the life of the site.

Undertaking audits and inspections to ensure effective management of the Mining Waste Activities.

Providing technical knowledge and guidance to senior management on the management of the Mining Waste Activity.

Delivery of waste management training and awareness to site staff.

Regularly engaging with the Environment Agency throughout the lifetime of the permit.

4.3. All Employees and Contractors

Employees and contractors are responsible for performing their functions, duties and responsibilities in accordance with:-

- the stated policies of UKOG;
- following written instructions/directions; (Including the site Pollution Incident Plan)
- Implementing the risk control measures identified in the relevant Environmental Risk Assessment.
- Attending any training and development courses
- Supporting all on-site inspections and audits

The EMS is applicable to all operating assets and development projects, and is designed for effective management of environmental aspects of the activities, products and services. The EMS is maintained and reviewed to ensure continuous improvement of the systems and legal compliance.

The EMS will be freely available to all employees, management, any contractors working on site as well as the regulating officer.

4.4. Legal requirements

UKOG operates in a highly regulated industry and procedures have therefore been developed and implemented for identifying and communicating legal requirements.

Environmental legislation and other requirements applicable to operational facilities are identified, reviewed and communicated under the direction of the respective Natural Resources Wales and HS&E Advisor as detailed in EMS Legal and Other Requirements Procedure. Natural Resources Wales and the HS&E Advisor will maintain a register of applicable legislation.

For new projects or changes to existing facilities, the Environmental Manager will prepare a project specific Register of Legislation (also referred to as a Consents Plan

or Compliance Register) that identifies possible legal and other requirements including consents, permits, and licences that may be required. The Register of Legislation is updated by the Environmental Manager until the facility becomes operational, at which time responsibility for maintaining the document is transferred to the appointed HS&E Advisor.

4.5. Objectives & Targets Programme

UKOG will hold an annual Environmental Management Review Meeting, this will play an essential role in defining strategy and direction and to aid making decisions on allocating resources to pursue environmental policy and objectives. A vital aspect of the planning process is the setting of objectives and targets that demonstrate continuous improvement, legal compliance and a reduction in risk of harm to the environment.

An Objectives and Targets Programme (i.e. environmental improvement plan) is prepared based on actions agreed at the Management Review meeting and provides detailed objectives and targets, including resource allocation, to be implemented for improving environmental performance. The programme is prepared and maintained in accordance with the EMS Objectives and Targets Programme Procedure.

4.6. Competence, Training and Awareness

Effective management of environmental risks relies on the competence of personnel engaged in operations. Competence is defined in terms of an employee or a contractor having the necessary skills, experience and training to carry out their responsibilities safely, effectively and with regard to environmental risks.

UKOG management recognises that communication and dissemination of environmental information, rules and regulations is essential for any new employee or contractor undertaking work tasks at operational sites and has implemented induction training at each site. Subsequent training is conducted as necessary and is targeted to the requirements of the employees; this may include legal requirements, pollution prevention measures, emergency response, etc.

All contractors carrying out work on behalf of UKOG must abide by the EMS Policy objectives and be monitored to ensure the required standards are met.

5. Reporting and Control

As part of the ongoing work to be undertaken by UKOG all reports and inspections shall be kept in the head office for each operation.

If any incidents take place on site these shall be reported via the site personnel to the Environmental Manager and CEO. A copy of the report shall also be kept on site for inspection.

Reports of all site inspections and checks shall be kept on site and held by the Environmental Manager.