



Karoon Gas Pty Ltd

**SAFETY MANAGEMENT PLAN
FOR
DRILLING OPERATIONS**

Onshore Gippsland 2006-07



Upstream Petroleum Controlled Document No. 34461-HS-03-0001

Revision 0, 5th October 2006

UP	PROJECT	34461
	HS-03-0001	REV 0

I: DOCUMENT CONTROL

This Safety Management Plan is a controlled document. Should the recipient (user) become aware of any changes or corrections that are required please photocopy this page and the relevant page(s) to be changed, note the corrections and deliver them to:

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II: DOCUMENT REVISIONS

The HSEQ Manager Upstream Petroleum is responsible for controlling and ensuring any revision of this document. Responsibility for managing change in this document is detailed within the UP Document and Data Control Procedure (UP/00/SP/DOC/PC01).

This document shall be revised in the following circumstances:

- Following an serious incident or near miss;
- On discovery of a significant new health or safety risk;
- Significant change in the drilling program or drilling operations.

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Please note the following requested / recommended changes to the following page(s):

Section: Pages:

Section: Pages:

Other

comments:.....

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REVISION HISTORY

0	9/10/06	Issued for review	RD <i>Paul Horne</i>	TG	PH
Rev	Date	Description	By	Chkd	App

III: APPROVALS

This Safety Management Plan has been reviewed by Upstream Petroleum Pty Ltd and Karoon Gas Pty Ltd and is approved for the drilling of the Megascoldes-1 (re-entry), Megascoldes-2 and Raniformis-1 in 2006/7.

Approval: Karoon Gas Pty Ltd

NAME	Signature	Date
Lino Barro Karoon Gas Engineering Manager		10/10/06

The Upstream Petroleum organisation have reviewed the contents of this Safety Management Plan, agree that the specific requirements are achievable and commit to implementing them before or during the well (as appropriate).

Approval: Upstream Petroleum Pty Ltd

NAME	Signature	Date
Terry Greaney UP Drilling Project Leader		9/10/06
Phil Harrick UP HSEQ & Training Manager		9/10/06

IV: DISTRIBUTION

Copy #	Location	Recipient
1	Karooon Gas	Engineering Manager
2	Upstream Petroleum	Drilling Project Manager
3	Upstream Petroleum	HSEQ Manager
4	Upstream Petroleum	File Copy
5	Department of Primary Industry	Submission Copy
6	Century Drilling	Operations Manager
7	Century Drilling	HSE Manager
8	Century Drilling	Rig Manager
9	Century Drilling	File – Drilling Contractor

V: GLOSSARY

Term	Definition
Accountable Person	Manager who requires an activity to be performed and controls the budget and resources.
Activity	Work performed to conduct the drilling of the well.
Authority Holder	As defined under section 4 of the Petroleum Act 1998: means an exploration permit, a retention lease, a production licence or a special access authorisation
BOP	Blowout preventer
CBM	Coal Bed Methane
Drilling Contractor/Service Provider	Any company or individual directly contracted to UP or KGPL for the purposes of conducting an activity or providing a service in connection with the operations referenced in this Operations Plan
Hazard	A situation or condition that may result in injury, or damage.

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JSEA	Job Safety & Environment Analysis
Facility	As defined under clause 3 of the Petroleum Regulations 2000: means a structure that— (a) is used or constructed for the purpose of recovering petroleum; or (b) carries, contains or includes equipment for the drilling or workover of a well;
Procedures	Means a safety management plan, standard operating procedures, JSEAs and work instructions prepared by UP, Drilling Contractor/Service Providers necessary to perform the activities required for the Services in a safe and environmentally sound manner and in accordance with all applicable legislation and in conformity with this Operations Plan.
PTW	Permit to Work system
KGPL	Karooon Gas Pty Ltd
Responsible Person	Person whose role it is to make an aspect of the project happen by organising and directing the various field activities.
Risk	The chance of something happening that will impact on objectives
Risk rating	Risk as determined using the UP risk rating system.
Site	The place where a drilling activity is being conducted on a KGPL operated petroleum tenure.
SOP	Standard Operating Procedure
UP	Upstream Petroleum Pty Ltd
Wellsite Representative	UP or KGPL employee or contractor appointed to manage KGPL's day to day activities at and between the well sites.

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1 INTRODUCTION

PEP 162 and EL 4567 are located within the Western on-shore Gippsland Basin of Victoria and covers 2950 and 820 sq. km. respectively. The permits are 100kms east of Melbourne. Karoon Gas Pty Ltd (Karoon) is the operator of permits PEP 162 and EL 4537 holding 100% registered interest. Karoon Gas Pty Ltd is 100% owned by Karoon Gas Australia Ltd.

Upstream Petroleum Pty Ltd (UP) has been appointed as Karoon's field operation contractor. UP is responsible for the project management of all drilling activity during Karoon's 2006-07 drilling program. Upstream Petroleum was also engaged to prepare the new well locations and provide expertise for landholder negotiation, Safety, Environmental, and Native Title/ Cultural Heritage issues. A separate Environmental Management Plan (EMP) (343566Doc) has been prepared that looks at Environmental and Cultural Heritage issues.

Both the EMP and this SMP form the basis of the Operations Plan required under the Petroleum Act 1999.

Upstream Petroleum has extensive experience in managing oil and gas and CBM drilling operations across Victoria and around Australia with a number of significant industry operating companies. Upstream has been engaged by Karoon to provide the highest standard drilling and HS&E Management.

1.1 Background

Megascolides 1 was the first deep, modern exploration well to be drilled (Dec., 2004) in the EL4537 and PEP162 permits (Fig.1) targeting lower Strzelecki coal deposits for Coal Bed Methane (CBM) exploration and Crayfish Group equivalent alluvial fan sands for conventional oil and gas accumulations that had been interpreted by previous seismic mapping (Blackburn, 2002). The Megascolides 1 well is located 14 km south of Warragul, Victoria on the Northern Terrace of the Narracan Trough, which forms part of the north-western edge of onshore Gippsland Basin (Fig. 2).

For CBM exploration, the results of the well proved the presence of gas bearing black coal across the Narracan Trough within Wonthaggi Coal Measure (Strzelecki Group) sediments. However, only a total thickness of 15m of black coal in beds less than 0.5m was penetrated. In the one core sample analysed the gas content was 100SCF per tonne with an approximate gas saturation of 30%. It was therefore considered that a CBM project would be non-commercial at this location and is not the purpose of this re-entry and sidetrack drilling.

It is now proposed the well be re entered, sidetracked and a core cut through the reservoir zone (see details in section 5.5). After drilling sufficient rat hole the well will be logged and if significant hydrocarbon saturations, porosity and permeability are interpreted the well will be open hole drillstem tested.

1.2 Objective

The main objectives of re entering the well are to fully evaluate the Crayfish Group equivalent quartzose sandstone reservoir encountered in Megascolides-1. This will be achieved by re entering and sidetracking towards a core point just above the reservoir sandstones. Coring will commence approximately 2m above the expected top of the reservoir sandstone. An 18m core will be attempted. Depending on the recovery and lithology of Core#1 a decision will be made whether to run another barrel before drilling to TD. Sufficient rathole will be required to ensure the wireline logging tools cover the interval of interest. After interpretation of data from the wireline logging, coring and MDT pre tests a decision regarding open hole well testing will be made. Two other wells, Megacolides-2 and Raniformis-1, will be drilled, also targeting the Crayfish formation reservoir

1.3 Drilling Program

Karooon Gas is proposing to drill the three wells during the period November 06-February 07 using the Century Rig 11. The program will start with the re-entry and sidetracking of Megascolides-1 followed by drilling of Megascolides-2 and Raniformis-1.

The wells will be drilled using standard onshore drilling operations and procedures, which include:

- Drilling and coring with a rotary drilling rig using recirculated non-oil-based muds;
- Wireline logging of the production holes;
- Openhole Drillstem testing of prospective zones (flow testing)
- Cementing of the well casing(s) or abandonment if non-commercial;
- In the event that hydrocarbons are discovered and the discovery appears commercial, the well will be suspended and cased for completion and further production testing to be carried out after the drilling rig has left to assess commercial viability
- Site rehabilitation following the drilling of the wells, or in the event a well is a commercial success, a reduced area will be retained for the wellhead facilities and workover access

The operations proposed at each site can be summarised as follows

Megascolides 1 Re-entry:

- Upgrade drilling site, flare pit, waste fluid sump and access road
- Install rathole & mousehole

- Mobilise drilling rig & camp (camp to separate site)
- Rig Up
- Nipple up & test BOPs
- Drill out surface & shoe cement plugs. Perform F.I.T.
- RIH 8.5" bit & clean out hole to 1740m (TOC)
- Set kick off cement plug 1650 – 1740m
- RIH mud motor & kick off sidetrack 1650 – 1680m
- POH and RIH rotary assembly and drill 1680 – 1750m
- POH & run rotary drop angle assembly
- Drill 8.5" hole to 1880m
- RIH core barrel and cut 18m core
- Recover core
- Drill 8.5" hole to 2000m (TD)
- Log well
- Wiper trip if required
- Run MDT pressure survey tool
- Wiper trip if required
- Drillstem Test if required
- POH test tools / Recover test fluid / condition hole
- Lay out drillpipe & drill collars
- Run 7" casing (or P & A)
- Cement casing displacing with brine
- Pressure test casing to 3000 psi
- Install casing slips and land casing
- Install and pressure test adaptor flange and Xmas tree
- Release rig

Complete well

- Separate program - TBA

Megascolides 2:

- Prepare drilling site, flare pit, waste fluid sump and access road
- Install cellar, conductor, rathole & mousehole
- Mobilise drilling rig
- Rig Up
- Drill 12-1/4" hole to 500 m KB
- Run & Cement 9-5/8" Casing / perform cement top up if required
- Install Bradenhead
- Nipple up & test BOPs
- Drill out float collar & shoe. Perform F.I.T.
- Drill 8.5" hole to ~1800m with bit changes as required
- RIH core barrel and cut 18m core
- Recover core
- Drill 8.5" hole to 1950m (TD)
- Log well
- Wiper trip if required
- Run MDT pressure survey tool
- Run Velocity survey

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- Wiper trip if required
- Drillstem Test (if required)
- POH test tools / Recover test fluid / condition hole (if required)
- Lay out drillpipe & drill collars
- Run 7" casing (or P & A)
- Cement casing displacing with brine
- Pressure test casing to 3000 psi
- Install casing slips and land casing
- Install and pressure test adaptor flange and Xmas tree
- Release rig

Complete well

- Separate program - TBA

Raniformis 1

- Prepare drilling site, flare pit, waste fluid sump and access road
- Install cellar, conductor, rathole & mousehole
- Mobilise drilling rig
- Rig Up
- Drill 12-1/4" hole to 500 m KB
- Run & Cement 9-5/8" Casing / perform cement top up if required
- Install Bradenhead
- Nipple up & test BOPs
- Drill out float collar & shoe. Perform F.I.T.
- Drill 8.5" hole to ~1700m (TD) with bit changes as required (Coring not planned)
- Log well
- Wiper trip if required
- Run MDT pressure survey tool
- Run Velocity survey
- Wiper trip if required
- Drillstem Test (if required)
- POH test tools / Recover test fluid / condition hole (if required)
- Lay out drillpipe & drill collars
- Run 7" casing (or P & A)
- Cement casing displacing with brine
- Pressure test casing to 3000 psi
- Install casing slips and land casing
- Install and pressure test adaptor flange and Xmas tree
- Release rig

Complete well

- Separate program - TBA

1.4 Principal Contractor

KGPL have appointed UP to act as the primary contractor and manage the safety and environmental aspects of the onsite activities due to UP's knowledge of the drilling industry.

1.5 Sub-contractors

There are over twelve sub-contractors that have been engaged by UP/KGPL to carry out the works described in this plan. They are:

- Drilling unit - Century Resources
- Rig Camp – Century Resources (subcontracted to ESS)
- Rig Transport – Century Resources (subcontracted to C.Burke Transport & Spikens Transport)
- Wireline – Precision logging (Weatherford)
- Mud logging – Baker Hughes
- Mud – RMN drilling fluids
- Cementing – Halliburton
- Coring – Corpro (Tasman)
- Drill Stem Test – Pacific Oil Resources
- Separator – Not Planned
- Surface test lines - TBA
- Directional drilling equipment – Hofco
- Directional drilling personnel – Halliburton or Scientific Drilling
- Drill bit – Halliburton (Security DBS)
- Lease preparation – Wayne Notman
- Well head – Wood Group.

UP has conducted an HSE evaluation of the key sub-contractors that examines their safety management systems, policies and competency to carry out the necessary work. Copies of these evaluations can be found on the Karoon Project files.

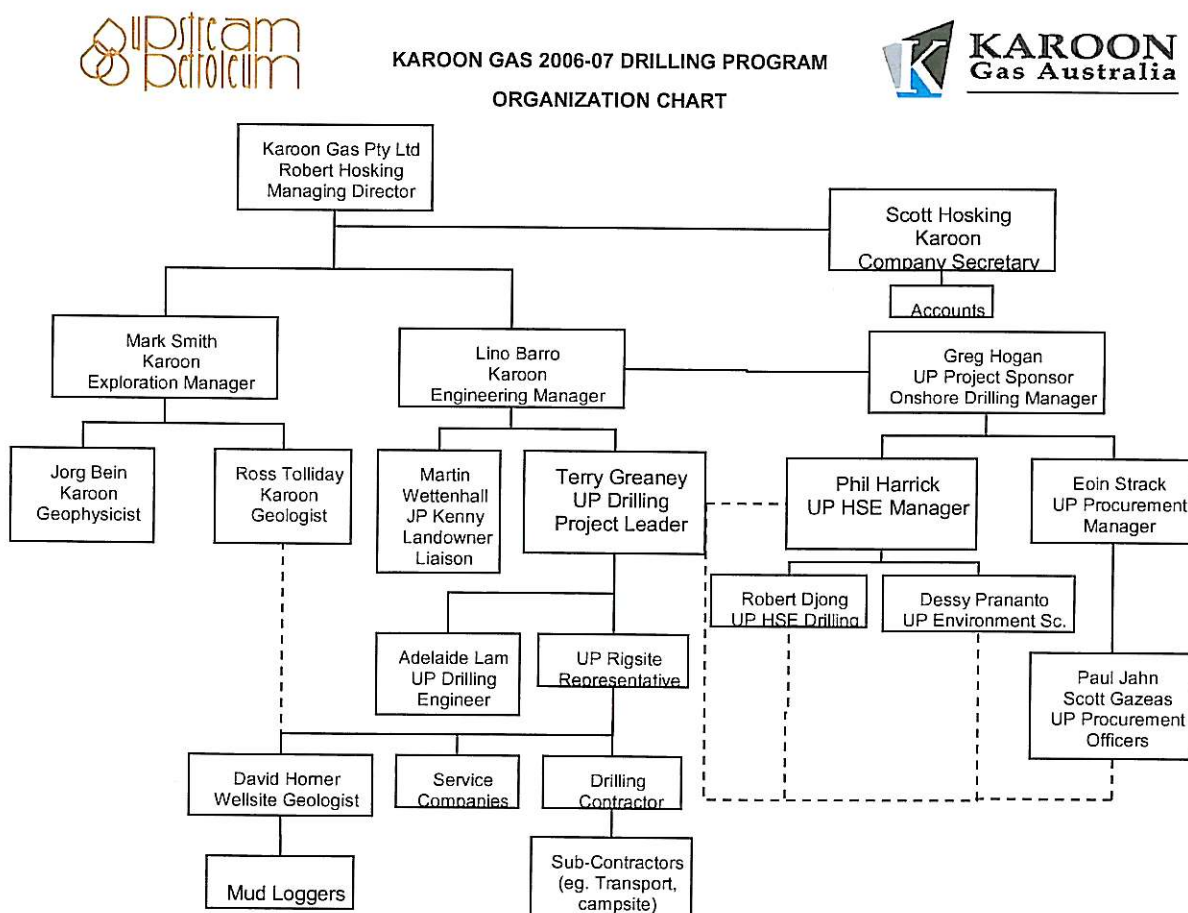
2 ORGANISATIONAL SAFETY POLICIES

UP provides direction on health and safety management with its HSEQ Policy as shown in Appendix 1.

3 ORGANISATIONAL STRUCTURE AND SAFETY RESPONSIBILITIES

3.1 Project Organisation

The KGPL Project Organisation Chart is shown below:



This illustrates the relationships for the project management of the activities.

3.2 Accountability and Responsibility

UP and the Service Providers all have specific accountabilities and/or responsibilities for the drilling. The following UP personnel have a direct accountability and/or responsibility:

UP KGPL Project Manager— is accountable for the overall safe management of the Karoon Gas 2006-07 Drilling Operation, the technical aspects of the program and for ensuring that appropriate plans are in place for the safe management of the activities during the program.

The **UP Wellsite Representative** is responsible for the technical implementation of the program and implementing this Drilling operation. He reports to the **UP KGPL Project Manager**.

The **Service Providers** have provided UP information on those within their respective organisation who have accountability and/or responsibility for their equipment in relation to the Karoon Gas 2006-07 Drilling Operation. The overall Karoon Gas 2006-07 Drilling Operation site remains under the control of the UP Wellsite Representatives, while the respective Contractor and Service Provider equipment remains under their individual control. Work will be conducted under the Drilling Contractor Permit to Work (PTW) system.

4 ACTIVITY DESCRIPTION

4.1 Location

The project area is located about 100 km southeast of Melbourne in the West Gippsland region of Victoria. The Karoon Gas 2006-07 Drilling Program requires a campsite & three small project sites, as outlined below:

- Megascolides-1 – situated north-east of the corner of Lardners Track and Hunters Road, Ellinbank, on private land (**Appendix 5, Figure 4-2**). This site was cleared for the previous drilling program in 2004.
- Megascolides-2 – situated on western end of Hunters Road, Ellinbank, on private grazing land about 1 km east of Megascolides-1 (**Appendix 5, Figure 4-3**). This site is slightly sloping.
- Raniformis-1 – situated south south-west of the corner of Brock Road and Main South Road, Hallora on private grazing land (**Appendix 5, Figure 4-4**). This site is relatively flat.
- Camp site lay out – will be situated at the site previously used for the 2004 drilling. It is situated at the eastern end of Burnt Store Road, Lardner, on private cattle grazing land, Lardner, immediately inside the property boundary and utilising the existing farm driveway (**Appendix 5, Figure 4-5**). This site is flat.

The Victorian Government, through the *Petroleum Act 1998*, has regulatory jurisdiction for exploration and development of onshore petroleum resources. In accordance with the act, Victorian Department of Primary Industry (Vic DPI) administers EL 4537/PEP 162. The location of the proposed well is provided in **Table 4-1** and **Figure 4-1**.

Table 4-1 Karoon Gas 2006 Well Locations

Wellhead MGA Coordinates (GDA94, UTM Zone 55S)				
Well	Longitude	Latitude	Easting (m E)	Northing (m N)
Megascolides-1	145° 52' 51"	-38° 13' 58"	402044	5767943
Megascolides-2	145° 53' 39"	-38° 14' 5.2"	403221	5767657
Raniformis-1	145° 49' 52"	-38° 14' 21.6"	397711	5766985



Figure 4-1 Location of the proposed drill sites

4.2 Karoon Gas 2006-07 Drilling Operation Summary of Work

The key features of the proposed drilling operations for Megascoides-1 & 2 and Raniformis-1 are summarised in Table 1.1

Table 1.1 Well Details

Feature	Description	Description	Description
	Megascoides-1	Megascoides-2	Raniformis-1
Location	Ellinbank	Ellinbank	Hallora
Exploration Licence No.	PEP 162 (also on EL4537) – Operations will be under PEP 162		
Well site coordinates (GDA94)	145° 52' 56.8" -38° 13' 52.3"	145° 53' 40" -38° 14' 1.3"	145° 49' 51" -38° 14' 26.4"
Timing of drilling operation	4 weeks	4 weeks	4 weeks
Drill pad area	1.3 ha	1.3 ha	1.3 ha
Accommodation	Camp site at Burnt Store Road for max 32 people		
Expected well depth	2000m	2100m	1700m
Target formation	Crayfish	Crayfish	Crayfish
Surface hole diameter	12.25" (re-entry)	12.25"	12.25"
Surface casing diameter	9-5/8" (re-entry)	9-5/8"	9-5/8"
Surface Casing Depth	500mKB	500mKB	500mKB
Production hole diameter	8.5"	8.5"	8.5"
Production casing diameter	7" (if required)	7" (if required)	7" (if required)
Drill rig	Century Rig 11	Century Rig 11	Century Rig 11
Proposed rig mobilisation route	<p>Qld to Drouin or Warragul then local roads to Hunters Rd. Camp to Burnt Store Rd, Lardner.</p> <p>Local route will be established via transport plan consultation.</p>	<p>Along Hunters Rd. Not planning to move camp.</p> <p>Local route will be established via transport plan consultation.</p>	<p>From Hunters Rd via Lardners Track, Burnt Store Rd, Main South Rd to Hallora region near Brock Rd intersection.</p> <p>After drilling is completed rig will be moved via Main South Rd to Drouin then via Melbourne to Port Campbell – Warrnambool region.</p> <p>Local route will be established via transport plan consultation.</p>

5 FORMAL SAFETY ASSESSMENT

5.1 Overview

The risk assessment for this drilling program was carried out according to UP's Hazard and Risk Management procedure (UP/00/HSEQ/GEN/PC01) which meets the requirements of AS/NZS 4360 Risk Management.

The workshop used a brainstorming approach to identify hazards and associated risks for the drilling phase of the project to develop a set of Hazard Register Records (HRR). Hazards tend to be classed by area or activity as appropriate.

At the start of the workshop session, the hazard listing was reviewed by the team to determine whether any of the activities undertaken by the drill rig have been missed.

Each HRR was then reviewed/developed by the team to:-

- Define the hazard (develop the hazard scenario that is under consideration)
- Ensure all causes of the hazard have been identified,
- Identify all prevention measures, and link those measures to the cause;
- Identify control,
- Identify mitigating measures.
- Determine which controls are considered to be critical.
- Record the key information and assumptions used to assist the team in their assessment of risk; and finally
- Assess the risk level of the scenario.

Prior to the assessment of each area / activity, a brief description of the project and key activities was described by the project team. Brainstorming was assisted by the use of historical data (which is referenced individually where used), and the experience and knowledge of the team.

The HRRs are shown in Appendix 2. The register includes identification of hazards, hazard initiation scenarios, possible consequences of initiation, a risk rating, and measure to be undertaken to eliminate, control, or manage the identified risks to As Low As Reasonably Practicable (ALARP).

It is a requirement of this Drilling Safety Management Plan that:

- The service providers' review their practices and procedures against any identified risk and to ensure that they are appropriate, if not they are to be modified accordingly.

- If any activities are required to be performed that are not covered by an existing service Providers SOP, then the risks associated with that activity are to be identified and managed. This may be in the form of a detailed risk assessment or a JSEA undertaken prior to conducting the task. If necessary, a new SOP is to be developed and implemented prior to the activity being performed.
- The UP Wellsite Representative on site is to advise the UP Project Manager immediately if the resultant risk-rating is 'extreme' or 'high' . Categories of risk lower than this can be managed by the onsite representative.

The UP Well Site Representative will ensure that all outstanding actions listed in the Hazid Register are closed out prior to the commencement of activity.

5.2 Driving Risk

Due to the rural nature of the drilling sites, driving has been identified as a high risk. As a mitigation action for post work fatigue and non-familiarity with the region, a dedicated local driver and bus will be used when practical to transfer drilling & service company personnel between the camp and drill site.,

For UP personnel the UP travel management plan must be adhered to.

Contractors and Service Providers' are required to provide evidence to UP that they have assessed the need for a system to be in place for managing employee travel and for managing any employee health issues that may arise from the job.

UP & KGPL are also required to give landowners 24 hr notice of persons accessing the sites. Prior to the mobilisation of drilling equipment to a site this process will be managed through the Site Visit Request system. After drilling equipment is mobilised the process will be managed by the UP wellsite representative and Century's rig manager.

6 EXISTING ENVIRONMENT AND IMPACT ASSESSMENT

The details are in a separate report: Environmental Management Plan for Karoon Gas 2006-07 Drilling Operation, Document No.: 34461-HS-04-0001.

7 MANAGEMENT OF INTERACTIONS

The UP Wellsite Representative is responsible for co-ordinating all site activities.

8 COMPETENCY

UP maintains a database of skills and competency requirements for its personnel for the particular roles they fill. In relation to a drilling this information can be obtained by contacting the UP Drilling Manager or the UP Training Co-ordinator.

The service providers participating in this activity are required to have the appropriate competent personnel to do the tasks they have been contracted to do and to provide evidence of this to UP.

9 TRAINING AND SUPERVISION PROGRAM

The UP Training Co-ordinator manages and maintains training plans and registers for UP personnel. Program supervision including UP onsite personnel is managed by the UP KGPL Project Manager.

The Contractor/Service Providers have also confirmed that they have training programs and/or provide relevant and sufficient training as required to ensure appropriate skills are in place.

For Safety Critical competencies such as PTW qualifications and BOP certificates, UP has or will sight this documentation before commencement of work.

10 SAFETY STANDARDS AND STANDARD OPERATING PROCEDURES

For the Karoon Gas 2006-07 Drilling Operations the health and safety principles set out in UP's HSEQ policy dictates the health and safety standard that is to be achieved as a minimum.

A number of compliance documents to be utilised in assisting to meet regulatory and UP MSS requirements are available on site; these are listed in Appendix 3.

For routine mobilisation, drilling and demobilisation operations, the Century Drilling Standard Operating Procedures will be used. These procedures have been reviewed and accepted by Upstream Petroleum.

Activities without a Standard Operating Procedure (SOP), jobs involving multiple Contractors, or jobs where participants are unfamiliar with the procedures, shall be subject to a JSEA.

11 EQUIPMENT TO BE USED ON SITE

The major elements of the Century Drilling Unit sub-contractor's machinery and equipment list are detailed in Appendix 6. This rig is currently stacked in Queensland and will require a final thorough inspection and function and pressure tests before commencing to drill by approximately 15 November.

The major components of the rig have been inspected by UP and a punch list of requirements has been generated for close-out by commencement of drilling.

12 EMERGENCY RESPONSE

From the risk assessment it has been identified that the following emergencies, should they eventuate, may require emergency service intervention:

1. Loss of well control
2. Vehicle accident
3. Serious injury to personnel
4. Uncontrolled bush fire

The KGPL Project Emergency Response Plan (ERP) (34461-HS-03-0002) has been separately issued by UP.

13 COMMUNICATIONS

UP requires communication and consultation to be carried out in accordance with Management System Standard 7. Communication and consultation falls into two main categories:

13.1 Employee Consultation, Participation and Communication

Employee consultation, participation and communication (including key sub-contractors) are achieved by:

- Documented procedures, agreed to by employees, for employee involvement and consultation in HSEQ issues.
- Site HSEQ Meetings, HSEQ Notice boards, Safety Bulletins and Alerts.
- Site inductions including induction into this Drilling operations and ERP
- Daily Toolbox Meetings
- Site Safety Inspections and Incident Investigations
- Participation in the preparation of the Site Hazard register
- Participation in the UP Trilogy web based incident, hazard and corrective action data base
- Training through the UP IMS Induction.

All site personnel must undergo a site induction. This will consist of a Century or UP site induction at the Karoon Gas site and will be carried out by the UP Wellsite Representative or Century's Rig Manager or a delegate. Visitors to site must undergo a visitor induction.

Prior to the start of the project a one day "Ice Breaker" will also be held by UP/Century. These communication sessions will discuss the key hazards associated with the program and controls that have been put in place. Where practical other service companies will be invited to attend.

13.2 Community Involvement

Community involvement is achieved through meetings and discussions with regulatory authorities (including DPI, DSE), landowner consultation, and meetings with local emergency services. A presentation to Landowner has been delivered on 12 September 2006 by the project which details how various community stakeholders are to be consulted.

The affected landowners of the Megascoides-1, 2 and Raniformis-1 sites have been informed of the planned activities. All owners have consented to Karoon accessing the site to conduct preliminary surveys. A lease agreement has been signed permitting drilling at the Megascoides 1 site. A similar process is underway in respect of the other two sites.

A copy of the consultation log as at October 4, 2006 is shown in Appendix 4.

14 IMPLEMENTING, MONITORING, AUDITING AND REVIEWING

14.1 Implementation and Auditing

Ensuring the implementation of the on-site requirements of this Drilling operation is primarily the responsibility of the UP Wellsite Representative, while the UP KGPL Project Manager has overall accountability for its implementation.

14.2 Review and Changes

Review and/or changes to this Safety Management Plan will be triggered by the following:

1. A significant change in risk or the identification of a new risk rated at High or above.
2. A significant change of personnel or equipment.
3. Change in contractor(s).
4. An emergency.

Service Providers are required to advise UP immediately any major changes are made to their respective operations.

14.3 Key Performance Indicators

UP has set performance indicators for itself and the Service Providers via the HSE Objectives Plan (34461-HS-01-0001) for the overall KGPL Project. These KPI's and

Objectives will be presented at the "Ice Breaker" meeting and will be available on site for UP and sub-contractor personnel review. The plan also includes an inspection and audit schedule.

15 RECORDING, INVESTIGATIONS AND REVIEW OF INCIDENTS

In the event of an incident/accident/ nears miss it will be reported in accordance with the UP Incident Reporting and Investigation procedure (UP/00/HSEQ/GEN/PC03). Where available, this will be via the UP Trilogy web based system to ensure that senior management within UP are immediately notified of incidents. If Trilogy is unavailable, the reports shall be filled out using the UP Incident Report Form (UP/00/HSEQ/GEN/PC03/FM01) and faxed to UP Senior Management.

Contractors are also required to provide input for the UP incident reporting system.

16 RECORDS MANAGEMENT

UP is not operating any mechanical plant or equipment that requires detailed records management. Vehicles undergo regular safety checks which are documented.

The service providers have advised UP that they have in place the appropriate:

- Licenses to operate plant & equipment where required
- Registration of vehicles
- Compliance of machinery and equipment

17 REFERENCES

Petroleum Act 1998

Petroleum Regulations 2000

AS/NZS 4360: Risk Management

APPENDIX 1 HSEQ POLICIES

	<p align="center">SAFETY MANAGEMENT PLAN FOR KAROON GAS 2006-07 DRILLING OPERATION</p>	
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HEALTH, SAFETY, ENVIRONMENTAL AND QUALITY POLICY

Upstream Petroleum is committed to providing safe and healthy workplaces for our personnel and minimising our impacts on the environment by:

- Maintaining a simple and effective management system that complies with internationally recognised standards on quality, safety and environmental management, focussed on continuous improvement.
- Ensuring a safe and healthy working environment for our personnel and control workplace risks to personnel and the environment to as low as reasonably practicable.
- Promoting safety, environmental and quality awareness and continuous improvement amongst our personnel by establishing measurable targets and objectives.
- Comply with all applicable statutory requirements wherever we operate.

Signed by :

Cam Rathie – Managing Director

19/03/2005

APPENDIX 2 HAZARD AND RISK REGISTER (HRR)

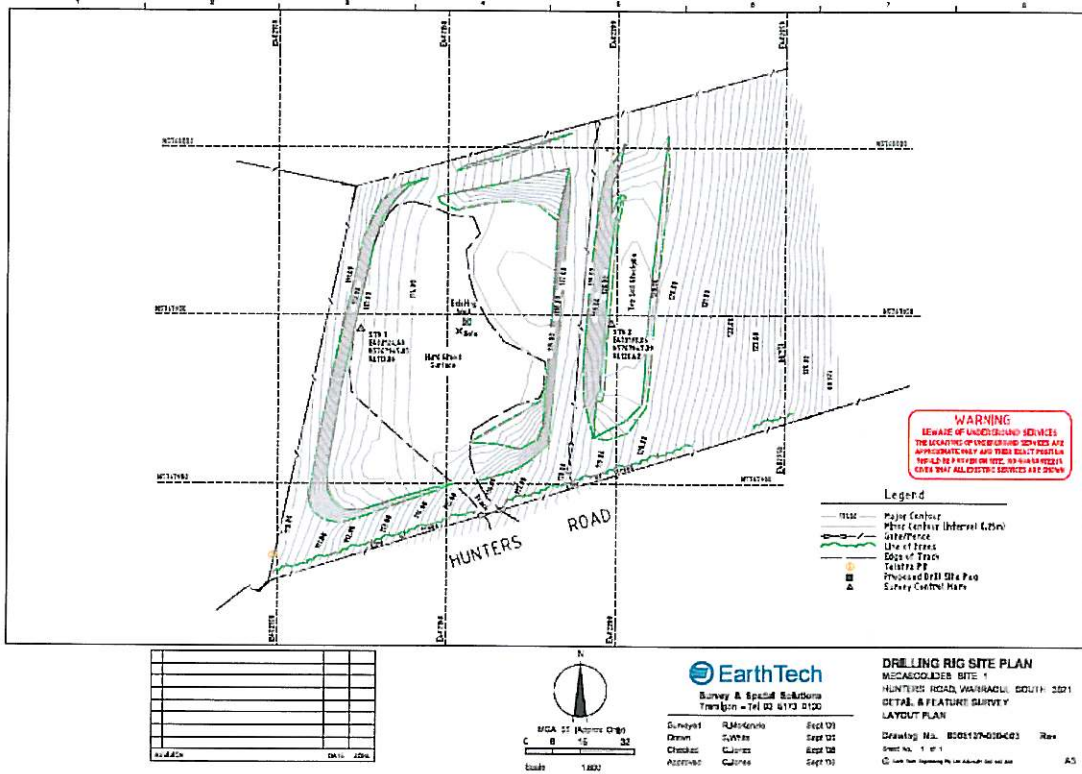
APPENDIX 3 REFERENCED PROCEDURES/DOCUMENTS

Document Number	Description
UP/00/SP/DOC/PC01	Document and Data Control Procedure
UP/00/HSEQ/GEN/PC01	Hazard and Risk Management procedure
UP/00/HSEQ/OHS/PC01	Control of Dangerous Goods & Hazardous Substances procedure
UP/00/HSEQ/GEN/PC03	Incident Reporting and Investigation procedure
34461-HS-04-0001	KGPL Environment Management Plan
34461-HS-03-0002	KGPL Emergency Response Plan
34461-HS-06-0001	KGPL Quality Plan
34461-HS-01-0001	KGPL Project HSE KPIs & Objectives
34461-HS-01-0002	KGPL Site Visit Request Form
34461-HS-01-0003	KGPL Site Induction Procedure

APPENDIX 4 LANDOWNER CONSULTATION LOG

APPENDIX 5 LOCATIONS OF WELLS AND CAMP SITE

Figure 4-2 Megascoldes-1



Figures 4-3 Megascolides-2

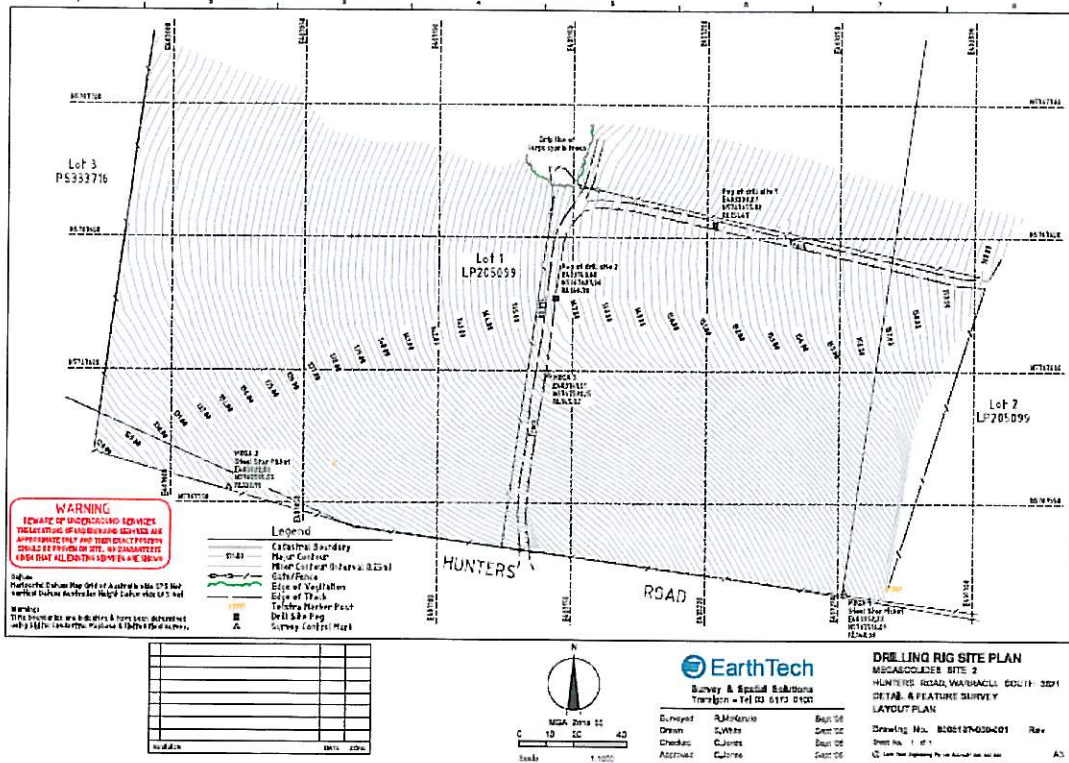


Figure 4-4 Raniformis-1

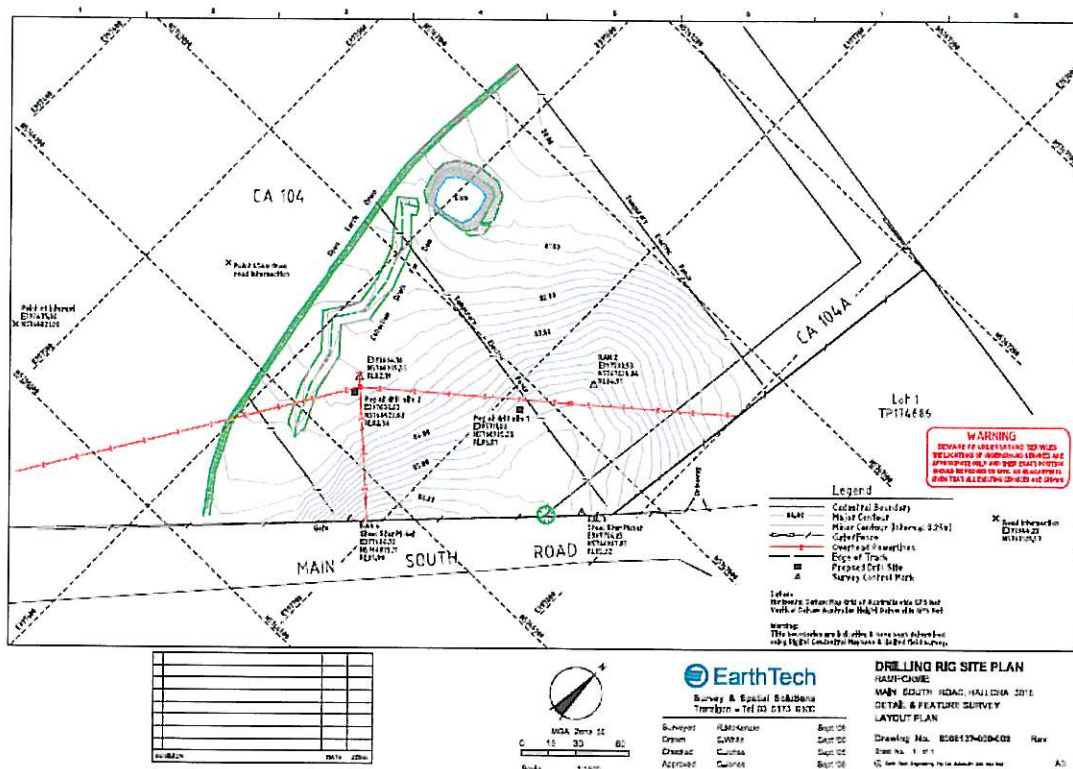
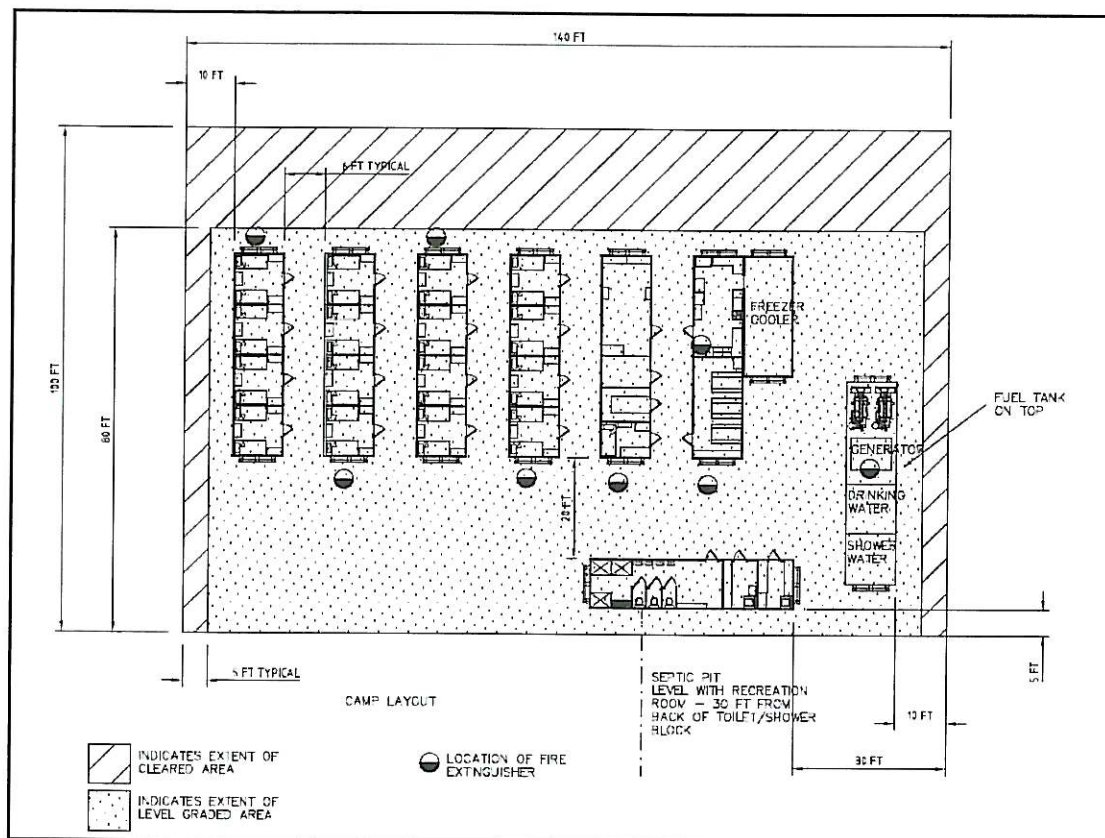


Figure 4-5 Camp Site Lay out



APPENDIX 6 DRILLING UNITS

RIG INVENTORY

RIG # 11 : COOPER LTO 750

CARRIER:	Cooper LTO 750 Carrier with triple front and rear axles 54,000lb front and 70,000lb rear. All necessary highway equipment. Unit leveled with hydraulic jacks when stationary.
SUBSTRUCTURE:	5.2 m Ground level to rotary table. 4.3 m Clear height under rotary beams. Maximum 350,000 lbs on rotary table and 200,000 lbs on setback.
DRAWWORKS:	Cooper 750 HP Double Drum Drawworks
ENGINES:	Driven by 2 each Caterpillar 3406 TA Diesel Engines
BRAKE:	Parmac 202 Hydromatic
ROTARY TABLE:	National Rotary Table Model C-175
DERRICK:	Cooper Derrick Model 118-365. Ground height 118' Maximum rated static hook load 350,000 lbs with 10 lines. Mast raised, lowered and telescoped hydraulically. Pipe racking capacity of 2500m – 4-1/2" drill pipe.
CROWN BLOCK:	Cooper Crown Block with 4 working sheaves. Fast line sheave and dead line sheave. All grooved for 1-1/8" line
HOOK BLOCK:	Ideco 1 1/8" 265 Ton Shorty
SWIVEL:	National P-200
SLUSH PUMPS:	3 Gardner Denver PZ-7 Triplex Pumps driven by Cat 379TA Diesel Engines Rated 550 HP each.
MUD SYSTEM:	2 x 300 bbl tanks incorporating 80 bbl pill tank and 54 bbl trip tank.
SHAKERS:	2 x DFE SCR-01 Linear Motion.
DEGASSER:	Drilco Atmospheric Degasser Standard Pit powered by 7 1/2 HP 60 Hz, 230v motor.
MUD / GAS SEPARATOR	40" Poor Boy Degasser
VENT LINE:	6" vent line from Separator to flare pit.
DESANDER:	Harrisburg Model DSN 1000. 2 x 10" Cones with 6" x 8" Centrifugal pump driven by 60 HP Electric Motor.
DESILTER:	Harrisburg 10 x 5" Cones and 6" x 8" Centrifugal pump, driven by a 60 HP Electric Motor.
MUD MIXING PUMP:	Harrisburg 6" x 8" Centrifugal pump driven by a 50 HP Electric Motor



**SAFETY MANAGEMENT PLAN
FOR
KAROON GAS 2006-07 DRILLING OPERATION**



MUD AGITATORS:	4 only Brandt Mud Agitator Model MA 7.5
BOP:	Annular: 11" 5,000psi Hydril GK Rams: 11" 5,000psi Shaffer Double Gate Model 'LWS' Complete with 4 ¹ / ₂ ", 5 ¹ / ₂ ", 7" and Blind Rams
ACCUMULATOR:	Koomey Model 100-11S
CHOKE MANIFOLD:	Cameron 3-1/8" 5,000 psi with one hydraulic and one manual choke complete with remote control panel.
DRILL PIPE SAFETY VALVE:	1 x 4" IF Inside BOP (Gray) 1 x 4" IF full Operating Stab Valve
SPOOLS:	1-11" 5,000 psi Flanged Drilling Spool with 3 ¹ / ₈ " 5,000 psi Flanged Choke Line out and 2 ¹ / ₁₆ " 5,000 psi Kill Line Outlet 1-11" 5,000 psi to 11" 3,000psi Kill Line Double Studded Adaptor 1-11" 5,000 psi to 7 ¹ / ₁₆ " 5,000 psi Double Studded Adaptor
KILL LINE VALVES:	2-2 ¹ / ₁₆ " 5,000 psi Manual Flanged Valves and MCM 2" – 5M Check Valve
CHOKE LINE VALVES:	1-3 ¹ / ₈ " 5,000 psi Manual Flanged Valve 1-3 ¹ / ₈ " 5,000 psi HCR Flanged Valve
INSTRUMENTATION:	AOI Advanced Drillers Monitoring System Martin-Decker 6 pen Record-O-Graph Martin-Decker Weight Indicator Type FS Martin-Decker Mud Pressure Gauge Martin-Decker Rotary RPM Indicator Martin-Decker Pump Stroke Indicator (3 of) Martin-Decker Tong Torque Indicator
KELLY SPINNER:	Foster Model 77 (hydraulic)
KELLY:	1-4 ¹ / ₁₆ " Hex Kelly 40' long with 6 ⁵ / ₈ " API Reg LH Box up 3-1/2" IF Pin Down
UPPER KELLY VALVE:	Upper Kelly Cock. 10,000 test 6 ⁵ / ₈ " API Reg LH Connections.
LOWER KELLY VALVE:	1 – Hydril Kelly Guard 4-3/4" OD 10,000 psi, 3-1/2" IF (NC46) Pin and Box Connection
KELLY DRIVE BUSHING:	Varco Type 4 KRS Kelly Drive Bushing
DRILL PIPE AND TOOLS:	12 joints 4 ¹ / ₂ " Range II Hevi Wate Drill Pipe with 18 ⁰ Taper 4" IF (NC46) Connections. 10,000 ft 4-1/2" G 105, 16.6 lb/ft Range II Drill pipe with 4" IF (NC46) Connections
DRILL COLLARS:	6 - 8" Drill Collars, Range II, with 6-5/8" Reg. Connections.

26 – 6-1/4" Drill Collars, Range II, with 4" IF (NC46) Connections.

FISHING TOOLS:

Fishing Tools to catch all Contractor's Equipment

- 1- 9-5/8" Gotco FS Overshot Series 150
- 1- 8-1/8" FS Overshot Series 150

Note:

Contractor will provide Overshots, Grapples, Guides, Packoffs, etc. for each size of drill pipe, drill collars and downhole tools provided by Contractor.

JUNK RETRIEVERS:

- 1- 11" OD Gotco Rev/Circ Junk Basket
- 1- 7-7/8" OD Gotco Rev/Circ Junk Basket

HANDLING TOOLS:

Elevators:

- 1 Set 9-5/8" Casing
- 1 Set 7" Casing
- 1 Set 5-1/2" Casing
- 1 Set 9-5/8" Single Jt
- 1 Set 7" Single Jt
- 1 Set 5-1/2" Single Jt
- 2 Sets 4-1/2" 250 Ton

Safety clamp

- 1 Safety clamp for 8" and 6-1/4" Drill Collars.

Slips:

- 1 Set 9-5/8" Casing
- 1 Set 7" Casing
- 1 Set 5-1/2" Casing
- 1 Set 8" Drill collar
- 1 Set 6-1/4" Drill collar
- 2 Sets 4-1/2" Drill pipe

Tongs:

- 1 Set Foley 36" short lever with jaws to suit 3-1/2" to 13-3/8"
- 1 Set Farr Hydraulic Power Tongs
- Jaws to suit 5-1/2", 7", 9-5/8" and 13-3/8"



**SAFETY MANAGEMENT PLAN
FOR
KAROON GAS 2006-07 DRILLING OPERATION**



PIPE SPINNER:	Air powered Weatherford Lamb Spinner Hawk to suit 3-1/2" to 5-1/2"	
SUBS:	1 – 6-5/8" Reg. x 6-5/8" Reg. Bit Sub (Double Box) 2 – 4-1/2" Reg. x 4" IF (NC46) Bit Subs 1 – 6-5/8" Reg. x 4" IF (NC46) Crossover Sub (Pin x Box) 3 – 6-5/8" Reg. Lift Nubbins 11 – 4" IF (NC46) Lift Nubbins	
CASING / TUBING DRIFTS:	1 – 9-5/8"	36 lb/ft
	1 - 7"	26 lb/ft
	1 - 7"	23 lb/ft
	1 – 5-1/2"	17 lb/ft
	1 – 5-1/2"	15.5 lb/ft
THREAD PROTECTORS:	3 – 9-5/8" Klampon Style 3 - 7" Klampon Style 3 – 5-1/2" Klampon Style	
WELDING EQUIPMENT:	1 x Cig-weld 300A Electric Welder 2 x Oxy/acetylene sets	
AIR COMPRESSORS:	2 x Sullair Compressor Package Model 10-30L - 100 CFM @ 125 psi. 2 x Engine mounted 12 CFM CAT Compressors. 2 x Coldstart Compressors.	
AC GENERATOR:	2 x Caterpillar 3408TA AC Generator Model SR-4. 1,800 rpm 60 hz 275 kw.	
FUEL TANKS:	1 x 27,000 litre - Skid Mounted	
WATER TANK:	400 BBL tank with two Warman 3 × 2 pumps driven by 20 HP electric motors	
PIPE RACKS:	4 sets 30ft in length	
CATWALKS:	2 piece Catwalk drill pipe construction 42" height	
COMMUNICATION:	Gaitronics System	
WIRELINE UNIT	1 x Mathey Slick line unit c/w 10,000 ft of 0.092" slick line	
MUD LAB:	Baroid Rig Laboratory Model 821	
RATHOLE DRILLER:	Manufactured Rat Hole Driller for 5 1/4" Kelly	
MUD SAVER:	Harrisburg Unit with 4 1/2" Sealing Rubbers	
CELLAR PUMP:	1 only 3" Pacific Diaphragm Unit	
FIRE EXTINGUISHER:	1 lot as per State Mining Regulations for Rig and Camp	

	<p align="center">SAFETY MANAGEMENT PLAN FOR KAROON GAS 2006-07 DRILLING OPERATION</p>	
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CUP TESTER:	Cameron Type 'F' Cup Tester Mandrel with 4-1/2" IF Connections. 9 5/8" 47- 36 lbs rubber for cup tester.
TRANSPORTATION:	One Cat 950F Loader or equivalent
RIG ACCOMMODATION:	1 Skid-Mounted Rig Manager/Company Man sleeper/office unit
	1 Century rig office/Electrician/Mechanic office
	1 Air conditioned smoko/ training Shack