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CULTUS PETROLEUM N.L.

(ACN. 009 102 505)

DRILLING AND EVALUATION PROGRAMME

SKULL CREEK WEST #1

January 1997

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1.0 GENERAL INFORMATION

Well Name	Skull Creek West-1
Block	PPL 1, Onshore Otway Basin, Victoria
Seismic Line	Waarre 3D Xline 2830 Inline 8440
	8.5 x 11 km 3D Seismic Grid
Surface Location	X: 670814.18 E Lat: 38° 33' 13.50" Y: 5730350.70 N Long: 142° 57' 37.50"
Block Equity Percentage	Cultus Petroleum N.L 100.00%
Type of Well	Exploration / Appraisal
Anticipated Spud Date	February 1997
Est. Time to Drill, P&A/Case and Suspend	17 days
Proposed Total Depth	2000m RT TVD
RT	4.3m
GL a.m.s.l.	96 m
Rig	Rig #30
Drilling Contractor	Oil Drilling and Exploration Pty Ltd (O.D.&E.)
Operator Personnel on Site	Drilling Supervisor Geologist Petroleum/Reservoir Engineer (during testing)
Well Objectives	Waarre Formation. Intra Eumeralla Sandstones

a.m.s.l. - above mean sea level

2.0 GEOLOGY INFORMATION

2.1 *Prospect Overview*

The Skull Creek West-1 well is located in production licence PPL1, onshore Victorian Otway Basin, approximately 190 km WSW of Melbourne (Figure-1). PPL1 is part of the Port Campbell Embayment, a proven hydrocarbon province with several producing fields in the area including North Paaratte, Wallaby Creek, Iona and the undeveloped Skull Creek and Mylor.

The purpose of the well is

1. to appraise the areal extent of the gas discovery in the Waarre Sandstone (Figure-4) at Skull Creek-1

2. to explore the hydrocarbon potential of the Eumeralla Formation (Figure-5). At Skull Creek-1 a Eumeralla sandstone (1400m sandstone) flowed gas at a rate of 1.1 mmscf/d through a 3/8" choke (Figure- 6). Based on seismic amplitude anomaly a deeper Eumeralla sand has been mapped with a structural closure of 2.5km^2. Another closure of 3.1km^2 has been mapped at the Top Eumeralla.

The sandstones of the Eumeralla Formation have been interpreted as channel sands deposited in a fluvial environment and therefore stacked channel sandstones are expected to be encountered in the Skull Creek West-1 well. (Figure-7) This seems to be shown by numerous discontinuous seismic anomalies (channels) in seismic sections.

The Skull Creek West prospect is located on the Skull Creek horst block bounded by two major faults trending approximately East-West. These two deep faults represent migration pathways for hydrocarbons trapped in Skull Creek-1. Gas peaks were also encountered when the Dunbar East-1 well path crossed the southern fault into the horst block.

The Waarre Sandstone has been recognised as the major gas reservoir within the Port Campbell area. It has been known by its excellent reservoir quality with porosities reaching 25% and multi-Darcy permeabilities.

The Eumeralla Sandstones are of variable reservoir quality. However, the gas flow rate of 1.1 mmscf/d from Skull Creek-1 indicates the commercial deliverability of the sandstones.

2.2 *Well Objectives*

The two objectives, expected depths and reservoir parameters of this well in descending depth are shown in the table below

Objective	Depth (mGL)	Porosity	Permeability (md)
Waarre Sandstone	1263	0.15 - 0.30	100 - Multi - Darcy
Intra Eumeralla Sands	1374 1680	0.10 - 0.25 0.10 - 0.20	1 - 100 1 - 100

2.3 *Geological Prognosis*

The following table outlines the expected stratigraphy for the Skull Creek West -1 well:

GL: 96m a.m.s.l. (preliminary)
RT: 4.3m above ground level

Formation Name	TWT (msec)	TVD (m SS)	TVD (m GL)	TVD (m RT)	Thickness (m)
Clifton Formation	262	251	347	351.3	78
Mepunga Formation	336	329	425	429.3	63
Dilywn Formation	392	392	488	492.3	240
Pember Mudstone	NP	632	728	732.3	60
Pebble Point Formation	618	692	788	792.3	34
Paaratte Formation	646	726	822	826.3	292
Skull Creek Mudstone	870	1018	1114	1118.3	48
Nullawarre Sandstone	900	1066	1162	1166.3	46
Belfast Mudstone	934	1112	1208	1212.3	59
Waarre Formation	978	1171	1267	1271.3	80
Top Eumeralla Formation	1030	1251	1347	1351.3	123
1400m Eumeralla Gas Sand	1112	1374	1470	1474.3	306
Intra Eumeralla Sandstone	1296	1680	1776	1780.3	
TD	1440	1900	1996	2000	

NP: No pick

HEYTESBURY GROUP (Surface - 429 metres)

Port Campbell Limestone

Calcarenite: orange, very fine to fine grained, sucrosic texture, common shell fragments and foraminifer, common red brown iron oxide rich calcilutite, friable, good visual porosity. Gradually becoming very light grey, fine grained, trace fossil fragments including bivalves, gastropods, foraminifer, sponge spicules and echinoid spines, slightly argillaceous, trace glauconite, trace medium grey marl, friable.

Gellibrand Marl

Marl: medium grey with increasing medium green grey occasionally medium brown grey, in general becoming less calcareous with depth, abundant fossil fragments including bivalves, gastropods, foraminifer, bryozoa, sponge spicules and echinoid spines, rare glauconite, rare dispersed quartz sand grains, trace pyrite occasionally as fossil replacement, rare micromica in part, very soft, sticky, non-fissile.

Clifton Formation

Calcarenite: orange brown, very fine to very coarse grained, abundant dark brown iron oxide pellets, abundant light to medium orange brown iron oxide stained bryozoa, trace to common shell fragments, echinoid spines and sponge spicules, common brown iron oxide stained very fine to very coarse frosted subrounded to well rounded quartz grains, weak calcareous cement, friable to moderately hard.

NIRRANDA GROUP (429 - 491 metres)

Narrawaturk Marl

Marl: medium to dark brown, common medium grey, trace medium green grey, common bryozoa, trace shell fragments, foraminifer, echinoid spines and sponge spicules, common very fine clear quartz grains, very soft, sticky, non-fissile.

Mepunga Fm.

Sandstone: medium brown, very fine to grit, dominantly medium, very poorly sorted, subangular to rounded, weak calcareous cement, weak silica cement, abundant white calcilutite matrix in part, abundant medium to dark brown argillaceous and silt matrix, strong brown stain on quartz grains, common glauconite, friable, very poor inferred porosity. With depth grading to claystone.

WANGERRIP GROUP (491 - 826 metres)

Dilwyn Formation

Sandstone: light brown grey, very fine to very coarse, dominantly coarse, subangular to subrounded, moderately sorted, weak silica cement. Grading to and occasionally interbedded with claystone.

Pember Mudstone

Claystone: medium to dark brown, very silty, common to abundant dispersed very fine to fine quartz sand grains, trace dispersed medium to grit sized quartz sand grains, common pyrite, trace glauconite, trace fossil fragments, slightly calcareous in part, trace medium brown cryptocrystalline dolomite, trace black carbonaceous material, trace micromica, soft, very dispersive, non-fissile.

Pebble Point Formation

Sandstone: light brown, very fine to grit, dominantly very coarse, subangular to subrounded, very poorly sorted, weak silica cement, trace to common medium brown argillaceous and silt matrix, trace white argillaceous matrix, trace to common yellow to brown quartz grains, trace green clay lithics, friable, fair visual porosity.

SHERBROOK GROUP (826 - 1351 metres)

Paaratte Formation

Sandstone: orange grey, very fine to pebble, dominantly coarse, well to moderately sorted, argillaceous matrix and silica cement increasing with depth.

Skull Creek Mudstone

Claystone: medium to dark grey, occasionally medium to dark brown grey, very silty, common dispersed very fine to fine quartz and partially altered feldspar grains, common pyrite, trace medium brown cryptocrystalline dolomite, trace black carbonaceous flecks, trace micromica, firm, very dispersive, slightly subfissile.

Nullawarre Greensand

Sandstone: light green, very fine to medium, quartzose, subrounded, common glauconite.

Belfast Mudstone

Claystone: dark grey, occasionally very dark grey and very carbonaceous, trace to common glauconite, moderately silty, moderately carbonaceous, trace to occasionally common medium brown cryptocrystalline dolomite, trace pyrite, trace micromica, firm, very dispersive, slightly subfissile.

Waarre Formation

Sandstone: light grey, fine to very coarse, angular to subangular, good porosity, interbedded with claystone.

OTWAY GROUP (1351 - 2000 metres)

Eumeralla Formation

Sandstone: light to medium green grey, very fine to coarse, dominantly medium, subangular, moderately sorted, weak silica cement, occasional moderate calcareous cement, common to dominantly abundant white argillaceous matrix, abundant green to grey to black lithics, common brown to red lithics, common to abundant altered feldspar grains, trace black coaly detritus, trace brown and green mica flakes, rare pyrite, friable.

Claystone: light to medium grey, light to medium brown grey, light to medium green grey, slightly to occasionally very silty, common black carbonaceous flecks and black coal detritus, trace brown mica flakes, trace pyrite, nil to occasionally common very fine partially altered feldspar grains, trace micromica, firm, very dispersive, slightly subfissile.

3.0 FORMATION EVALUATION - SKULL CREEK WEST #1

3.1 Wellsite Geologist Responsibilities

The Cultus Wellsite Geologist (WSG) has principal responsibility for formation evaluation and geological supervision at the wellsite. The WSG will supervise the mud logging unit, mud loggers, the electric logging programme (including velocity survey, and selection of CST points) and select coring as per this programme. The WSG will consult with the Pertroleum/Reservoir Engineer (PE) on site and together will agree and recommend test intervals/depths for formation tests (RFT/MDT/RFS) and drill stem testing if necessary. Supervision of formation tests, DST's and produced fluid sampling will be the joint responsibility of the WGS and PE. Refer to Section 3.2 below. All service tickets for the above contractors require WSG approval, in addition to the approval of the Drilling Supervisor. The WSG reports to the Cultus Operations Geologist and prior to drilling, will be briefed by the Operations Geologist on all aspects of this Drilling Programme.

All rountine sample collection during drilling is the responsibility of the WSG who will ensure the contracted mud logging company correctly gathers, labels and packages the samples as per instructions.

Cuttings gas, mud gas and salinity will be closely monitored over zones of interest. Additional samples may be collected at any time at the discretion of the WSG.

Whilst drilling, the WSG will monitor the mud logging and drilling operations in order to compile the daily geological report. A daily morning report will be sent to Cultus' head office by 8:00 am. via modem and/or facsimile, and will summarise geological progress and parameters listed below for the previous 24 hours with a 06:00 am. update. This report will be made by the WSG and will include

- Lithologic description;
- Drilling rate;
- Gas detector readings and show report;
- Mud resistivity with depth
- Formation and/or lithological boundaries;
- Correlation points;
- Any other pertinent information; and
- Up-to-date mudlogging sheets (by fax or modem transmission).

Depths should be reported in metric units. Pipe size, mud weights and other operations parameters will be reported in conventional Imperial units.

3.2 Petroleum/Reservoir Engineer Responsibilities

If a decision is made to run a wireline formation test tool (RFT/MDT/RFS) and/or drill stem tests (DST), then a petroleum/reservoir engineer (PE) will be on site. It is the PE's principle responsibility to ensure that adequate valid test data is obtained from the formation testing and DST operations. It is expected that the PE will work in close consultation with the WSG however the WSG has ultimate responsibility for communication with the contractors and for signing of service tickets.

The PE and WSG will consult together to agree and recommend test intevals and depths for DST and RFS tests.

DST

A separate programme with full details of responsibilities will be prepared in the event a DST is to be run. In brief the responsibilities of the PE will be:

- specifying the duration of flow and build-up periods;
- specifying the surface choke settings;
- recording relevant pressure, temperature and other surface data;
- calculating flow rates;
- supervision of any reservoir fluid sampling;
- confirming test validity once test charts have been retrieved.

Note that these responsibilities relate to the activity between setting of packers and release of packers.

Formation Testing

With regard to RFS, the PE and WSG will jointly supervise the programme. The PE is specifically responsible for:

- supervision and witnessing of all test points to ensure that adequate pressure build-ups are obtained and valid pressures are achieved;
- plotting data on a depth/pressure chart as it is recorded to confirm that a valid and complete dataset is obtained;
- requesting re-testing of points as necessary to obtain a valid dataset;
- agreeing to cessation of the programme in the event of tool failure or other for any reason that valid data cannot be obtained.

Sampling

Where formation fluid samples, in particular hydrocarbon samples, are to be collected during testing operations the PE will be responsible for ensuring that adequate valid samples are taken and properly labeled. Sampling proceedures including packaging and dispatch are outlined in section 3.3.1 below and should be followed.

3.3 Mudlogging Services

Mud logging services will be provided by Halliburton.

The mud loggers will be under the supervision of the WSG. A conventional mud logging unit will be utilised for this well and services will commence below the surface conductor.. Mud logging services will provide continuous 24 hour surveillance of drilling operations including:

- Gas Monitoring
  - total gas;
  - cuttings gas; and
  - chromatographic analysis.
- Other indicators :-
  - measured depth
  - rate of penetration
  - pump stroke rate
  - mud pit volumes

A comprehensive 1:500 scale mud log will be maintained at all times from below conductor to total depth. All instrument charts, annotated for depth in metres, are to be submitted to the WSG prior to release of the mud logging unit.

Gas detectors and chromatographs are to be calibrated with standard check gas blends once per day or as directed by the WSG. Total gas detectors are to be calibrated so that 1% methane in air will produce a chart deflection of 50 units. Total gas and chromatographic analysis will be displayed in ppm (parts per million) on a logarithmic scale.

Calcium carbide lag checks will be run once per shift or every 250m, whichever occurs first (or more frequently at the discretion of the WSG). During target sections carbide lag checks to be run only after approval from the WSG. Total gas units and lag (actual and calculated) are to be recorded on the mud log.

Drill rate will be recorded in metres/hour on a linear scale to best show significant changes in drill rate. The logger is responsible for resolving any discrepancies in measured depth.

The mud loggers will provide the Drilling Supervisor/Engineer with daily drilling parameter reports (midnight to midnight) including an ASCII file of depth and ROP data.

Leak-off tests, pit losses/gains, tight hole and other geologically significant data will be recorded on the mud log. Mud and mud filtrate salinity will be measured from any significant hydrocarbon show. As a reference, salinity checks should be made as soon after a significant drilling break as possible, ie. before the sample from the break is at surface.

The mud loggers will be responsible for the collection, logging and description of drill cuttings samples. A copy of the updated mud log will be available every morning in time for the morning report. A copy may be required for the afternoon report while drilling in zones of interest. Routine microscopic and fluoroscopic examination of ditch cuttings for hydrocarbon shows will be undertaken.

3.3.1 Sampling

Cuttings

-Two sets, of 100g, washed and air dried splits, will be collected (Cultus, DAEM)
- One samplex tray at the same interval as the washed and air dried set
- at 10 m intervals from spud to Skull Creek Member
- at 5 m intervals from Skull Creek Member to TD.

Sample intervals may be modified at the discretion of the WSG.

Fluids Sampling

All fluid samples be they mud, water, oil, high pressure liquid or gas must be labelled using a pre-printed Cultus sample label. A report (Cultus Sampling Report) for each sample must be submitted and copies sent with the sample, to the nominated Cultus contact (see below) and to the rigsite well file. Dispatch of fluid samples shall be the responsibility of the WSG.

Crude Oil

Recovered crude oil samples will be collected in new cans. Preliminary determination of the API gravity and pour point of the oil will be made at

the wellsite. Each sample shall be labelled using a Cultus sample label and a Sample Report Form completed.

High Pressure Gas and Liquid

A minimum of three samples per test should be collected (or three per phase if a separator is used) under pressure in an evacuated stainless steel cylinder. Refer to the Cultus Drilling Operations Manual for the appropriate sampling procedures. **Under no circumstances should a pressure rated sample bottle be used unless the bottle is accompanied with appropriate documentation (or is physically stamped) asserting a valid hydrostatic test, and that the bottle has been cleaned and evacuated**. The connection length between cylinder and the sampling point is to be kept to a minimum and the sample should never be throttled using an upstream valve. **The sample must not be purged.**

Each sample shall be labelled using a Cultus sample label and a Sample Report Form completed. A note should also be made about the flow as to slugging or stability etc. A sample of any gas to surface shall be analysed at the wellsite using the chromatograph in the mudlogging unit.

Water

Formation water samples are to be collected in clean one litre plastic bottles. Each sample shall be labelled using a Cultus sample label and a Sample Report Form completed.

Mud

20 ml mud filtrate sample or a 500 ml mud sample will be taken at the discretion of the WSG whilst hydrocarbon shows within the reservoir section are being recorded either on the chromatograph or in cuttings fluorescence. Rmf should be recorded on any mud sample while drilling in shows.

Fluid Sample Shipment

The designated Cultus contact for fluid samples for this well is;

Craig Martin
Senior Geologist
Engineering & Corporate Development
c/o Cultus Petroleum NL
Level 4/828 Pacific Highway
Gordon NSW 2072
Ph: (02) 9418 1522 Fax: (02) 9418 1504

For liquid hydrocarbons, gas and water or mud samples;

AMDEL Limited
35-37 Stirling Street
Thebarton (Adelaide) South Australia 5031
Attn: Mr. Brian Watson Manager, Petroleum Services
Ph: (08) 8416 5235 Fax: (08) 8234 2933

Cuttings, samples etc, not requiring urgent shipment shall be stored at Nelson Transport, Cobden to await shipment details.

Samplex trays to be sent to Cultus, Sydney with end of well data, Attention: Operations Geologist.

3.4 *Coring and Core Analysis*

Coring services will be provided be Australian DST.

A total of four cores are planned for Skull West Creek #2. Two 18m cores will be taken in the Waarre Formation. The first 18m core will begin 3 metres into top Waarre porosity. The second 18m core will begin 3 to 5 metres into the top of Waarre Unit 'A'. Two 18m cores will be taken in the Eumeralla. The first 18m core will be taken approximately 4m into the first sand in the Eumeralla. A second 18m core will be taken after an additional 100m+ of hole has been drilled and a section of approximately 4m of gas sand has been encountered. Bottoms up will be circulated prior to pulling out of hole with any core cut in the Eumeralla section.

NOTE: Length of core cut may be reduced at discretion of WSG or Drilling Supervisor.

The following procedure for coring will be followed:-

Any decision to core will be in consultation with the WSG, Engineering Manager, Exploration Manager and Drilling Manager.

Pipe is to be strapped and measurements checked against drillers tally prior to coring. (Also requirement for testing and logging operations).

Use an 18 metre long core barrel with aluminium inner barrel and low invasion face discharge coring head.

After cutting and retrieval the aluminium sleeve should be laid on the cat walk, measured, orientated (red line on the left and white line on the right pointing upwards) and cut into 1 metre length pieces. Depths should be annotated at the top and bottom of each 1 metre length piece. Core chips can be cut at the core ends and tested for fluorescence and cut immediately. Depending upon the degree of consolidation of the core and prevailing atmospheric conditions, the core may be slipped from the sleeve for more detailed description and a core description report should be prepared. The caps should be placed on the ends and further sealed with tape - waxing of the caps should not be required. The core should be delivered for analysis as soon as possible.

3.5 *Wireline Logging*

Wireline logging services will be provided by BPB.

A single logging suite, Suite 1, will be conducted upon reaching TD in the 8½" hole and will comprise:-

(1)	DLL-MSFL-ML-GR-SP-CAL-SONIC	TD to Top Waarre
	DLL -GR-SP-CAL-SONIC	Top Waarre to casing shoe
	NGT (run combined)	TD to Top Waarre - Contingent
	Full wave sonic (run combined)	TD to Top Waarre - Contingent
(2)	LDL-CNL-GR-CAL	Pay intervals only - Contingent
(3)	Acoustic imaging tool	TD to Top Waarre - Contingent
(4)	Dipmeter	TD to $9^5/_8$" shoe - Contingent

(5)	RFS (20 levels)	Waarre, Eumeralla contingent
(6)	Checkshot survey (12 levels)	TD to surface
(7)	Sidewall cores (24 shots)	Contingent

All log data is to be presented in metric units at 1:200 and 1:500 vertical scales. Log data should be sent to Cultus Petroleum Sydney office via modem or facsimile as soon as possible. Modem transmissions should be performed as soon as practical.

All tools should be adequately tested and calibrated before logging (shop and before survey calibration) and immediately after logging (after survey calibration). Heading data and remarks pertinent to log quality should be entered on each log.

In the event an intermediate casing string is required, a suite of logs may be run if hole conditions permit.

Some sidewall cores may be taken for analysis of mineralogy, hydrocarbon shows, fluid inclusions and subsequent drilling fluid design.

3.5.1 Wireline Formation Tests

Wireline Formation Tests (RFT/MDT/RFS) will be run in the Waarre C, B and A Units regardless of whether shows are present or not. The purpose of these tests is to measure formation pressure, establish hydrocarbon and water gradients, and obtain a preliminary indication of permeability and formation fluids.

The RFS sample depths will be decided at the time of logging by the WSG/PE in consultation with the Operations Geologist, Engineering Manager, Exploration Manager, and Drilling Manager.

3.6 Drill Stem Testing

No open hole testing is planned in the Waarre Units. The Eumeralla will be tested by open hole inflate straddle test after logs. If exceptional shows are encountered while drilling the Eumeralla sands, with the approval of the Managing Director after consultation with the Exploration and Engineering Manager, a conventional bottom test may be run to check for formation damage. Tests will be run after consultation between the WSG, Operations Geologist, Engineering, Exploration, and Drilling Managers. Testing equipment for running conventional and inflate straddle tests will be available on site.

4.0 DRILLING PROCEDURES

4.1 Introduction

This section summarises the various steps in the drilling operation. A separate document, the **"Cultus Onshore Operations Manual",** details Cultus Operating and Well Control Procedures, exploration drilling equipment and certain other procedures.

Safety policies and standards will be followed as per the **"Cultus and Drilling Contractor Safety Manuals".** An emergency response plan and oil spill contingency plan are provided within the Cultus Safety Manual.

4.2 General Operating Procedures

All operating procedures and engineering design contained in this programme are intended to be within the stated requirements of the Petroleum Regulations 1992, Victoria. A copy will be kept on the drilling unit in the Cultus Supervisor's office.

The Cultus Drilling Supervisor will be responsible for ensuring that the procedural guidelines are implemented to the standard specified in this programme, the Cultus Operations Manual and the Cultus Safety Manual.

Cultus personnel will check that all associated materials and equipment are complete and properly assembled for the operations specified herein. A pre-spud safety meeting will be conducted to ensure all personnel are aware of the operating guidelines and environmental sensitivities of the location.

4.3 Well Control

Wells will be shut in using the hard shut in technique, and will be killed using the "Wait and Weight" method. Refer to the Cultus **"Onshore Operations Manual"** for detailed procedures.

4.4 Drills and Safety Procedures

PIT AND BOP DRILLS

BOP drills will be conducted with each crew daily to ensure proficiency with the procedures for shutting in wells.

A BOP drill will be conducted prior to drilling out a new string of casing.

TRIPPING

The trip tank will be used at all times during tripping and while pipe is out of the hole. An accurate record of hole fill volumes will be maintained during tripping, logging and casing running operations.

FLOW CHECKS

Flow checks will be conducted prior to commencing a trip out of the hole, prior to pulling the BHA through the BOP stack and if the well fails to take the calculated volume of fluid.

All drilling breaks and return flow abnormalities will be flow checked.

SAFETY MEETINGS

Well control safety meetings will be held prior to spud as well as prior to drilling out each string of casing.

Pre-job safety meetings will be held prior to conducting any non routine or critical operations.

BOP EQUIPMENT AND TESTING
The BOP equipment will be operated and tested in accordance with good oilfield practice. Pressure testing will be conducted to pressures detailed in Section 10.0 of this programme.

The drills and safety procedures discussed above are detailed in the Cultus **"Onshore Operations Manual".**

4.5 Potential Drilling Hazards

SURFACE HOLE (12¼")
No major problems are anticipated while drilling the surface hole. The conductor will set 5 m below ground level. **Take extreme care drilling out of the conductor near surface**. The Port Campbell limestone has been known to cause lost circulation in the western region of the Otway Basin, but this is not anticipated based on offset well information. Dispersive marls have caused mud rings in offset wells, so mud must be adequately maintained through dilution. Seepage losses through sands are likely in the Dilwyn Fm.

MAIN HOLE (8½")
No major hole problems are anticipated. The Belfast mudstone may be slightly reactive and a KCI/PHPA system has been designed to control this claystone. In addition, if the thickness of the Belfast approaches 100-150m, over pressuring is a potential concern which may require mud weight of up to 10.5 ppg to control borehole breakout. The Belfast mudstone is expected to be approximately 59m thick.

4.6 Environmental Code of Conduct

This section is for the information and instruction of all field personnel engaged directly or otherwise by Cultus or its Contractors.

Much of the field work engaged by Cultus is conducted on private land, and accordingly, all field personnel should be aware that such land is not only the property, but often the livelihood of the owners, and that their rights and wishes must be appropriately respected. In the same way, where operations are conducted on Crown Land, the public ownership and use of that land must at all times be considered.

The following directions are intended to assist in these endeavours, and adherence thereto will be regarded as essential to any contract or agreement of which this document is part.

1. At all times all field personnel shall deal with property owners, occupiers, public officials and members of the public in a courteous and polite manner.

2. All reasonable efforts shall be made to ensure that a minimum of disturbance or damage is caused to persons, property or livestock, consistent with the performance of duties. All litter, waste or hazardous material shall be appropriately dealt with by the personnel responsible for its disposal.

3. Any special instructions issued by Cultus to any field personnel, in relation to field operations, and which are not inconsistent with any relevant contract or agreement, shall be binding on such field personnel.

4. All gates or crossings point or fences shall be left in a closed position after use, unless otherwise indicated.

5. Any damage or injury which may be caused directly or otherwise by any field personnel, to any property including land, buildings, fences, roads or any other structure, chattel or animal, shall be reported as soon as is practicable directly to Cultus, or to the Contractor's Representative, and such representative shall advise Cultus accordingly.

6. Any complaint made by any property owner, occupier or official, to any field personnel, shall be reported to Cultus in the manner described in the preceding directive number 5. Such report shall include the name of the complainant, the location of the property, the nature of the complaint and any action taken by the field personnel.

7. All work shall be confined as much as possible to the relevant area of operations.

8. All field personnel shall assist Cultus to the best of their ability, in any investigation which Cultus may have cause to conduct, as a result of a claim or possible claim for damages or compensation against Cultus.

9. Under no circumstances shall any trees, forest, scrub, shrubs or plantation be damaged or destroyed, without the written direction of Cultus to do so.

4.7 Sequence of Operations

The following procedures are designed to give an overview on the sequence of operations programmed for the Skull Creek West well. Specific and detailed procedures can be found in the Cultus "Onshore Operations Manual".

4.7.1 Construct Location

1. The location will be surveyed constructed to accommodate ODE Rig 30.

2. The rig will be moved from Taralea-1 and the camp will be located nearby in a central location for the remaining PPL1 programme.

3. Water will be supplied by tanker. A turkey's nest will be constructed at the rigsite to store drill water, and will be filled prior to spud. The camp will be supplied fresh water from a separate tanker or a water bore.

4.7.2 Install Conductor

1. Conductor will be installed prior to the rig arriving on location to a depth of approximately 5m and cemented with neat cement. The conductor should be drilled with an auger to minimise disturbance of the rig pad and potential for washout.

2. Prior to spud, install a bell nipple and flowline during rig up operations with a ball valve below ground level to drain the conductor. Install a cellar pump.

3. Drill mouse and rat holes. Inspect and accept rig and equipment. Rig on hire commences when these operations are complete. Note that the DEAM may inspect the rig prior to drilling out surface casing.

4.7.3 Drill 12¼" Surface Hole

1. Pick up the bit, cross-over sub and kelly to spud then continue picking up the 12¼" BHA as shown in Section 7.0.

2. Drill out the conductor using gel spud mud to prevent washout around the cellar area. Use low pump rate (100-200 gpm) and drilling parameters until the BHA is below the conductor.

3. After the stabilisers are below the conductor, increase pump and drilling parameters to optimise rate of penetration (ROP). Hydraulics as per Section 6.0.

4. Drill to casing point in or near the base of the Pember Mudstone. Tally the 9-5/8" casing to determine the casing setting depth. Allow 2m rat hole below the shoe.
   Note: Ensure that casing string is properly spaced out to have a casing collar at the required well head level.

5. Run TOTCO surveys at 30m, then every +/-200 m to casing point or at the nearest bit change.

6. At TD circulate hole clean and wiper trip to the top stabiliser and ream any tight spots while RIH.

7. Circulate hole clean, drop survey and strap out to run casing.

4.7.4 Run And Cement 9-5/8" Surface Casing

1. Rig up to run 9-5/8" casing. Make up float collar one joint above the float shoe. Check operation of floats. Run casing to setting depth, filling every 5 joints. Circulate last joint down and until shakers are clean, minimum one casing volume. Circulate at equivalent annular velocity used when drilling 12¼" hole.

   Note: Soft break casing collar on the last "landing joint" for backoff.

2. Make up cement head with top plug (no bottom plug required) and break circulation with rig pumps. Pressure test lines to 3000 psi for 5 minutes.

3. Pump 20 bbl pre-flush spacer. Mix and pump lead and tail cement slurries according to section 9.0.

4. Drop top plug and displace with rig pumps at 10 bpm minimum. Bump plug to 500 psi above final circulating pressure and hold for 5 minutes, slowly pressure up to 2000 psi and test casing. Release pressure and record flow back. Do not displace more than 100% of theoretical casing volume plus 50% shoe track volume.

5. If cement returns are observed during the job then divert to the sump. After the annulus has stabilised, drain and flush the conductor. Top-up the

annulus with class 'G' neat plus 2% Calcium Chloride to place high strength cement at surface and minimise WOC time.

4.7.5 Nipple Up Section 'A' Wellhead and BOP

1. Open turn buckles and raise conductor to visually ensure correct placement of the casing collar.

2. Wait on cement (maximum of 4 hours from plug bump) until top up job cement samples are firm enough to support string weight. Slack off string and back out the casing collar.

   Note: Pump out and clean up cellar area while WOC.

3. Install 8rd x 11" 3000 psi Bradenhead (with buttress Pin x 8rd. Pin casing cross-over) and torque up using the kelly and drive tool.

4. Nipple up $13^{5}/_{8}$" BOP stack. Ensure the hydraulic torque wrench is used.

5. Pressure test BOP stack, choke manifold and ancillary well control equipment as outlined in Section 11.0.

4.7.6 Drill 8½" Hole

1. Make up 8½" BHA as shown in Section 7.1.

2. Drill out the shoe track and 3m of new hole using old spud mud while displacing to new mud. Circulate and balance mud system. Perform Formation Integrity Test (FIT) as outlined in the Operations Manual. to 1.62 SG (approx. 13.5 ppg). Minimum FIT to provide sufficient kick tolerance to drill to TD is 1.28 SG (10.7 ppg).

   Note: Ensure that a low pressure gauge is available on the cement unit.

3. Drill 8½" hole optimising ROP once BHA is below the shoe. Refer to Sections 6.0 and 7.0.

   Run TOTCO surveys every +/-300m while drilling.

   Monitor all pore pressure indicators and raise mud weight if required on consultation with Sydney office, for hole stability and to maintain an overbalance above the estimated pore pressure. Wiper trip as hole conditions dictate or in conjunction with surveys.

4. At coring point, circulate bottoms up, ensure mud weight is uniform and wiper trip to the 9-5/8" casing shoe. Run in, circulate until shakers have cleaned up. Trip out (SLM) to test or core. Section 4.7.7 details general coring practices and procedures to be followed for this well.

5. At TD circulate and condition the mud and hole, then wiper trip to the shoe. Circulate hole clean and trip out to log (SLM).

6. Run logs as per Section 3.0 of this programme.

7. Drill stem tests at TD will be run contingent upon shows and electric log results. The DST intervals will be selected by the wellsite geologist in consultation with the Sydney office along the guidelines of Section 3.0.

4.7.7 Coring 8½" Hole

1. Make up 8½" coring BHA as shown in Section 7.2.

2. RIH to TD, pick up kelly, circulate and wash to bottom. Tag, bottom, pick up of bottom 6" and circulate for approximately 15 minutes. Drop ball and circulate. Monitor for pump pressure increase to indicate ball seat.

3. Commence coring and optimise parameters as per Section 6.0.

4.7.7 Run 7" Production Casing

7" production casing will be run in 8½" hole as a completion string if the well is to be suspended for later production or should severe, unexpected hole problems be encountered while drilling to TD.

1. Soft break drill pipe on last trip out and stand back..

2. Rig up to run 7" casing. Make up float collar one joint above the float shoe. Check operation of floats. Run casing to setting depth, filling every 5 joints. Circulate last joint down and until shakers are clean, minimum one casing volume. Circulate at equivalent annular velocity used while drilling.

3. Make up cement head with plugs installed and break circulation with rig pumps. Pressure test lines to 3,500 psi for 5 minutes.

4. Pump Spacer and cement according to section 9.0.

5. Drop top plug and displace with rig pumps at 10 bpm minimum. Bump plug to 500 psi above final circulating pressure and hold for 5 minutes, slowly pressure up to 2000 psi and test casing. Release pressure and record flow back.

4.7.8 Well Suspension

1. Partially nipple down the BOP stack, then drop and set the 7" casing slips with final casing string weight. Open the valve below the slips and observe the well while work continues. Raise the stack and rough cut the 7" casing. Final cut and dress 7" to the wellhead manufacturers recommended height. Dress stub and install the tubing spool (with pack off pre-installed).

2. Test the packoff to 1500 psi with hydraulic oil, fill body with oil and install blank flange with needle valve and pressure gauge.

3. Release the rig

4.7.9 Abandonment

1. A separate abandonment programme will be issued to the regulatory authority for approval at least 24 hours prior to abandonment.

5.0 DRILLING FLUID

5.1 12¼" Surface Hole

No abnormal pressures are anticipated, so the primary function of the mud is fast top hole drilling and avoidance of excessive marl dispersion problems. **Water will essentially be used to drill the surface hole**. Viscosity will be controlled by flocculation and/or dilution through the Gellibrand Marl (mud making). Ensure flowline water cleaning lines prior to spud and use gel sweeps to clean the hole as required.

Mud rings are common while drilling the Gellibrand and Clifton Marls and should be avoided by adequate dilution.. Prior experience also indicates if "golf ball" sized cuttings marl cuttings are coming over the shakers, mud ring formation is imminent and immediate dilution is required. The use of an 8% w/v KCl brine in an offset well appeared to aid inhibition of the marls.

NB Prior to reaching casing point, viscosity may be allowed to rise by reducing dilution. This will provide a native clay mud to condition the hole prior to running casing.

5.2 8½" Production Hole

An inhibitive KCl Polymer fluid is to be used to minimise formation damage and borehole instability. KCl and PHPA will provide inhibition while gel, native clays and PAC will provide fluid loss control. Fluid loss should be controlled as the Waarre formation approaches.

Offset well data suggests formation pore pressure at water gradient (i.e. 8.34 ppg) or less. As considerable sandstones will be intersected, mud weight is to be controlled through dilution to avoid differential sticking. Mudloggers to provide daily input regarding sand volume drilled and potential change in pressure. Hole conditions will dictate the final strategy.

Properties: 9-5/8" Shoe - TD

MW:	9.0 ppg max.	pH:	8.0-9.0
K+:	8,000-10,000 ppm (1% Kcl)	Hd:	<200 ppm
PHPA:	0.5 ppb excess	Sulphite:	>100 ppm
FL:	<5-6cc/30 sec	MBT:	<15
YP:	15-25	D.S.%:	<5%
PV:	<18	Cl^-:	8,000-10,000 ppm
Gels:	10/20 max.		

Maintain chlorides as specified with KCl for inhibition. As the expected formation fluid in the zones of interest have 15,000 - 20,000 ppm chlorides, it is imperative that drilling fluid chlorides is kept well below 15,000 ppm to provide an electric log response and assist with analysis of fluid samples. It is anticipated that the mud weight may rise to due to drilled solids however it is important to maintain a minimum mud weight For a complete Drilling Fluid Programme incorporating mud volume preparation and treatment, refer to Appendix 2.

6.0 BIT AND HYDRAULICS

6.1 12¼" Hole

In the 12¼" hole section, flow rates should be initially limited to 100-200 gpm until stabilisers are below the conductor. Thereafter flow rates should be maximised to optimise ROP, ensure proper hole cleaning, prevent cuttings overloading the annulus and mud rings. The table below is a preliminary bit and hydraulics programme A final programme will be issued prior to spud and the final hydraulics should be checked on the rig site.

6.2 8½" Hole

A TCI bit is initially programmed for the 8½" hole section, however a PDC may be substituted. The hydraulics should be designed to optimise HSI (hydraulic horsepower per square inch) at the bit. A total of four cores are planned, two 18m cores are to be taken within the Waarre formation and two 18 m cores with the Eumeralla Formation. (See Section 3.4).

Table 1: Preliminary Bit and Hydraulics

Bit No.	*#1*	*#2*	*CH #1*	*#3*
Size	12 1/4	8 1/2	8 1/2	8 1/2
IADC Code	1.1.4	4.1.7		M 2.2.3
Type	L114	MF02	CD93	M73P
IN, m	0	760		1400
OUT, m	760	1400		2000
Metres	760	640	72	600
Hours	51	43		50
Cum. Hours	51	94		144
ROP, m/hr	15	15		12
RPM	100/150	150/200	80/100	150/200
WOB, k lbs.	10/30	10/35	5-6, 10-20	10/35
90% Buoyed DC Wt	40.7	50.7		50.7
BHA: no run				
4½" HWDP	12	12		12
6½" DC	11	20		20
8" DC	3	n/a	n/a	n/a
Jets	16.16.18	14.14.14	TFA=	2x10, 4x9
Jet Velocity, fps	351	301		300
Pump Output, gpm	700	450	220-250	400
Pump Pressure, psi	1,996	2,057		2,056
SPM	250	161		161
Ann. Velocity, ft/min				
4½" HWDP	132	212		212
6½" DC	159	367		367
8" DC	199	n/a	n/a	n/a
Bit HHP/sq.in.	3.42	3.17		2.80
% Press. @ Bit	50	50		50
Mud Weight, ppg	9.0	9.0	9.0	9.0

7.0 BOTTOM HOLE ASSEMBLIES

7.1 Drilling Bottomhole Assembly

Bit No.	*#1*	*#2*	*#3*
Bit Size	12¼"	8½" TCI	8½" PDC
BHA	bit sub	PDM	PDM
	8" DC	string reamer	string reamer
	8" DC	6½" DC	6½" DC
	I/B stabiliser	string stabiliser	string stabiliser
	8" DC	15 x 6½" DC	15 x 6½" DC
	9 x 6½" DC	6½" Jars	6½" Jars
	6½" Jars	2 x 6½" DC	2 x 6½" DC
	2 x 6½" DC	12 x 4½" HWDP	12 x 4½" HWDP
	12 x 4½" HWDP		
90% Buoyed DC Wt	40.7	50.7	50.7
Mud Weight, ppg	9.0	9.0	9.0

7.2 Coring Bottomhole Assembly

Bit No.	*CH #1*
Bit Size	8½ corehead
BHA	core barrel stabiliser
	8.5m core barrel
	core barrel stabiliser
	8.5m core barrel
	core barrel stabiliser
	Safety joint & torsion ring
	12 x 6½" DC
	6½" Jars
	2 x 6½" DC
	12 x 4½" HWDP
90% Buoyed DC Wt	50.7
Mud Weight, ppg	9.0

8.0 CASING DESIGN

8.1 Casing Setting Depths

The 9-5/8" casing setting depth was selected based on isolation of Tertiary marl sediments, soft Dilwyn Formation sands and an acceptable kick tolerance for drilling the 8½" hole.

9-5/8" SURFACE CASING

The 9-5/8" casing is programmed to be set in the Pember Mudstone, and will permit the objective zones to be drilled using a reduced mud weight, low invasion fluid. It will consist of a mixed string of 47 ppf, N80 BTC and 36 ppf, K55 LTC casing.

8.2 Casing Design Summary

CASING SPECIFICATION					CASING PERFORMANCE		
Casing Size (in)	Setting Depth (mRT)	Weight (lb/ft)	Grade	Connection	Burst Rating (psi)	Collapse Rating (psi)	Min Tensile Rating (kips)
9-5/8"	760	43.5	N80	BT&C	6330	3810	1005*
		36	K55	LT&C	3520	2020	423^{+}
7"	2000	26	K55	LT&C	4980	4320	401^{+}

* Body yield load limited. $^{+}$ Coupling yield load limited

SAFETY FACTORS			
Casing Size	Burst	Collapse	Tension
9-5/8"	1.5	2.7	1.7
7"	2.2	1.2	1.6

Assumptions:

1) *Burst based on max. expected reservoir pressure less gas gradient of fully evacuated casing.*
2) *Collapse based on evacuation of casing, with a gas gradient of 0.1 psi/ft.*
   - *9-5/8" casing: fully cemented to surface, 100% evacuation*
   - *7" casing: cemented from 2,000 to 1070 m with 100% evacuation.*
3) *Tension based on weight in air plus pressure test axial load*
4) *Design based on deepest possible well depth of 2000m.*

8.3 *Casing Programme Summary*

Casing string		**Surface**		**Production**
Casing size		9-5/8"		7"
Shoe depth (mRT)		760 BTC 760 - 400m LTC 400 - surface		2000
Grade		N80	K55	K55
Weight (lbs/ft)		43.5	36	26
Connection		BT&C	LT&C	LT&C
Nominal wall thickness (in)		0.435	0.352	0.362
Inside diameter (in)		8.755	8.921	6.276
Drift diameter (in)		8.599	8.765	6.151
Capacity (bbl/m)		0.244	0.254	0.126
Coupling OD (in)		10.625	10.625	7.390
Make-up Torque (ft/lbs)	Optimum	See below	3670	3010
	Minimum		4890	4010
	Maximum		6110	5010
Threadlock		Shoe track		Shoe track
Float shoe		HOWCO		HOWCO
Float collar		HOWCO		HOWCO
Joints between shoe and float collar		1		1
No. and type of centralisers		4, Bow Spring		TBC: 12 Ray OIL Tools, solid
Location of centralisers		3m above float shoe Centre of jts #2 Collar of jts 3,4		TBA
Surface wellhead equipment		CIW bradenhead 9-5/8" LTC x 11" 3000 psi, GSOS paint spec		11" CIW 3000 psi x $7^{1}/_{16}$" 3000 psi Tubing spool, GSOS paint spec
Comments		BTC p x LTC p N80 43.5 ppf nipple req.		

NOTE: BTC it to be made up to the triangle. Average the make-up torque over the first 10 joints and then set the tong dump valve to this value.

9.0 CEMENTING

Bottom hole static temperatures (BHST) are based on a surface temperature of 21 oC (70 oF) and derived from offset well temperature data.

BHST Gradient: 2.5 °C/100m (1.36 °F/100 ft)

Required thickening times are calculated assuming a slurry mix rate of 5 bpm, a displacement rate of 10 bpm and a 90 minute safety margin. These times will be adjusted if cement volumes are altered

9.1 9-5/8" Surface Casing

The 9-5/8" job is designed to bring cement to surface.

SPACER: 20 bbls Fresh Water

LEAD SLURRY: 100 m above shoe to surface
(760 - 100 = 660m, Annular Volume = 642 ft^3)

Cement:	454 sx Blue Circle class "G" cement, (includes 50% excess)	
Additives:	3.0% prehydrated API bentonite (by weight of cement)	
Properties:	density:	12.5 ppg
	yield:	2.12 cuft/sx
	water ratio:	12.2 gal/sx
	thick.time:	2 hours min.

TAIL SLURRY: shoe to 100 m rise
(760 - 660 = 100m, Annular Volume = 97 ft^3)

Cement:	102 sx Blue Circle class "G" cement, (includes 20% excess)	
Additives:	**TBA** $CaCl_2$ (by weight of water)	
Properties:	density:	15.8 ppg
	yield:	1.15 cuft/sx
	water ratio:	5.0 gal/sx
	thick.time:	2 hours min.

TOP UP SLURRY Blue Circle class "G" cement
2.0% $CaCl_2$ (by weight of water)

9.2 7" Production Casing

Cement volumes for the production casing are preliminary. A detailed casing programme and cementing programme will be issued at the completion of the open hole evaluation. For planning purposes, approximately 230 sxs will be required for three 60 m abandonment plugs, in addition to the surface casing cement. If the production casing is to be run, additional sacked cement will be required.

SPACER:	20 bbls Brine Water	
Additives:	NaCl, density equal or greater than drilling fluid	
LEAD SLURRY:	50m above pay to 50m above Skull Creek Mudstone (1220 - 1070 = 150m, Annular Volume = 62 ft^3)	
Cement:	35 sx Blue Circle class "G" cement, (incl. 20% excess)	
Additives:	3.0% prehydrated API bentonite (by weight of cement)	
Properties:	density:	12.5 ppg
	water ratio:	12.22 gal/sx
	yield:	2.12 cuft/sx
	thick.time:	3 hours min
TAIL SLURRY:	TD to 1220 above shoe (2000 - 1220 = 780m, Annular Volume = 325 ft^3)	
Cement:	339 sx Blue Circle class "G" cement, (includes 20% excess)	
Additives:	CFR -3	TBA
	HR-5	TBA
Properties:	density:	15.8 ppg
	yield:	1.15 cuft/sx
	water ratio:	5.0 gal/sx
	thick.time:	3 hours min.

Confirm all slurry recipes with lab results before the job. Add defoamer as required during material mixing to reduce/prevent foaming. Allow for dead volume in tanks when calculating mixwater and chemical requirements. All additives such as cement retarders and friction reducers will be formulated based on lab test results from actual field samples.

10.0 DRILLING CONTINGENCY

No problems are anticipated in the 8½" hole which would prevent 7" casing being run and cemented to prognosed total depth. However a contingency plan has been prepared in the event a BHA becomes stuck or lost down hole and cannot be fished to side track around the fish and continue to drill 8½" hole to TD.

Depending on the depth or if any potential reservoir,an intermediate logging suite may be run as in Section 3.0 of this programme, prior to sidetracking. A separate programme will be issued to setting of a kick-off plug and the drilling of an initial sidetrack hole. Thereafter, drilling will re-commence as planned with modified drilling practices as deemed necessary to prevent a repeat sidetrack operation.

11.0 PRESSURE TESTING SCHEDULE

905297 031

	BOP Annular Preventer (psi)	BOP Rams & Valves (psi)	Choke Manifold (psi)	Manifold & Kelly Valves (psi)	Casing / Packoff (psi)
After 9-5/8" casing	1,500	3,000	3,000	3,000	-
After 7" casing	1,500	3,000	3,000	3,000	3,000

NOTE

1) All tests to include a 200 psi low pressure test prior to testing to the values shown above.

2) Shear rams will only be tested against casing to maximum 70% of rated burst pressure of the weakest casing.

3) Test pressures will be held for 10 minutes for low/high pressure tests if straight line. Otherwise test must be held for 15 minutes with less than 5% bleed-off in pressure.

4) For all pressure tests open void behind casing to vent any trapped pressure and hence eliminate casing collapse.

12.0 REPORTING PROCEDURES

12.1 Data Collection

The Drilling Supervisor will be responsible for maintaining equipment inventories, chronological records and communications with the Sydney drilling office. Reports will include:

- Daily Drilling Report, includes 06:00 am update
- Weekly Safety Inspection Report
- Daily Consumption Report
- Accident & Emergency Response Incident Report, Safety Meeting and Safety Drill Report
- BOP Tests, Bit Records, Casing and Cementing Reports,
- Equipment Failure Reports, F.I.T.'s and BHA Records
- Drilling Contractor and Third Party Job Reports, such as IADC Report, Job Service Reports and Inventory Reports.

12.2 Data Distribution

The attached chart defines the distribution of exploration data.

Drilling operations data will be distributed as follows:

Cultus Sydney

Operating reports and analytical data will be retained in the Cultus office in Sydney. Data distribution will be coordinated by that office.

Government Authorities

Distribution will be coordinated by the Sydney office.

	CULTUS			DAEM		
	Daily/As Req'd	Weekly	End of Well	Daily/As Req'd	Weekly	End of Well
Daily Drilling Report (Company)	X					
Daily Summary				X		
Weekly Summary	N/A					
Time Breakdown	N/A					
IADC Report	X					
Geological Report	X			X		
Mudlogging Report	X					X
Mud Log	X					X
Wireline Logs	X					X
Weekly Rig Inspection		X			X	
Casing & Cementing Reports	X					
Daily Workboat Manifest	N/A					
Mud Reports	X			X		
Helicopter Operations	N/A					
Abandonment Programme / Approval			X			X
Testing Programme	X			X		
Testing Results	X			X		
Completion Report			X			X
L.T.I.F.R.			X			X
Final Well Report			X			X

* Reports/Programmes submitted daily or as operations require

905297 033

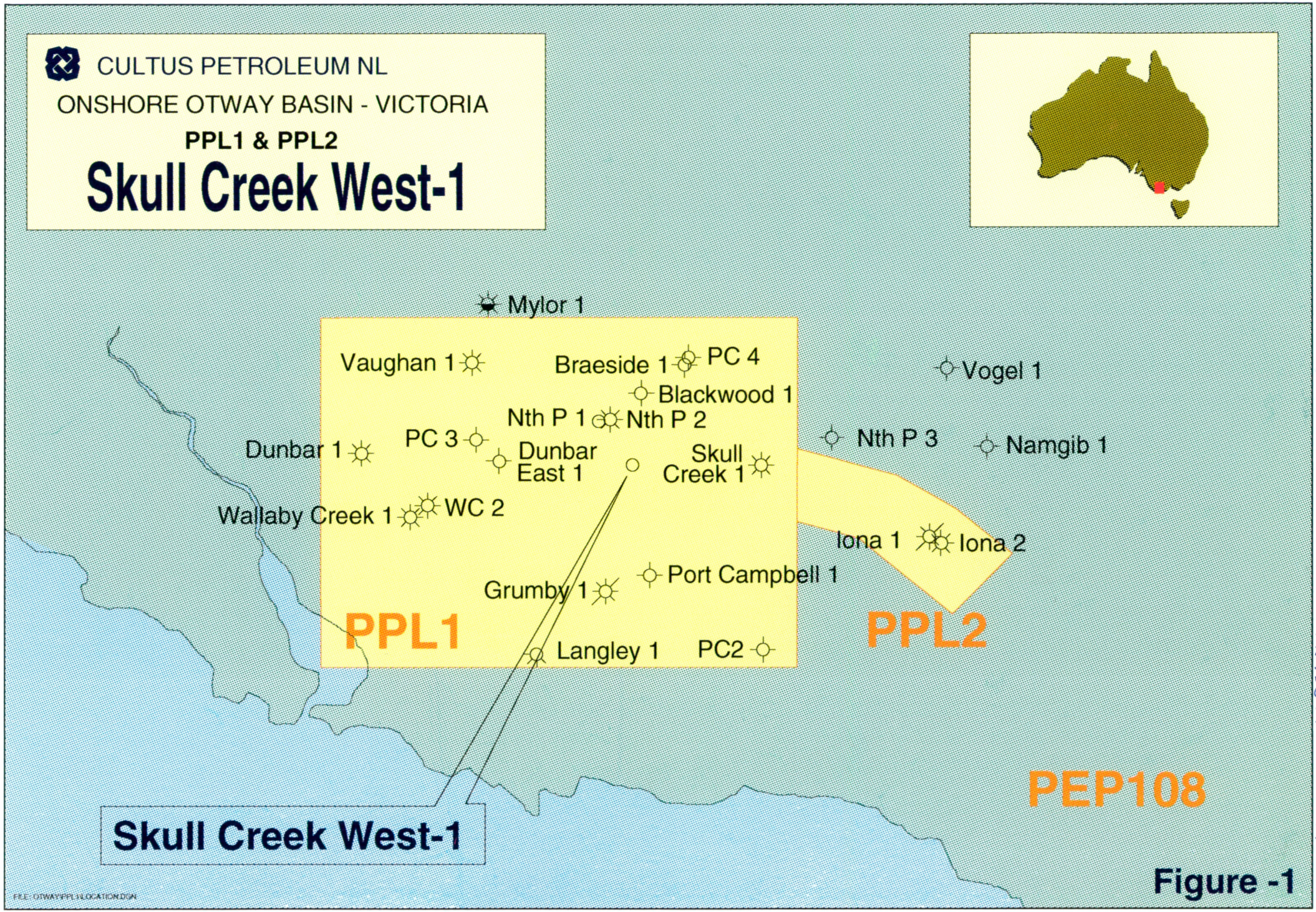

Figure -1

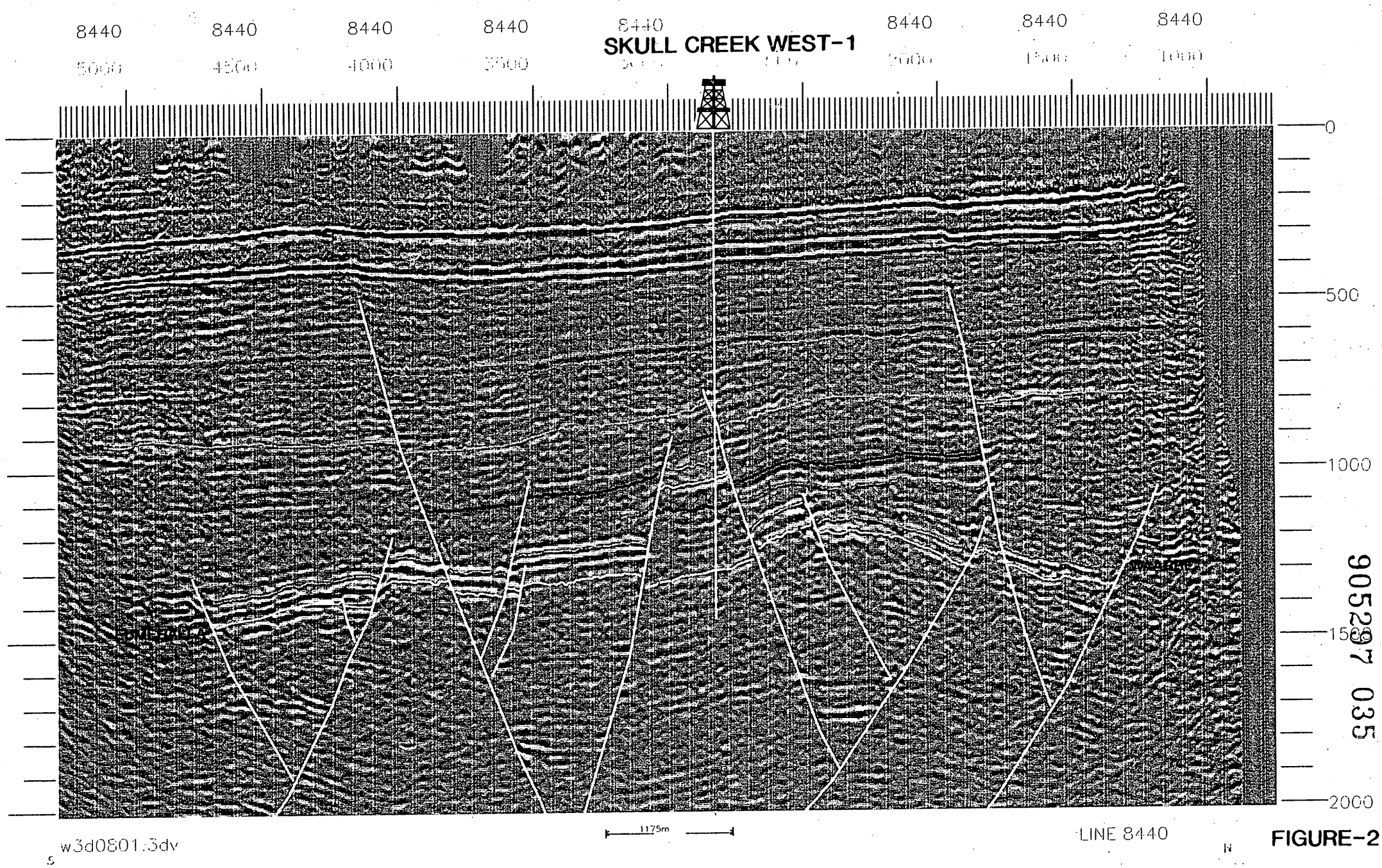

FIGURE-2

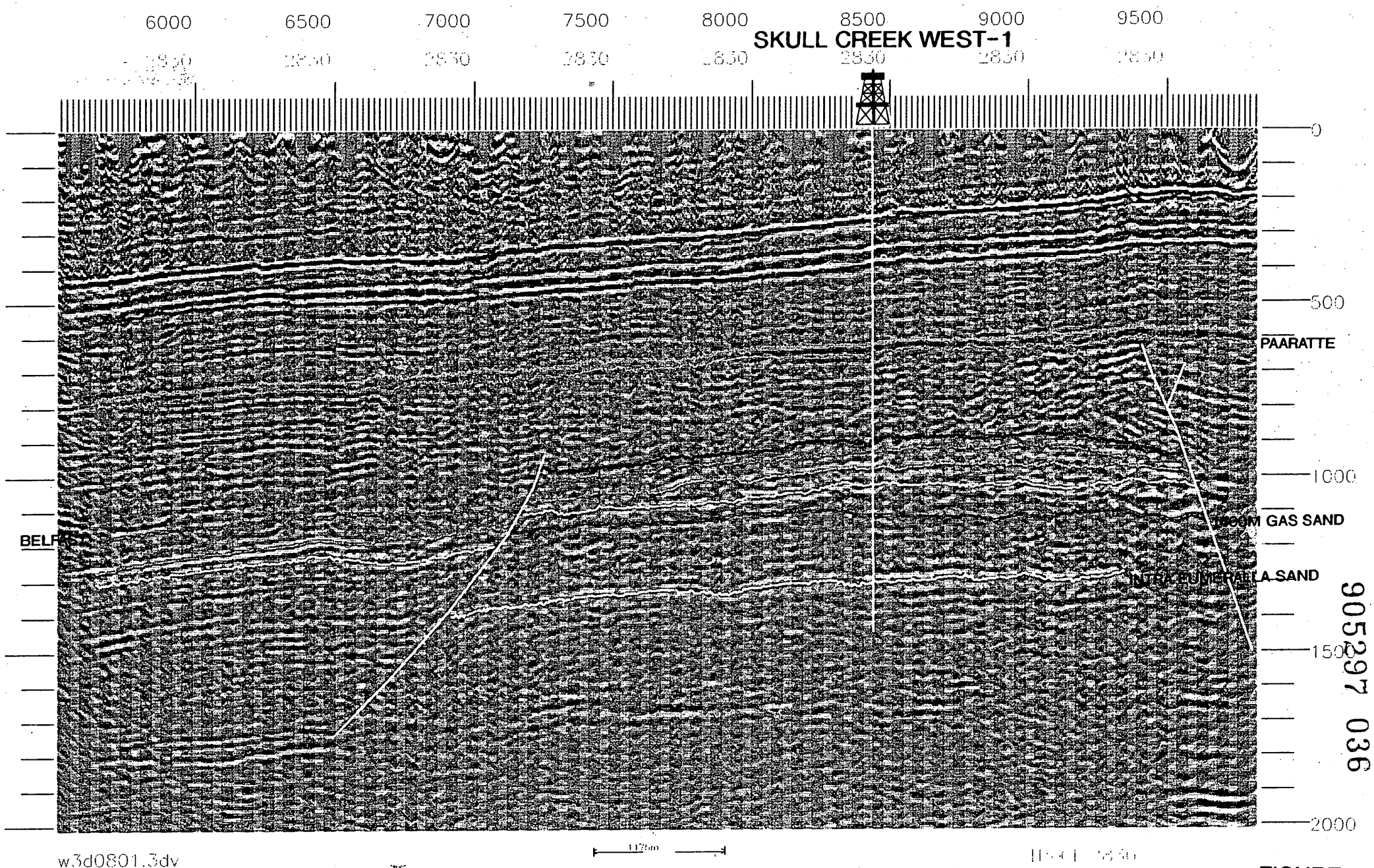

FIGURE-3

SKULL CREEK WEST -1

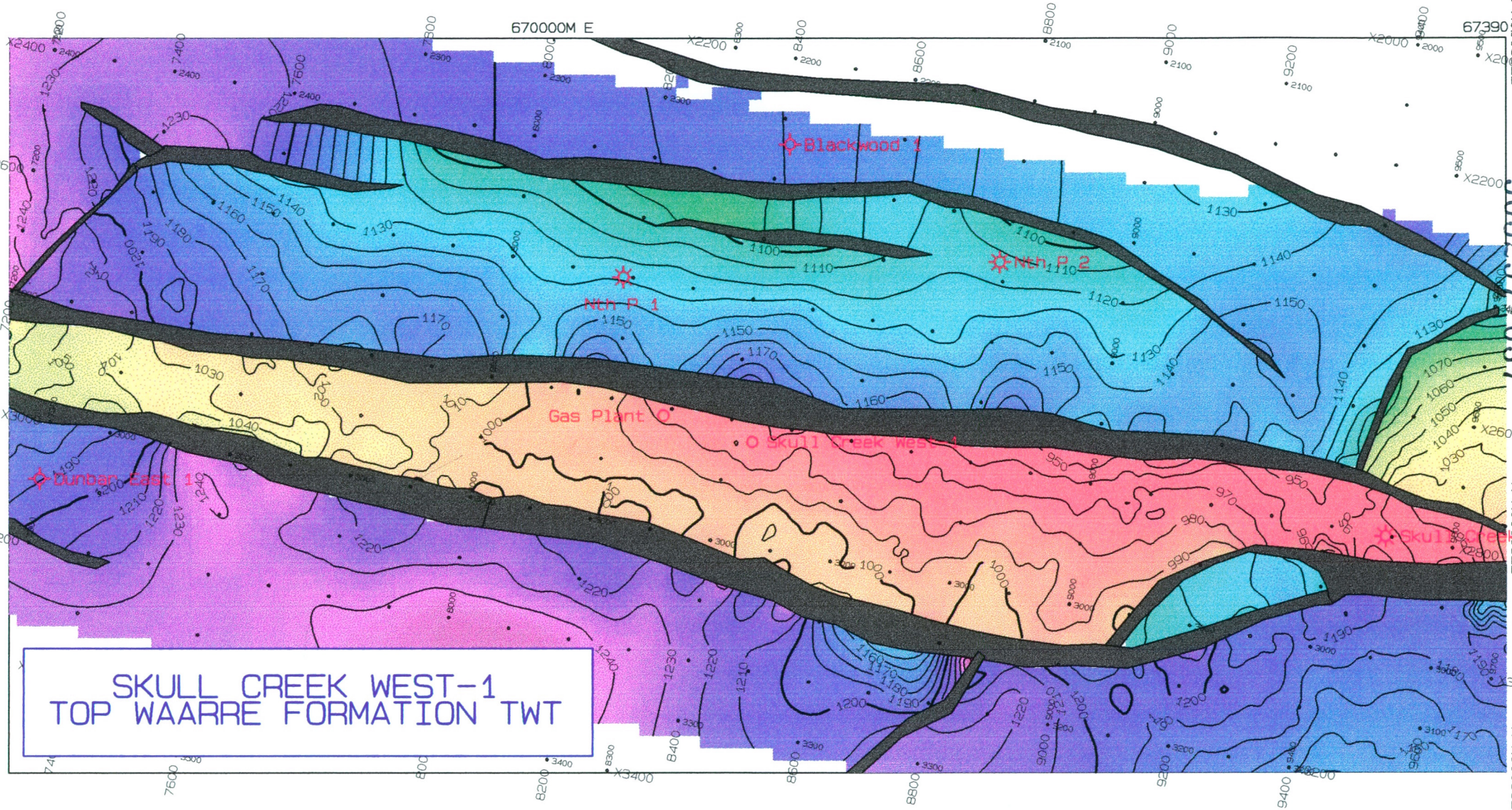

FIGURE 4

SKULL CREEK WEST -1

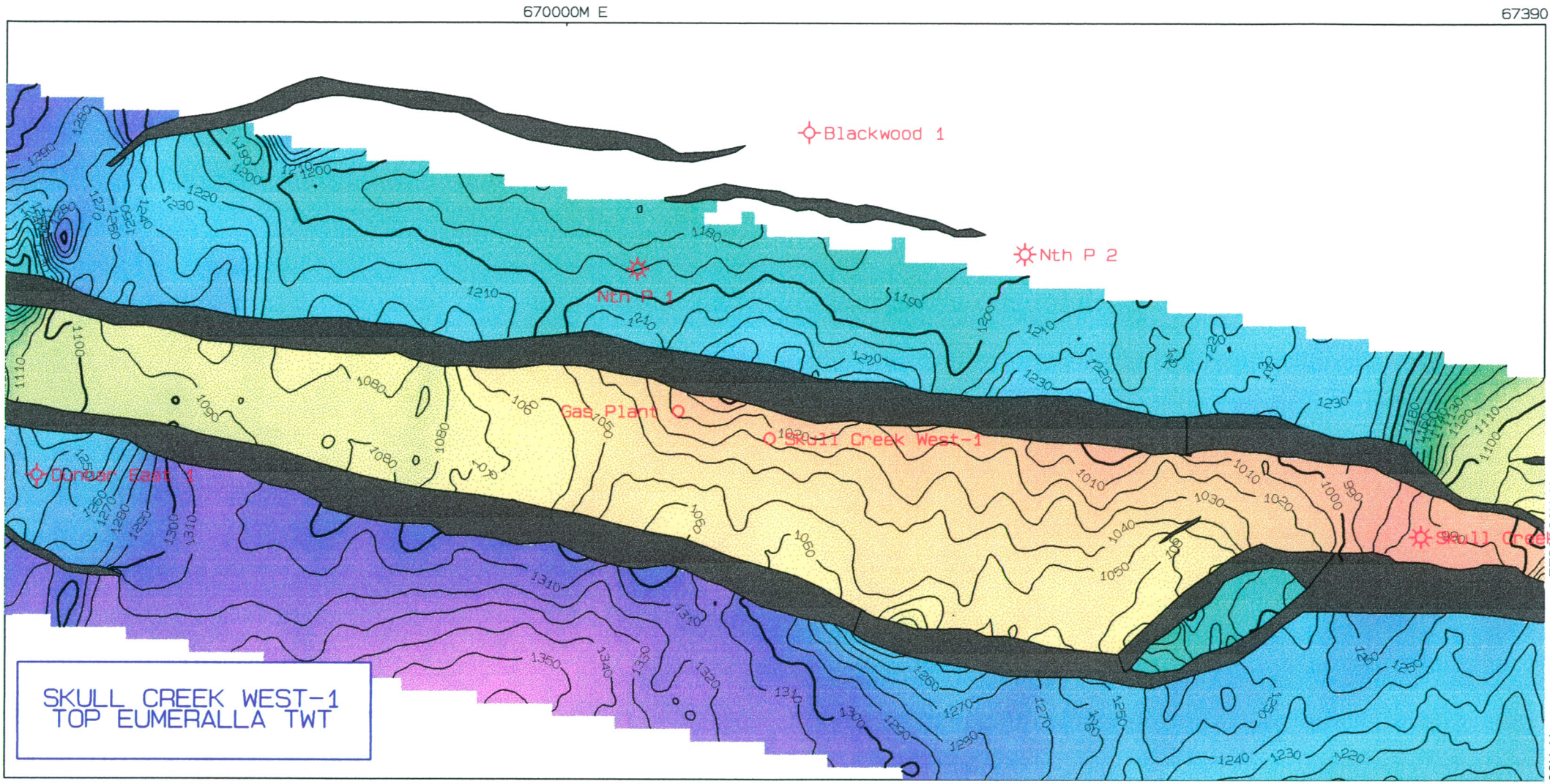

Figure-5

SKULL CREEK WEST -1

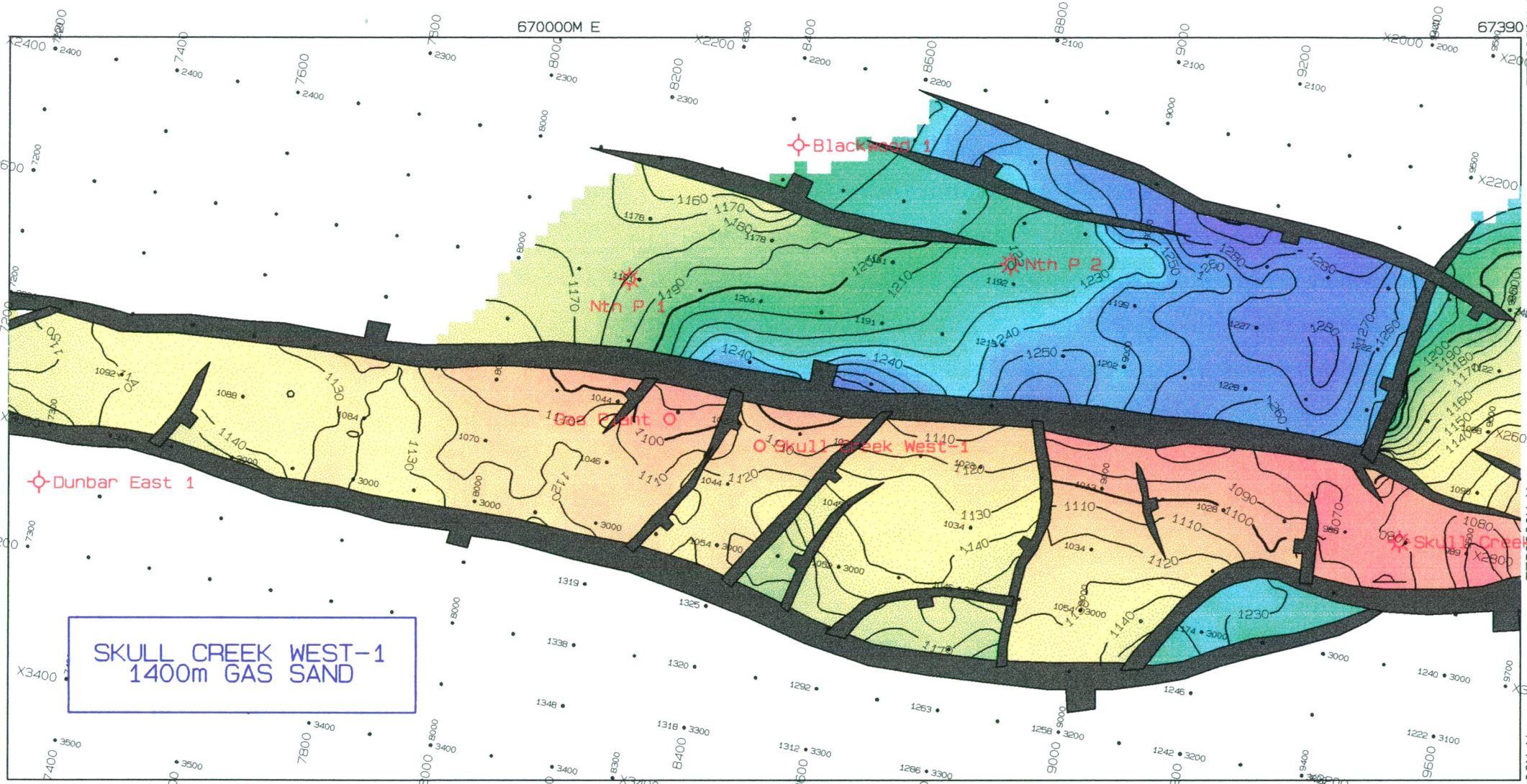

FIGURE 6

SKULL CREEK WEST -1

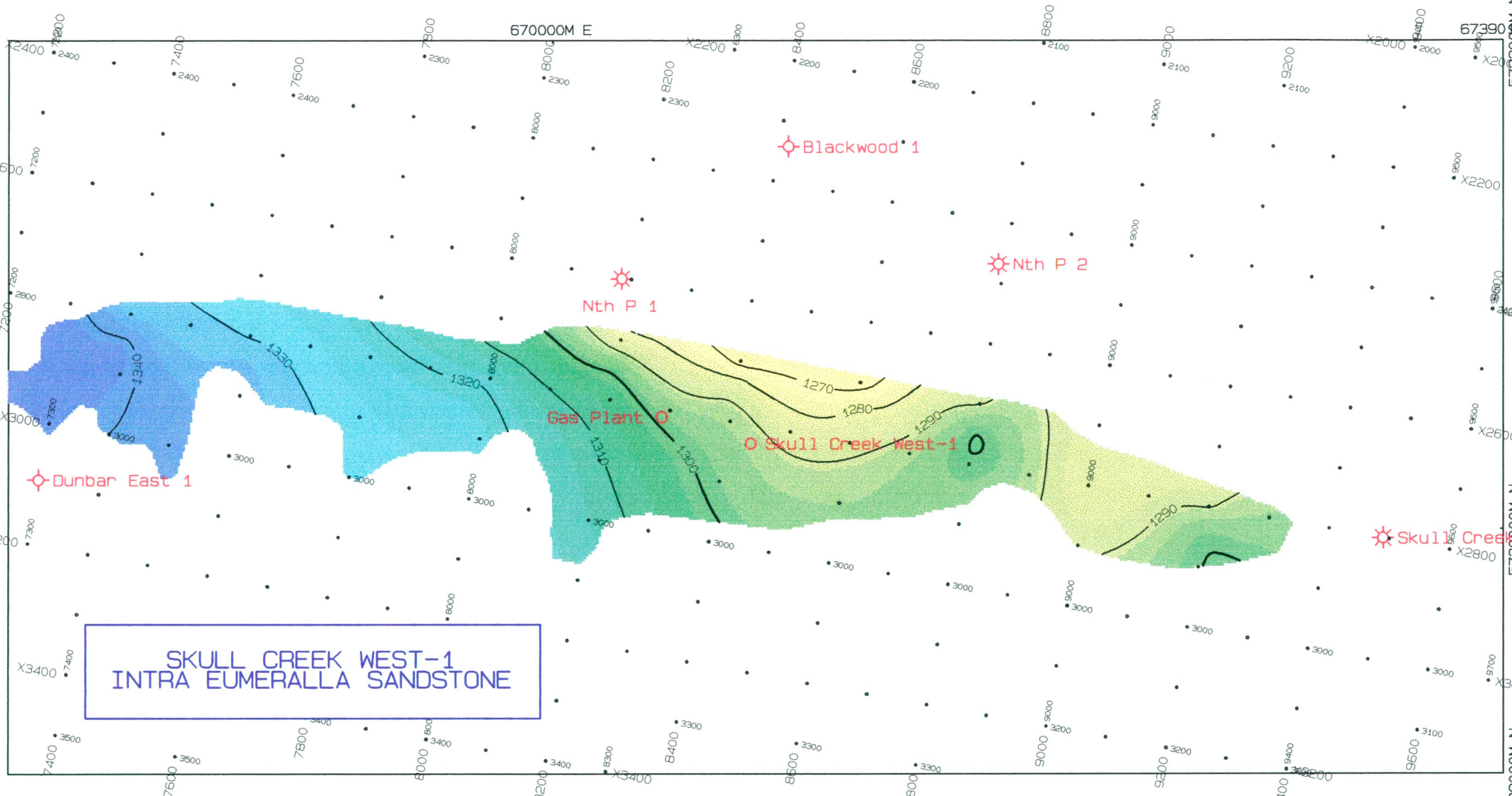

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FIGURE 7

PE905297 - colour005

CULTUS

Skull Creek West-1
PREDICTED SECTION

GROUND LEVEL: 96m
ROTARY TABLE: 4.3m

LAT: 38°33'31.50"
LONG: 142°57'37.5"

LOCATION: INLINE :8440 XLINE : 2830
RIG: ODE RIG 30

DEPTH (mGL)	AGE	UNIT		TWT (msec)	DEPTH mRT	DEPTH mSS	LITHOLOGY	OBJ.	DESCRIPTION
					4.3	-96			
500	TERTIARY	HEYTESBURY GP	PORT CAMPBELL LIMESTONE						LIMESTONE
			GELLIBRAND MARL	262	351.3	251			MARL
			CLIFTON FM.	336	429.3	329			
		NIRRANDA GP	Mepunga Formation	392	491.3	392			SANDSTONE
		WANGERRIP GP	DILWYN FORMATION		732.3	632			SANDSTONE
			PEMBER MUDSTONE	618	792.3	692			
			PEBBLE POINT FM	646	826.3	726			SANDSTONE
1000	CRETACEOUS	SHERBROOK GP	PAARATTE FM	870	1118.3	1018		FAULT	SANDSTONE MUDSTONE
			SKULL CREEK MUDSTONE	900	1166.3	1066			MUDSTONE
			NULLAWARRE FM	934	1212.3	1112			SANDSTONE
			BELFAST MUDSTONE	978	1271.3	1171			MUDSTONE
			WAARRE FORMATION	1030	1351.3	1251			SANDSTONE
1500		OTWAY GP	EUMERALLA FORMATION						
			1400M GAS SAND	1112	1474.3	1374			SANDSTONE
			INTRA EUMERALLA SANDSTONE	1296	1780.3	1680			SANDSTONE
2000				1440	2000.3	1900			CLAYSTONE INTERBEDDED WITH MINOR SANDSTONE
							T.D 2000.3m RT		

FILE: OTWAY\PPL1\SKULLSEC.DGN

FIGURE 8

Well: Skull Creek West-1

Cultus Petroleum NL

Surface Location X: 670 814.18 E Y: 5 730 350.70 N

Seismic Reference Waarre 3D Xline 2830 Inline 8440

GL (m): 96 mGL *RT (m):* 4.3 TBC

Figure 9

Proposed Depth vs. Time Curve

Drilling Summary

A 12¼" hole will be drilled to +/- 760 mRT into the Pember Mudstone to provide a good casing shoe. 9-5/8" casing will thn be run and cemented to surface.

After drilling the shoe and conducting a FIT, an 8½" hole will be drilled to the top Waarre sand. Two 18m cores are planned, followed by two further 18m cores in the Eumeralla. Subject to hydrocarbon shows a DST may be conducted prior to planned TD at 2000 mRT.

Subject to evaluation, 7" casing will be run and cemented to 50 m above the Skull Creek Mudstone.

Bits

❶ 12¼" Bit
Make: Varel
IADC: 114
Type: L114
Jets: 3x16
WOB: 10/30
GPM: 700
RPM:100/150

❷ 8½" Bit
Make: Smith
IADC: 417
Type: M02
Jets:3x14
WOB: 10/35
GPM: 450
RPM: 200
Motor:6¾"

8½"
Corehead
TBA

❸ 8½" Bit
Make: Smith
IADC: M223
Type: M73P
Jets:6x9
WOB: 10/35
GPM: 400
RPM: 200

Drilling Fluid

12¼" Hole
Top hole drilled with fresh water and hi-vis PHG sweeps. Fresh water with dilution and/or KCl treatment for marls. Allow mud-up near casing point.

8½" Hole
Displace to 1%KCl/PHPA while drilling ahead. Maintain tight fluid loss.

Properties
MW: 9.0 ppg
FL: 5 - 6 cc
PV: <18
YP: 15 - 25
pH: 9.0 - 10.0

Casing & Cementing

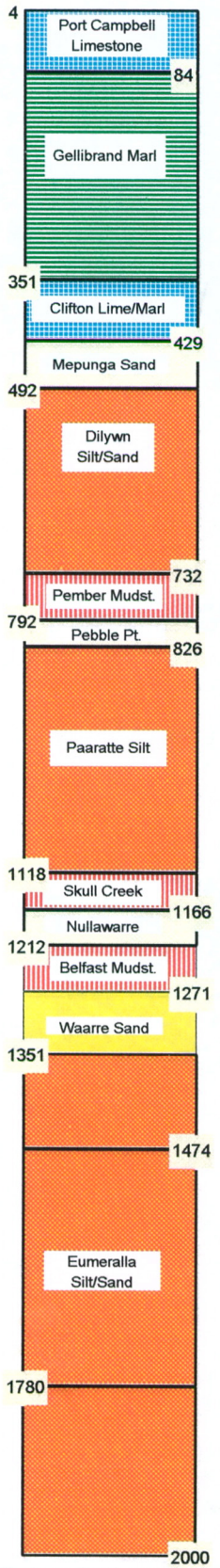
Surface Casing
9-5/8" 43.5# N80 BTC. & 36# K55 LTC

9-5/8" Cementing
100m class G neat @ 15.8 ppg with 20% excess + 660m class G with 3% PBG @ 12.8 ppg with 50% excess

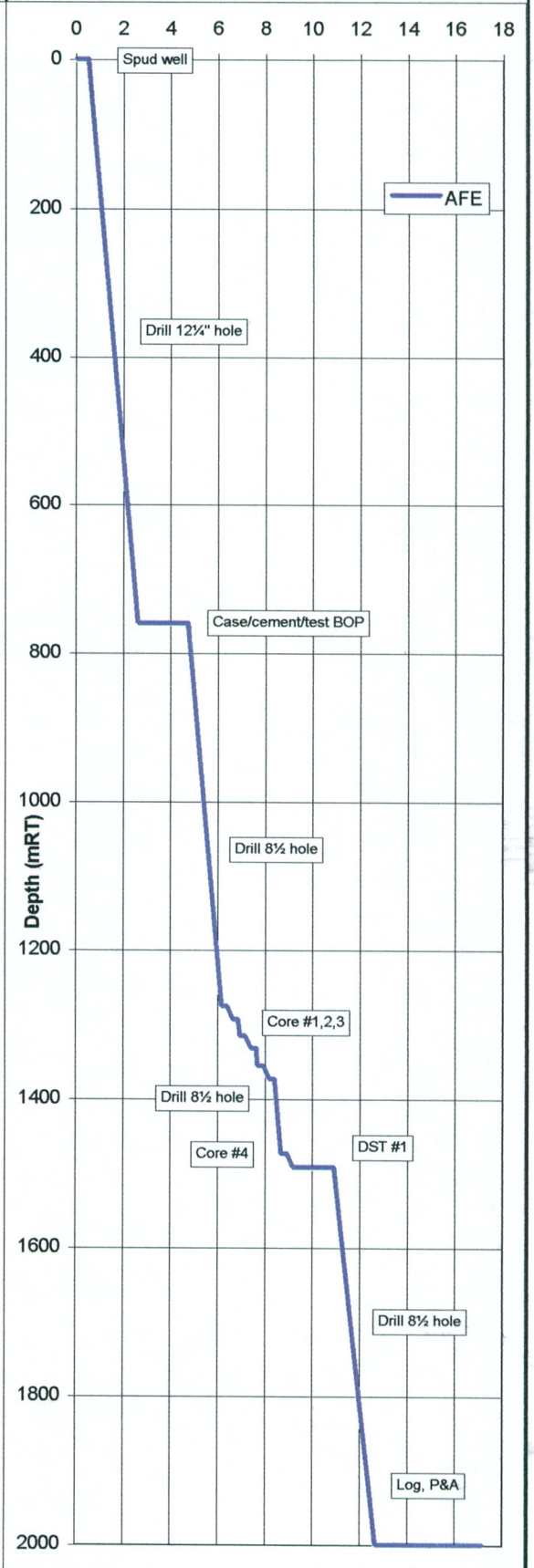
Production Casing
7" 26# K55 LT&C

7" Cementing
780 m of neat class G @ 15.8 ppg + 50m class G with 3% PBG @ 12.8 ppg and 20% total excess

Geology (mRT)



Days from Spud



INTRODUCTION

Skull Creek West #1 is an exploration appraisal well near the Skull Creek #1 discovery in June 1996. A simple water gel-caustic spud mud is programmed to spud the 12¼" surface hole followed by a mudded up KCl/PHPA system to TD in 8½" hole. All mud parameters in this hole section will be built progressively drilling continues to be met just prior to penetrating the Waarre sandstone. Mudding up will concentrate on improving the hole cleaning with Flowzan and fluid loss control with Drispac. JK-261 will be the primary inhibiting agent (along with KCl) and will aid in reducing fluid loss and increasing the yield point. Some prehydrated gel (PHG) will also be added to provide a foundation for a good quality filter cake.

WATER SUPPLY

All water (whether fresh or recovered from the sump) should be pre-treated with Alum (1 ppb) to flocculate the dispersed marl and aid in maintaining low solids. This should reduce water additions and sump volumes accordingly. The hardness of all water is to be checked prior to addition. Sump water should only be used and treated if the hardness is less than 400 mg/l otherwise use fresh water. Fresh water must be used for the KCl/PHPA mud system.

Drill water is expected to have the following properties; chlorides 700 mg/l and hardness 160 mg/l. The Mud Engineer is to test the supply water for chlorides, hardness, pH, P_f/M_f, carbonates and bicarbonates.

SOLIDS CONTROL

As the rig will not have a centrifuge installed, existing solids control equipment must be in optimal condition.

Shale shakers are Linear motion with pyramid type screens. The finest screens possible must be installed for all sections of hole. In the top section of 8½" hole, after displacing the hole to the premixed KCl PHPA fluid, some losses may be experienced over the shale shakers. Although much of this volume can be recirculated back from the sump later in the well, the shaker screens should be increased for approximately 1 circulation while the PHPA becomes sheared through the bit.

The desander and desilter should be checked prior to spud by running them with fresh water. Worn cones should be replaced and feeder pressure should be checked. While drilling, underflow should be checked frequently for both weight and volume. Discharge should be sprayed.

ANTICIPATED PROBLEMS

Lost Circulation

There is a possibility of lost circulation in this well particularly in the Port Campbell Limestone and also high seepage losses in the Dilwyn formation. Adequate amounts of lost circulation material should be kept on the rig site to prevent loss of expensive mud. Unless loss of mud can be tolerated due to solids content being high, thought should be given to treating significant seepage losses.

Carbon Dioxide Contamination

Problems may arise where carbon dioxide has dissolved into the mud system. This can lead to bicarbonate contamination. In the event this problem is suspected, (ie. it can usually be picked where P_f and M_f values start to significantly diverge from each other), carbonate levels may be determined using a Garret Gas Train.

Where alkalinity is due mainly to carbonates and bicarbonates, adding hydroxyl ions (either as caustic soda / caustic potash, or lime) will reduce bicarbonates to carbonates. These in turn will be precipitated out as calcium carbonate if calcium is present. If it is not present, addition of lime is ideal to increase both calcium and hydroxyl levels.

12¼" SURFACE HOLE SECTION

The 12¼" will be drilled to within approximately 30m from the base of the Pember Mudstone using water in combination with a simple Gel Spud Mud as viscosity sweeps. This hole section is expected to initially penetrate the Port Campbell Limestone. Significant losses to this formation are not expected in this area, however lost circulation material will be on site as a contingency. While drilling with fresh water, 10 bbl slugs of PHG at each kelly down should be sufficient to clean the hole. This volume may be varied as hole conditions dictate. The PHG should not be flocced with lime for additional viscosity as unused gel can be utilised for the next hole section. PHPA can be added for greater viscosity.

The highly dispersive, mud making Gellibrand Marl and Mepunga formation lie immediately below the Port Campbell Limestone. The Gellibrand Marl formation top can vary so care must be exercised when approaching this formation to **cease any further additions of PHG** once penetrated. As mud rings are common and can lead to significant down time, the mud viscosity should be minimised by dilution while still achieving good hole cleaning. Previous experience has shown if "golf ball" sized cutting are seen at the shakers the formation of mud rings is imminent and immediate and heavy dilution is required. Sapp can be used to disperse the marl or if the solids are low, a brine of 6-10% KCl can be bled in to inhibit the cuttings. Care must be taken if significant solids are present as the KCl may flocculate the fluid.

Dilution rates can be reduced, alum additions ceased and the mud viscosity allowed to increase with native solids once the Gellibrand and Clifton Marls have been drilled. Remaining PHG can be added at this point if required to control the fluid properties. The Dilwyn sands can cause seepage losses and depending upon the severity can be controlled with the addition of Enerseal Fine and/or coarse. Barite should be used for heavy weight pills at casing point and a PHG pill spotted on bottom prior to POOH for casing.

Mud Properties Outline - 12¼" Hole Section

Property	Unit	Parameters
Mud Weight	ppg	Minimum
Funnel Viscosity	sec/qt	28 - 60
pH		7.0 - 8.0

Mud Weight - 12¼" Hole Section

The spud mud will start essentially unweighted. Solids are be kept to a minimum through the running of all solids control equipment and fine (eg. S110 or S140 as a minimum) shaker screens. Maintaining the weight at no more than 9.0 ppg will minimise any possible down hole losses.

Rheology: Yield Point and Funnel Viscosity - 12¼" Hole Section

Initially, the yield point should be at a minimum of 15 lbs/100ft² (funnel viscosity of approximately 28 - 60 sec/qt). While drilling the Gellibrand Marl dilution will be required to control the yield point at approximately 15 lbs/100 sqft.

Mud Additive Guide - 12¼" Hole Section

Properties	Increase		Decrease	
	Primary	Secondary	Primary	Secondary
Mud Weight			Solids Control	Dilution
Plastic Viscosity			Solids Control	Dilution
Yield Point	Gel		Dilution	
Gel Strengths			Dilution	
pH	Caustic Soda		Dilution	
Hardness (Ca^{2+})			Bicarb Soda	
(Mg^{2+})			Caustic Soda	
MBC	Gel		Dilution	

Product Functions - 12¼" Hole Section

IdGel	Viscosifier and Filter Cake.
Caustic Soda	pH adjustment, precipitation of soluble magnesium
Bicarb Soda	Precipitation of soluble calcium.
Alum	solids control
SAPP	dispersant
KCl	marl inhibition
PHPA	viscosity (extender if required)

Mixing Procedures - 12¼" Hole Section

1. Add 120 - 150 bbls water to Premix or Suction tank.

2. Treat out hardness if water < 400 mg/l with bicarb soda (for calcium) or caustic soda (magnesium). Note: hardness is not expected with the fresh water which will be supplied.

3. Add 1 ppb Alum to aid maintaining low solids and to flocculate dispersed marl.

4. Pre-hydrate (minimum of 6 hours) **bentonite** (IdGel) at approximately 25 ppb for as long as possible for high viscosity sweeps.

Treatment While Drilling - 12¼" Hole Section

Further bentonite additions are not anticipated. Additions of caustic soda are not anticipated, as these may aggravate problems associated with the highly dispersive Gellibrand Marl.

Volumetric & Dilution Projection	bbls
Premix	150
12¼" Hole (0 - 800m)	375
Maintenance/Dilution	1650
Recovered	0
Total	2175

Product	Unit	Pre-Mix		Dilution Volume		Total
		ppb	Usage	ppb	Usage	Usage
Alum	55			1.0	30	30
Barite	55				40	40
Caustic Soda	55	0.4	1			1
IdGel	55	25.0	68			68
KCl	110				40	40

8½" PRODUCTION HOLE SECTION

This section of hole is programmed to be drilled from the 9-5/8" shoe at c.760m with a KCl/PHPA based mud system to a proposed TD of 2000m. Initially, a lower concentration of PHPA will be used and some pre-hydrated bentonite will be required to provide some initial viscosity. As drilling progress toward the initial target of Nullawarre sandstone is expected to be rapid, the system should be at the planned specifications prior to drilling out the 9-5/8" shoe.. The fluid is designed to minimise cost while maintaining hole cleaning, inhibition and fluid loss for the duration an extensive coring and logging programme.

Drill the cement and shoe track with water circulated through the pill tank. While drilling out the shoe sweep with a PHG pill and then displace the hole to KCl/PHPA fluid, dumping returns of cement contaminated mud and PHG pill.

The KCl concentration should be maintained at 1-2% , however it is imperative the chlorides are below 10,000 mg/l for log analysis.

The pH should be maintained 8.0 - 9.0 to minimise dispersion of drilled cuttings and optimise the performance of JK-261.

For corrosion control, add sodium sulphite to maintained a concentration of 100mg/l at the flowline. while drilling this entire section of 8½" hole. Additionally, an amine inhibitor, Cronox 3823 should be used while laying out drillpipe at the end of the well at the rig contractors request..

Mud Properties Outline - 8½" Hole Section

Property	Unit	Parameters
Mud Weight	ppg	Minimum
Drilled Solids	%wt	< 5.0
Funnel Viscosity	sec/qt	28 - 60
Plastic Viscosity	cp	<18
Yield Point	lb/100ft^2	15 - 25
Gels Strength	lb/100ft^2	10 / 20 max
API Fluid Loss	cc	4 - 6
pH		7.0 - 8.0
KCl	%wt	1 - 2
Chlorides	mg/l	8,000 - 10,000
PHPA excess	ppb	0.5 - 0.8
Hardness	mg/l	<200
Sulphites	mg/l	100 - 150

Mud Weight - 8½" Hole Section

Maintain the mud weight as low as possible, but no more than +/-9.0 ppg. As there will be no centrifuge at the rig, solids and therefore mud weight will tend to increase naturally. Therefore once the mud has settled down, continuous operation of the desander/desilter and installation of the finest possible screens (S110, Pyramid 145 or equivalent) is required to minimise dumping. Drilled solids should be < 5%

Rheology - 8½" Hole Section

The yield point should be maintained in excess of 15 lbs/100ft² throughout this section of hole, as packed bottom hole assemblies are to be used.

The mud rheology should be on specification as the 9-5/8" shoe is drilled out.. As drilling progresses, the yield point will increase naturally as the fluid loss is lowered to the region of <10 cc's. Although a lower limit of 15 lbs/100ft² should be adhered to, allowing the yield point to increase to 25 lbs/100ft² should not be discouraged. (Approximately 20 - 25 lbs/100ft² is an ideal range.)

Good solids control practices are expected to minimise the build up of solids and consequently the plastic viscosity. If solids control is optimised, the only method to reduce the plastic viscosity is via dilution.

Fluid Loss - 8½" Hole Section

There is a pressing need for tight fluid loss control in the top section of 8½" hole. As some seepage loss to sands may be found in this top section of hole, it should be noted that reductions in API Fluid loss will have negligible effect on reducing these whole mud losses. Lost circulation material should be used to control these losses, if they are deemed serious enough. In any event, the use of JK-261 will maintain the fluid loss at reasonable levels of approximately 12 - 15 cc's naturally. If further reductions in fluid loss sre necessary, use Drispac Plus Regular (or Super Lo if the yield point is at or near an upper limit of 25 lbs/100ft²).

As the Nullawarre formation approaches, the fluid loss will be lowered to the region of <6 cc's. This will be achieved primarily with Drispac Plus Regular. This level will be maintained to TD.

Inhibition - 8½" Hole Section

Inhibition will be achieved with the synergistic effects of both KCl and JK-261 (PHPA). Although previous offset wells have been drilled with both inhibitive and non-inhibitive fluids (albeit with higher mud weights than are programmed here), both chemicals will aid in maintaining other properties. It is a possibility that chlorides will be run at a prescribed minimum lower level determined by Geology, in which case the KCl will be a source. Additionally, JK-261 will lower consumption of other polymers that are normally required to increase yield point and decrease fluid loss.

Mud Additive Guide - 8½" Hole Section

Properties	Increase		Decrease	
	Primary	Secondary	Primary	Secondary
Mud Weight	Barite	KCl	Solids Control	Dilution
Plastic Viscosity			Solids Control	Dilution
Yield Point	JK-261 Flowzan*	Gel	Dilution	
Gel Strengths			Dilution	
API Fluid Loss			Drispac	CMC-LV
pH	Caustic Soda		Dilution	
Hardness			Bicarb Soda	
MBC	Gel		Dilution	

* Approval of Drilling Supervisor required

Product Functions - 8½" Hole Section

IdGel	Viscosifier and Filter Cake.
Caustic Soda	pH adjustment.
Bicarb Soda	Precipitation of soluble calcium.
JK-261	A solid 100% active PHPA used as an encapsulating polymer to provide shale inhibition.
KCl	Source of soluble chlorides and potassium
Drispac Plus Regular	Fluid Loss.
Sodium Sulphite	Corrosion control agent to reduce soluble Oxygen levels.
Enerseal	Lost circulation material.

Mixing Procedures - 8½" Hole Section

1. Dump and clean surface tanks. Any remaining PHG or KCl brine can be used for this section. Approximately 800 bbl of KCl/PHPA mud in total will be required.

2. Fill available mud tanks with fresh water, noting two separate mud batches have to be built.

3. Treat out hardness with bicarb soda (for calcium) or caustic soda (magnesium) provided the drill water is < 400 mg/l. Note: hardness is not expected with the fresh water which will be supplied.

4. Isolate one tank and prehydrate bentonite (IdGel) with sufficient concentration so when blended with the remainder of the system the resultant bentonite concentration is 2 ppb.

5. Into other mud tanks mix the following chemicals to achieve the following concentration when blended with the entire system:

   - JK-261 0.5 ppb
   - KCl 7.5 ppb
   - Caustic soda for pH of approximately 8.5.
   - Bicarb Soda to reduce hardness <200 mg/l
   - Drispac Plus Regular 1.0 ppb
   - Flowzan 0.5 ppb

6. Circulate the premix through the solids control equipment and gun lines to aid shearing and assist mixing. Additions of KCl (7 ppb or 2%) are to be made after the addition of PHPA, for additional inhibition.

7. After all chemicals have been thoroughly mixed and sheared, blend the PHG and KCl/PHPA systems together just prior to drilling out. Some initial flocculation may be expected, but this will flatten out after more mixing.

Treatment While Drilling - 8½" Hole Section

All chemicals should be pre-hydrated prior to addition to active system. Initially in the top section of hole, hole cleaning will be the main priority. The yield point will increase gradually as drilled solids content increases (ie. combination of PHPA and solids). However, if further increases are deemed necessary, either prehydrated gel (assuming the MBC is below 10 ppb) may be added or if the fluid loss is at specification, Flowzan can be added with Drilling Supervisor approval. Flowzan should not be required however with the PHPA mud system.

When drilling ahead, further chemical additions should be made to maintain properties. If reductions in fluid loss are required, Drispac Plus Regular or if the yield point is at the upper limit Super Lo can be used.

The PHPA excess concentration should be maintained at approximately 0.5 - 0.75 ppb with the addition of JK-261. This product is a "sacrificial" type polymer, in that it will adsorb onto drilled cuttings and the borehole. However, this effect is determined by the formation's reactivity, in that little adsorption will occur to sands, but considerable depletion may occur to formations higher in clay content.

The KCl concentration should be maintained at 1-2% , however it is imperative the chlorides are below 10,000 mg/l for log analysis.

The pH should be maintained 8.0 - 9.0 to minimise dispersion of drilled cuttings and optimise the performance of JK-261.

Dump settling tanks as required to prevent solids build up, recycling fluid from the sump provided excessive treatment is not required.

Volumetric and Material Projections - 8½" Hole Section

905297 050

Volumetric Projection	bbls
Recovered	0
Initial Premix	800
Dilution Volume	1560
Total Volume	2360
8½" Hole Volume (760 - 2,000m)	276

Material Projection - 8½" Hole Section

Product	Unit	Initial Premix		Dilution Volume		Total Usage
		ppb	Usage	ppb	Usage	
Barite	55 lb				200	200
Bicarb Soda	55 lb			1.3	37	37
Caustic Soda	55 lb	0.1	1	0.2	6	7
Drispac Plus	50 lb	1.0	16	1.0	31	47
Drispac Plus LV	50 lb			0.5	16	16
Enerseal Fine	88 lb			2.0	35	35
Flowzan	55 lb	0.5	7			7
IdGel	55 lb	2.0	29			29
JK-261	55 lb	0.5	7	2.0	57	64
KCl	110 lb	7.5	54	5.5	78	132
Sodium Sulphite	55 lb	0.5	7	1.0	28	36

APPENDIX 3

ODE RIG #30 SPECIFICATIONS
CONTRACTOR'S EQUIPMENT

CONTRACTOR'S RIG	:	Rig #30 - rated to 11,000 ft. with 4.1/2," drill pipe
DRAWWORKS	:	Ideco H725 Hydrair, driven by EMD D79 electric motor. Maximum input 900 hp Parmac V-80 Hydromatic brake. Transmission - 3 speed transmission with Fawick 40CB525 air clutch.
ENGINES	:	Four (4) Caterpillar Model 3412 PCTA diesel engines.
SUBSTRUCTURE	:	One piece substructure 14' high x 13'6" wide x 50' long with 12' BOP clearance. Setback area loading: 250,000 lbs Casing area loading: 275,000 lbs
MAST	:	Dreco Model #: M12713-510 Floor Mounted Cantilever Mast designed in accordance with API Specification 4E Drilling & Well Servicing Structures. Hook load Gross Nominal Capacity - 510,000 lbs with:- 10 lines strung - 365,000 lbs 8 lines strung - 340,000 Lbs Clew working height of 127' Base width of 13'6". Adjustable racking board with capacity for:- i) 108 stands of 4.1/2" drill pipe, ii) 10 stands of 6.1/2" drill collars, iii) 3 stands of 8" drill collars Designed to withstand an API windload of 84 mph with pipe racked and 100 mph with no pipe racked.
CATHEADS	:	One (1) Foster Model 37 make-up spinning cathead mounted on drillers side. One (1) Foster Model 24 break-out cathead mounted off drillers side.
CROWN BLOCK	:	215 ton with five (5) 36" sheaves and one (1) 36" fastline sheave grooved 1.1/8".
TRAVELLING BLOCK	:	One (1) 667 Crosby McKissick 250 ton combination block hook Web Wilson. 250 ton Hydra hook Unit 5 - 36" sheaves.
SWIVEL	:	One (1) Oilwell PC-300 ton swivel. 192 tons API bearing rating at 100 rpm.
RIG LIGHTING	:	Explosive proof fluorescent. As per approved State Specifications.
MUD PUMPS	:	Two (2) Gardner Denver mud pumps Model PZ-8 each driven by 800 HP EMD motors. 8" stroke with liner size 6".

MIXING PUMPS : Five (5) Mission Magnum 5" x 6" x 14" centrifugal pumps complete with 50 HP, 600 Volt, 60 Hz, 3 phase explosion proof electric motors.

MUD AGITATORS : Six (6) Geolograph/Pioneer 40TD - 15" 'Pitbull' mud agitators with 15 HP, 60 Volt, 60 HZ, 3 phase electric motors.

SHALESHAKER : Two (2) DFE SCR-01 Linear motion shale shakers. Adjustable screen deck - 1^{o} to + 5^{o}.

DEGASSER : One (1) Drilco See-Flo.

DESILTER : One (1) Pioneer T12-4 'Siltmaster' desilter. 12 x 4" cones. Approximate output of 2,250 litres per minute.

DESANDER : Harrisburg DSN-1000 unit with 2 x 10" cones. Approximate output of 3,600 litres per minute.

GENERATORS : Four (4) Brown Boveri 600 Volt, 600 kw 3 phase, 60 HZ AC generators. Powered by four (4) Cat 3412 PCTA diesel engines.

B.O.P.'s : One (1) Hydril 13.5/8" x 3,000 psi spherical annular BOP, studded top and flanged bottom.
One (1) Hydril 13.5/8" x 5,000 psi flanged double gate BOP.

SPOOLS : Double studded adaptor, 4.1/2" H 13.5/8" 5000 BXI60 x 13.518" 3000 RX57.
Double studded adaptor, 4.1/2" H 13.5/8" 5000 BXI60 x 7.1/16" 5000 R46.
Double studded adaptor, 5.1/2" H 13.5/8" 5000 BXI60 x 7.1/16" 3000 R45.
BOP spacer spool (drilling spool), 17" H 13.5/8" 5000 BXI60 x 13.5/8" 5000 BXI60.
BOP spacer spool (drilling spool), 14.1/2," H 13.5/8" 3000 R57 x 13.5/8" 3000 R57.
BOP adaptor spool, 18" H 13.5/8" 5000 BXI60 x 11" 3000 R53.

ACCUMULATOR : One (1) Wagner Model 130-160 3 BND 160 gallon accumulator consisting of:-

- Sixteen (16) 11 gallon bladder type bottles.
- One (1) 20 HP electric driven triplex pump 600 volts, 60 HZ, 3 phase motor and controls.
- One (1) Wagner Model A - 60 auxiliary air pump 4.5 gals/minute.
- One (1) Wagner Model UM2SCB5S mounted hydraulic control panel with five (5) 1" stainless steel fitted selector valves and two (2) stripping controls and pressure reducing valves.
- Three (3) 4" hydraulic readout gauges:
  - one for annular pressure

- one for accumulator pressure
- one for manifold pressure

One (1) Wagner Model GMSB - 5A 5 station remote drillers control with three pressure gauges, increase and decrease control for annular pressure.

DRILL PIPE SAFETY VALVE : One (1) 4" IF inside BOP.
One (1) 4" IF Stabbing Valve.

AIR COMPRESSORS & RECEIVERS : Two (2) LeRoi Dresser Model 660A air compressor packages c/w 10 HP motors rated at 600 Volts, 60 HZ, 3 phase. Receivers each 120 gallon capacity and fitted with relief valves.

AIR WINCH : One (1) Ingersol Rand HU-40 with 5/8" wireline. Capacity 2,000 lb.

POWER TONGS : One (1) Farr 13.5/8" - 5.1/2" hydraulic casing tongs c/w hydraulic power pack and hoses and torque gauge assembly.
One (1) Farr Model LW5500 5.1/2" high torque hydraulic power tong complete w/- 3.1/2" rotating assembly.
One (1) Foster hydraulic kelly spinner with 6.5/8" LH connections.
One (1) Varco SSW-30 hydraulic spinning wench. Self adjusting 2.7/8" through to 7" OD pipe.

ROTARY TABLE : One (1) Ideco 23" rotary table shaft driven from drawworks.

MUD TANKS

(SHAKER) : One (1) Shaker tank total 236 bbls
- trip tank - 24 bbls
- sand trap - 92 bbls
- settling tank - 120 bbls

(INTERMEDIATE) : One (1) Intermediate tank total 337 bbls.
- with desilter tank - 113bbls
- with desander tank - 112bbls
- with reserve tank - 112bbls

(SUCTION) : One (1) Suction tank total 222 bbls.
- with pill tank - 23 bbls
- with two (2) suction tanks - 100 bbls each

Total system: 795 bbls

TRIP TANK PUMP : One (1) Mission Magnum 2" x 3" centrifugal pump complete with 20 HP, 600 Volts, 60 HZ, 3 phase explosion proof motors.

CHOKE MANIFOLD : One (1) Choke manifold, complete with Cameron type 'FL' 3" 5000 psi valves and Hydraulic Swaco "super" choke.

DRILL PIPE	:	2,280m - 4.1/2" OD 16.60 lb/ft Grade "G" drill pipe. 465m - 4.1/2" OD 16.60 lb/ft Grade "E" drill pipe. 2,500m - 3.1/2" OD 13.30 lb/ft Grade "G" drill pipe.
PUP JOINTS	:	One (1) - 5' 4.1/2" OD Grade 'G'. One (1) - 5' 3.1/2" OD Grade 'G'. One (1) - 10' 4.1/2" OD Grade 'G'. One (1) - 10' 3.1/2" OD Grade 'G'. One (1) - 15' 4.1/2" OD Grade 'G'.
HEVI-WATE DRILL PIPE	:	142m (15 jts) of 4.1/2" H.W.D.P. 142m (15 jts) of 3.1/2" H.W.D.P.
DRILL COLLARS	:	60m - 8" OD drill collars 230m - 6.1/4" OD drill collars 285m - 4.3/4" OD drill collars
KELLY	:	One (1) Square Kelly drive 4.1/4" x 40' complete with Scabbard - 4" IF pin connection. One (1) Hex Kelly drive 3.1/2" x 40' complete with Scabbard. 3.1/2" IF pin connection.
KELLY DRIVE	:	One (1) 20 HDP Varco kelly drive bushing to suit 4.1/4" square kelly and changeable rollers to suit 3.1/2" Hex Kelly.
KELLY COCK (UPPER)	:	One (1) Griffith Upper Kelly Cock 7.3/4" with 6.5/8" API connections.
KELLY COCK (LOWER)	:	One (1) Griffith Lower Kelly Cock 6.1/2" OD with 4" IF connections. One (1) Griffith Lower Kelly Cock 4.3/4" OD with 3.1/2," IF connections.
FISHING TOOLS	:	One (1) only 10.5/8" Bowen series 150 FS overshot c/w grapples md packoffs to fish Contractors downhole equipment. One (1) only 8.1/8" Bowen series 150 FS overshot c/w grapples and packoffs to fish Contractors downhole equipment. One (1) only 5.3/4" Bowen series 150 FS overshot c/w grapples & packoffs to fish Contractors downhole equipment. One (l) only 8" OD fishing magnet 4.1/2" reg pin. One (l) only Reverse circulating junk basket 4" IF box. One (1) only Fishing Jar 6.1/2" OD 4" IF pin & box. One (1) only Fishing Jar 4.3/4" OD 3.1/2" IF pin & box. One (1) only 12" Junk Mill - 6.5/8" reg pin. One (1) only 8" Junk Mill - **4.Y2"** reg pin
SUBSTITUTES	:	Two (2) Bit Subs - 6.5/8" reg double box. Two (2) Bit Subs - 4.1/2" reg x 4" IF double box. Two (2) Bit Subs - 3.1/2" reg x 3.1/2" IF double box. One (1) XO Sub - 7.5/8" reg x 6.5/8" reg double box. One (1) XO Sub - 4" IF box x 4.1/2" IF pin. One (1) XO Sub - 3.1/2" IF box x 4" IF pin.

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Two (2) XO Sub - 6.5/8" reg pin x 4" IF box.
One (1) Junk Sub - 6.5/8" reg pin x 6.5/8" reg box.
Two (2) Kelly Saver Subs 4" IF pin & box.
One (1) Kelly Saver Subs 3.1/2" IF pin & box.
Two (2) Circulating Subs - 4" IF x 2" 1502 hammer union.
One (1) 6.5/8" reg. x 4.1/2" IF double box.
One (1) 4" IF Box x 4" FH pin.
Two (2) 4" IF Box x 4.1/2" IF pin.
Two (2) 4" IF x 4.1/2" IF double box
Two (2) 4.1/2" IF Box x 4" IF pin.
One (1) 3.1/2" IF Pin x 4.1/2" IF box.
One (1) 2.7/8" Pin x 2.3/8" IF pin.
One (1) 3.1/2" IF x 2.7/8" IF pin.

HANDLING TOOLS :

1 only 13.3/8" Baash Ross 150 ton side door elevator.
1 only 13.3/8" single joint P.U. elevators.
1 only 9.5/8" Webb Wilson 150 ton side door elevators.
1 only 9.5/8 single joint P.U. elevator.
1 only 7" BJ 200 ton side door elevators.
1 only 7" single joint P.U. elevators.
1 only 5./2" BJ 200 ton side door elevator
1 only 3.1/2" BJ 150 ton 18 degree taper D/P elevators.
2·only 4.1/2" BJ 250 ton 18 degree taper D/P elevators.
1·only 3.1/2" 100 ton tubing elevator.
1·only 2.7/8" 100 ton tubing elevator.
1 only 2.3/8" - 3.1/2" YT slip type tubing elevator.
1 only 8" Webb Wilson 150 ton single door elevator D/C.
1 only 6.1/2" Webb Wilson 150 ton single door elevator D/C.
1 only 13.3/8" Varco CMS-XL casing slips.
1 only 9.5/8" Varco CMS-XL casing slips.
1 only 7" Varco CMS-XL casing slips.
1 only 5.1/2" Varco SDXL casing slips.
2·only 4.1/2" Varco SDXL D/P slips.
1·only 3.1/2" Varco SDML tubing slips.
1·only 2.7/8" Varco SDML tubing slips.
2·only 8" - 6.1/2" DCS-R drill collar slips.
2·only 3.1/2" Varco type SDML DP slips.
2·only 4.3/4" DCS drill collar slips.

ROTARY TONG : One set Web Wilson type 'AAX' c/w latch & lug jaws 13.3/8" - 3.1/2".

BIT BREAKERS : One (1) each 17.1/2", 12.1/4", 8.1/2", 6".

FUEL TANK :

1 only 25,000 litres.
1 only 30,000 litres.

WATERTANK : 1 only 400 bbls.

DRILLING RATE RECORDER :

1 only 6 pen drill sentry recorder to record:

- weight (D)
- penetration (feet)
- pump pressure (0-6,000 psi)

- electric rotary torque
- rotary speed (rpm)
- pump spm (with selector switch)

DEVIATION INSTRUMENT : 1 set Totco 'Double Shot' deviation instrument 0^{o}-8^{o}.

INSTRUMENTS & INDICATORS :
1 only Martin Deck Type 'D' weight gauge.
1 only National Type 'D 'dead man anchor.
- Electric rotary torque gauge
- Pit scan
- SPM gauge (2 per console)
- Rotary rpm gauge

MUD TESTING : 1 set Baroid mud testing laboratory (standard kit).

RATHOLE DRILLER : One (1) fabricated rotary table chain driven.

WATER PUMPS : Three (3) Mission Magnum 2" x 3" centrifugal pumps c/w 20 HP, 600 Volts, 60 HZ, 3 phase explosion proof motors.

CUP TESTER : One (1) Grey Cup Tester c/w test cups for 9.5/8" & 133/8".

DRILLING LINE : 5,000' 1.1/8" - E.I.P.S.

TRANSPORT EQUIPMENT AND MOTOR VEHICLES

1 - International 530 Forklift

1 Tray Top Utility - 4WD
1 Crew Wagon - 8 perso

CAMP EQUIPMENT

4 - 8 - Man Bunkhouses
1 - Recreation/Canteen unit
1 - Ablution/Laundry/Freezer unit
1 - Kitchen/Cooler/Diner unit
2 - Toolpusher units
1 - Combined Water/Fuel Tank unit
2 - CAT 3304PC generator sets each 106 Kva, 86 KW, 50 HZ.

Note: **At Contractor's discretion any of the foregoing items may be replaced by equipment of equivalent or greater capacity.**

SAFETY EQUIPMENT

General Safety Equipment to be provided By the drilling Contractor

Wet weather gear Safety glasses Safety hats Safety footwear Safety belts c/wlines Ear protection -grade 4 Leather gloves Rubber gloves Rubber aprons Fullface visors Eye shields (for grinding machines, etc)	Sufficient personal protective equipment will be available at all times. All equipment will comply with International standards.
Dust masks Rubber gloves - elbow length for chemical handling "No-Smoking" signs "Hard-Hat" signs	Pictographic signs will be displayed in prominent locations around the Rig giving wanting to a specific hazard.
Eye Wash Stations	
Quantity	3
Make/model	1 x Enware eye wash Deluge shower. 2 x Protector eye wash station
Located at	Intermediate tank Dog House Mud Hopper
Derrick Safety Equipment	
Derrick escape (Geronimo)	Geronimo
Derrick safety belts	Lewis Type SC
Derrick Climbing Assist	
Make	R.T.C.
Fire Extinguishers	
Make	
Type: 1. Dry Chemical	Quell or equivalent
2. Other	10 x 9kg 2 x 11.5 BCF

First Aid Equipment

First Aid Kits	
Quantity	2
Located at office	Dog House, Toolpushers Office
Bum Kits/Fire Blankets	
Quantity	2 - H2O GEL blanket
Located at office	Toolpushers office (1), Dog House (1)
Stretchers	
Quantity	2
Type	1 MSA Stokes 1 MSA Stokes Fold canvas
Located at	Dog House/Offices

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CULTUS

Cultus Petroleum (Australia) NL
(ACN 009 243 383)
Level 4, 828 Pacific Hwy
Gordon NSW 2072
Tel: (02) 418 1522
Fax: (02) 418 1504

13 December 1996

Warrnambool Police
7 Gillies Street
WARRNAMBOOL VIC 3280

Attention: The Officer in Charge

Dear Sir/Madam,

Cultus Petroleum NL are anticipating to commence drilling operations in the Koroit area in mid January 1997.

As a precautionary measure we are advising all emergency services just in case their services may be required.

We enclose a map of the drilling location to allow you quick access in the event that we may require your services.

If you require further information please contact myself in the first instance or Chris Way on (02) 9418 1522.

yours faithfully,

GRAHAM BRUMBY
Purchasing & Logistics Superintendent

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Basin Oil NL

A.C.N. 000 628 017

Compensation Agreement
Petroleum Act 1958 ("The Act") Section 36(2)(a)

PROPERTY : LOT 4 SECTION 8
PARISH PAARATTE

TO : RJ & PA MASLIN

("the Owner")

Basin Oil NL (A.C.N. 000 628 017) of Level 4, 828 Pacific Highway, Gordon, NSW ("Basin") is a holder and the operator of Petroleum Production Lease No. 1 ("the Lease") which includes within its boundaries the land which you own or occupy.

The Lease allows Basin to enter on land within the boundaries of the Lease area and to carry out certain petroleum exploration, appraisal and development operations. The Act provides that Basin must first make satisfactory arrangements with the owners of the land to pay compensation pursuant to the Act.

Basin expects to carry out petroleum operations on that part of your land shown on the attached sketch plan Appendix "A" (the "Drill Site Area" ~~and the "Camp Site Area~~") hereto, and acknowledges that during these operations, and for a period thereafter, there will be a disturbance to you/and or your property.

For the purpose of this Compensation Agreement, Basin shall rent the Drill Site Area ~~and the Camp Site Area~~ of your land on which the petroleum and associated operations will be conducted, sufficient for the efficient conduct of those operations. This combined area is estimated to be 1.5 hectares.

BASIN HEREBY offers the following compensation and terms for agreement:

1. This agreement is effective from 24TH DECEMBER 1996 ("effective date").

2. On the signing of this Agreement Basin shall pay a rental (including all direct losses and costs) of A$.4500.... per annum which will entitle Basin to occupy and use the Drill Site Area for a period of 12 months from the effective date.

3. ~~On the signing of this Agreement Basin shall pay a rental (including all direct losses and costs) of A$..... per annum which will entitle Basin to occupy and use the Camp Site Area for a period of 12 months from the effective date.~~

4. Basin may at its option renew this Agreement at the rental rate referred to in paragraph 2 for a further period of up to 12 months if such time is required by Basin.

5. If the well drilled on the Drill Site Area fails to encounter potentially commercial hydrocarbons, the Drill Site Area ~~and the Camp Site Area~~ shall be restored as near as possible to its original condition as soon as practicable.

6. If the well drilled on the Drill Site Area is successful in encountering potentially commercial hydrocarbons, then the parties hereto will meet to negotiate in good faith, a further agreement, and until such further agreement is executed, the terms of paragraph 2 herein shall continue in full force, ~~and effect and the Camp Site Area shall be restored as near as possible to its original condition as soon as practicable.~~

7. It is agreed that the consideration referred to in paragraphs 2 ~~and 3~~ will fully compensate you for any loss incurred through the inability to make use of the Drill Site Area ~~and the Camp Site Area~~ during the term of this Agreement.

8. Further compensation is initially assessed as nil, however if Basin:-

   8.1 Fails to take proper precautions to prevent unauthorised interference with the normal use of the remainder of your property, or

   8.2 Causes any serious pollution to your property, or

   8.3 Otherwise allows its servants, workmen, agents or contractors to act in an unsatisfactory manner that causes unreasonable loss, or

   8.4 During petroleum operations, causes any other loss or damage to the property, its occupants or stock

   then, for each and any case, Basin will agree with you the amount of compensation payable to you or, in the absence of agreement, will join with you in seeking an assessment by a Magistrate's Court as specified in Section 36(2)(a) of the Act.

9. Any reference herein to Basin (or the appropriate Lease holder) shall be regarded and accepted by the parties hereto as referring to and being binding upon any other party or parties associated with Basin (or the appropriate Lease holder) pursuant to any Joint Operating Agreement (hereinafter referred to as "JOA") between Basin and such other party or parties which JOA is current or entered into during the period to which this agreement applies.

Yours faithfully,

S. Russotti
Company Secretary
Basin Oil NL

Execution and Attestation

We, R J & P A MASLIN being the owner of the said property agree to accept the clauses and considerations as set out in the above Agreement.

Signed R J Maslin Witness : G Brumby Date: 24/12/96

Signed : ..... Witness : ..... Date: 24/12/96

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CULTUS

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Cultus Petroleum (Australia) NL
(ACN 009 243 383)
Level 4, 828 Pacific Hwy
Gordon NSW 2072
Tel: (02) 418 1522
Fax: (02) 418 1504

13 December 1996

South West Victoria Ambulance Service
188 Koroit Street
WARRNAMBOOL VIC 3280

Attention: The Officer in Charge

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yours faithfully,

GRAHAM BRUMBY
Purchasing & Logistics Superintendent