

MOS2005 2D SEISMIC SURVEY

BAINBILLA AND MYALL BLOCKS, ATP 471P

SOUTHEAST QUEENSLAND

FIELD OPERATIONS REPORT

Prepared for Mosaic Oil NL



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Report No. 193/001

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1.0 INTRODUCTION

1.1 GENERAL

Mosaic Oil NL contracted Velseis Pty Ltd of Brisbane to carry out a 2D infill seismic programme within the Bainbilla and Myall blocks of ATP 471P, southeast of the township of Surat, in southeast Queensland.

The programme consisted of approximately 78 line kilometres and was intended to resolve geological stratigraphy and structure relevant to future oil and gas production.

The survey was recorded using dynamite as the energy source, with 1.2kg (3x400g) charges being loaded in each shot hole.

A Velseis 240 channel telemetry recording system was used to acquire the data set.

The contract was administered by Barry Smith of Mosaic Oil NL, with on-site representation carried out by John Saunders of IEGC.

Shot hole drilling was carried out by Seisdrill, a division of Velseis Pty Ltd .

Field activities commenced on 1st December 2005 and were completed on February 11th 2006.

Zero lost time or disabling (restricted work) injury was experienced for the duration of the project.

1.2 LOCATION AND ACCESS

The Bainbilla-Myall block 2D Seismic Survey (MOS2005) was located approximately 25km southeast of the township of Surat in southeast Queensland.

Access to the lines was via the Thomby, Silver Springs and Parknook Roads to the six southern lines and via the Surat Developmental or Glenmorgan Road to the three northern lines.

1.3 TERRAIN / WEATHER

Site topography was predominantly flat open crop country to the south with some cattle grazing properties to the north.

The commencement of field activities in December coincided with the onset of the Queensland summer. Predictably, high temperatures and threatening thunderstorms were a feature of the survey, wet weather forcing the drill crews to demobilise after one week's drilling in December. Fortunately, although some extreme temperatures were experienced, the season was relatively dry and little time was lost to wet weather standby.

1.4 LOGISTICS

1.4.1 ACCOMODATION

Accommodation and messing was provided at the Surat Hotel as well as the Surat Caravan Park.

The travel time from Surat to the work areas was approximately 20 minutes.

1.4.2 COMMUNICATIONS

Field communications for all phases of the project were either through UHF (vehicle mounted or hand held) radios, using Channel 26 or VHF (vehicle mounted or hand held) radios using Velseis' discrete frequencies.

Mobile phone coverage was acceptable using CDMA in most parts of the work area.

Communications between the crew and Brisbane office could be established via mobile phone/e-mail facilities at the Velseis Field Office.

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2.0 DRILLING OPERATIONS

2.1 GENERAL

Shot hole drilling was carried out by two Bourne 1000R rotary rigs supplied by Seisdrill of Toowoomba, a division of Velseis Pty Ltd.

Drilling statistics for the rigs were as follows:

A total of 808 holes were drilled and loaded for a total of 27,438 metres.

The average hole depth was 34 metres. Holes were drilled 3-4 metres into sub-weathering as marked by the 'blue shale' weathered sandstone found throughout the area.

Drilling conditions were fairly predictable, due to the experience gained from previous seismic surveys in the area.

The drill crews mobilised to site on 1st December 2005, and completed the programme on 17th January 2006.

3.0 PRE-LOADING OPERATIONS

3.1 GENERAL

Two preloading crews were used, each consisting of a licensed shot firer. The crews were equipped with vehicles fitted with approved explosive magazines, tools and associated testing equipment suitable for daily work requirements. Explosives were stored in Velseis magazines situated at the Surat magazine compound.

The senior preloader was also the designated magazine-keeper and as such was responsible for entry to the magazines, allocation of stocks and maintaining statutory records.

Both preloaders possessed current Qld shot firer's licences.

Each hole was loaded with 3 x UEE 400g boosters coupled to a seismic electric detonator manufactured by Davy-Bickford. (2 x 500g Pentaseis boosters were used on the southern lines in an attempt to better waterproof the charge).

The placement depth of the charge was carefully measured, the electric circuit checked and the hole back-filled with approx. 4 metres of drill cuttings.

The detonator leads were then secured to a plastic 'octoplug' hole cap and placed into the top of the hole.

4.0 RECORDING OPERATIONS

4.1 GENERAL

Mobilisation of the recording crew took place on the 25th of January 2006, with recording commencing on the 26th January, following an induction by the client representative, John Saunders.

The programme was initially to be recorded using a rental Sercel 408 telemetry system. Due to other commitments, this system was unavailable at the time of recording. The Velcom 368 system was used and although capable, was not ideal, as system limitations made for inefficiencies in field logistics.

The programme was divided geographically into two areas. It was decided to commence recording on the six southern lines as this area was all under crop and there was some concern that the farmers would plant the paddocks after the onset of the summer rains. The three lines to the north were mostly cattle properties, so less of a concern.

4.2 SPREAD GEOMETRY

Recording parameters were developed with due regard to both geological targets and cost. A nominal common depth point coverage of 24 fold was required. The spread was symmetrical about the shot. For each shot, 240 live channels were recorded comprising two lines of 120 channels back and forward of the recorder.

4.3 RECORDING PARAMETERS

4.3.1 SPREAD PARAMETERS

Survey Grid Design	2D Dynamite
C.D.P. coverage (fold)	15 fold (nominal)
No of Live Channels	240
Recording Patch	2 Rx Lines x 120 Traces/Line configured end to end as one line
Minimum Offset	6.25m
Maximum Offset	1493.75m
Receiver Point Interval	12.5m

4.3.2 INSTRUMENT PARAMETERS

Number of channels recorded		240			
Auxiliary channel 1		Confirmation Time Break			
Auxiliary channel 2		Radio Up-hole			
Sample rate		2.0 ms			
Record length		3.0 sec.			
Pre amplifier gain		42 dB			
Filters	High cut (anti-alias)	155 Hz	slope	72 dB/oct	
	Low cut	16 Hz	slope	12 dB/oct	
Archive		Velseis Disk format to twin hard drives and SEG Y to CD ROM			

4.3.3 SOURCE PARAMETERS

Shot point interval	100m
Charge size	3 x 400g UEE Booster (or 2 x 500g Pentaseis Booster wired to Daveydet seismic electric detonator)
Charge Depth	34m (nominal)
Total number of Shot Points	808

4.3.4 RECEIVER PARAMETERS

Geophone group interval	15 metres
Geophone stringing array	6 elements in series per string, no damping resistor (open coil damping results in 70% damping factor)
Geophone array layout	Equi-spaced in line, over 15m, centred on peg
Geophone array centre	On stations
Geophone element type	Sensor SM4/7, 30Hz, 220 ohm.

5.0 HEALTH, SAFETY AND ENVIRONMENT

5.1 SAFETY INDUCTION

Prior to commencement of the seismic survey, representatives from Mosaic NL and Velseis P/L conducted a risk assessment on the forthcoming programme. Hazards specific to the job were identified, where necessary, further controls were proposed and responsibility for implementation allocated.

Daily toolbox meetings were held at the Surat Hotel immediately after breakfast. These typically ran for 15 to 30 minutes and provided a venue where operational and safety topics could be discussed. Velseis Fit for Work procedures were also administered at this time, including random breath testing.

5.2 SAFETY STATISTICS

A total of 3,254 man hours were worked for the duration of the programme without a restricted work or lost time injury. One employee suffered symptoms relating to heat stress early in the recording phase, but after a system of job rotation was introduced which limited an individuals exposure to the more physical tasks, no further difficulties were experienced.

6.0 APPENDICES

APPENDIX A: KEY PERSONNEL

SUPERVISION

POSITION	NAME	COMPANY
Crew Manager	Tim Beale	Velseis P/L
Client Representative	John Saunders	Mosaic Oil NL

RECORDING CREW

POSITION	NAME	COMPANY
Observer	Jason Parker	Velseis P/L
Line Supervisor	Dave Lester	Velseis P/L
Shot-Firer	Des Cronin	Velseis P/L

DRILL CREW

POSITION	NAME	COMPANY
Driller	Owen Southwood	Seisdrill
Driller	Clyde Kajewski	Seisdrill

PRELOAD CREW

POSITION	NAME	COMPANY
Preloader/ Magazine Keeper	Mick Howard	Velseis P/L
Preloader	Des Cronin	Velseis P/L

APPENDIX B: EQUIPMENT AND VEHICLES

RECORDING EQUIPMENT

1	Velseis 'VELCOM' 368 Telemetry Recording System (500 Station Units + 500 Cables + 500 Geophone Strings)
2	Yamaha CD writers
1	Xerox Laser Printer
3	Macha Radio shooting systems
12	25 watt VHF Radios TAIT Model T-2010 vehicle mounts
6	5 watt hand held VHF radios model Icom F-3

MISCELLANEOUS EQUIPMENT

- Spares kit for recording system
- Vehicle service tool kits
- First aid kits
- Fire extinguishers
- Mobile and Satellite phones

VEHICLES

Crew Manager	1	4x4 Toyota Landcruiser Station Wagon
Recording Vehicle	1	Custom designed Recording Trailer with air conditioned cabin
Crew Transport	2	4x4 Toyota Landcruiser Troop-Carriers
Spread Checkers	2	4x4 Toyota Landcruiser Tray Back
Cables/ Geophones	2	4x4 Mitsubishi Canter 3 tonne
Equipment Transport	1	Hino Crane Truck 8 tonne
Shotfirer	1	4x4 Toyota Landcruiser Tray Back
Drill	2	Bourne 1000R mounted on Ford Louisville, Leroi 125/500 on-board compressor
Water Truck	2	Ford Louisville Trucks with water and fuel tanks
Drill Crew Support	1	Holden Rodeo Twin-Cab 4x4
	1	4x4 Toyota Landcruiser Tray Back
Preloaders	2	4x4 Toyota Landcruiser fitted with licensed explosive magazines