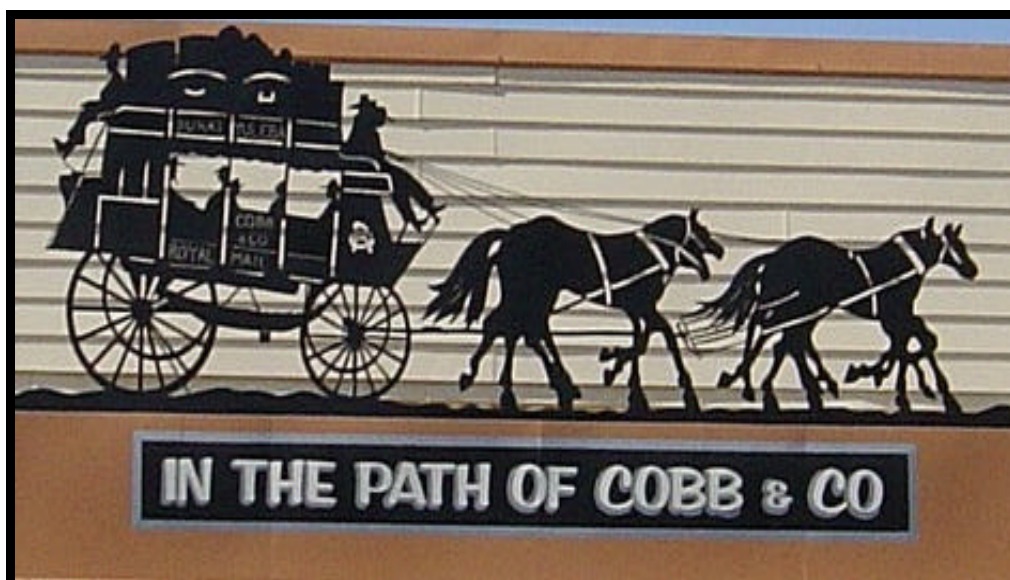


## **MOS2005 SEISMIC SURVEY**



## **FINAL REPORT**

**Written and compiled by J. Saunders (IGEC Pty Ltd)**

**MAY 2006**

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## **I      INTRODUCTION**

## INTRODUCTION

The areas known as the Bainbilla and Myall blocks in ATP471P are considered to have significant oil and gas potential. The potential of the license was last reassessed by reprocessing various vintages of older surveys earlier in 2005. The MOS2005 Seismic Survey, the subject of this report provides an infill grid.

The major requirement was to obtain high temporal and spatial resolution data at an average depth of about 2500 meters. Based upon results obtained in previous seismic surveys it was decided to use an explosive source, considered to be considerably superior to Vibroseis acquired data.

Mosaic Oil NL contracted Velseis Pty Ltd of Brisbane and Seisdrill Pty Ltd of Toowoomba (a wholly owned subsidiary of Velseis) to acquire 9 seismic lines totalling about 78 kilometres, as shown on the following map. (The original program comprised 80 kms, but due to the onset of bad weather towards the end of the recording operation 2 kms were abandoned – see below).

As shown on the map parts of several lines ingressed into Origin Energy acreage ATP 470P. The agency agreement between Mosaic and Origin is shown in Appendix 2 – Documentation.

Surveying services were provided by Dynamic Satellite Surveys Pty Ltd of Yeppoon under contract to Mosaic.

Line clearing services were provided by Aztex Pty Ltd of Roma under contract to Mosaic.

Operations began in mid December 2005 and were completed by early February 2006. The drills lost time due to wet weather, requiring their demobilisation to Toowoomba. Drilling recommenced after the Christmas, New Year holidays. The recording crew lost some time due an extremely severe storm in January. Because of predicted bad weather towards to end of the survey, 2 kilometres of the one remaining line was abandoned.

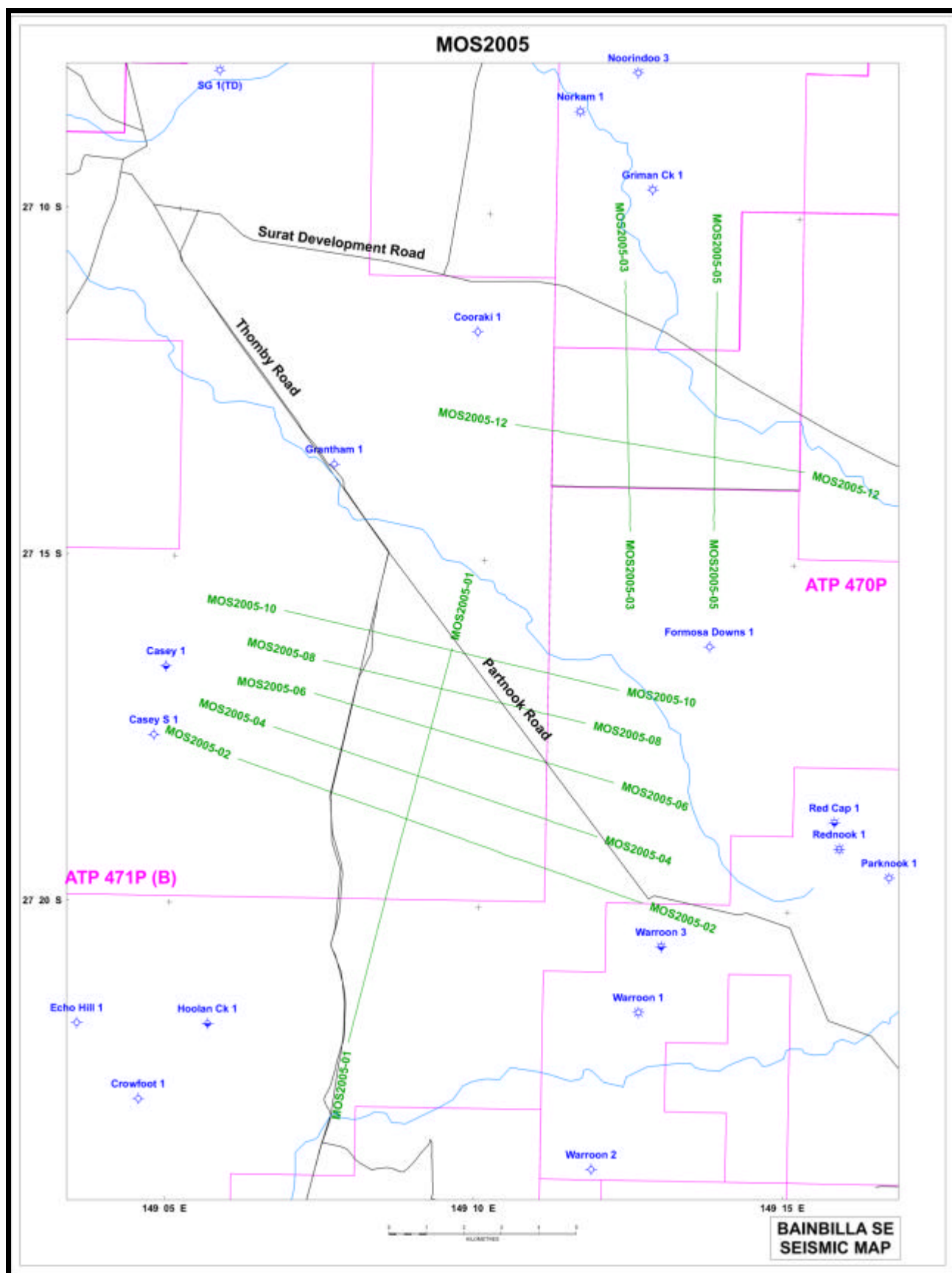
Apart from a few scattered Tertiary ridges the vast majority of the survey was in mildly undulating country, which is extensively farmed with crop and cattle.

The base of operations was in the township of Surat.

Operationally the survey was a success. Data quality was generally good to very good.

Data processing was carried out by Velpro Pty Ltd of Brisbane.

Project management was provided by IGEC Pty Ltd of Sydney.



The seismic program as acquired is shown (approx 78 kms)

## **II      PERMIT**

## **PERMIT**

All landholders/owners were permitted for seismic operations.

Permitting was carried out by B. Smith (Mosaic) and J. Saunders (IGEC). The latter also maintained contact with the landholders/owners through out the survey. Operational constraints were discussed with them and their needs and requirements were agreed before operations began.

It was also agreed with those properties affected that compensation would be paid for any loss of crop based on the agreed area of damage, the expected yield in that area, and the market price at harvest.

There were no significant permitting problems and access permission was obtained for all properties.

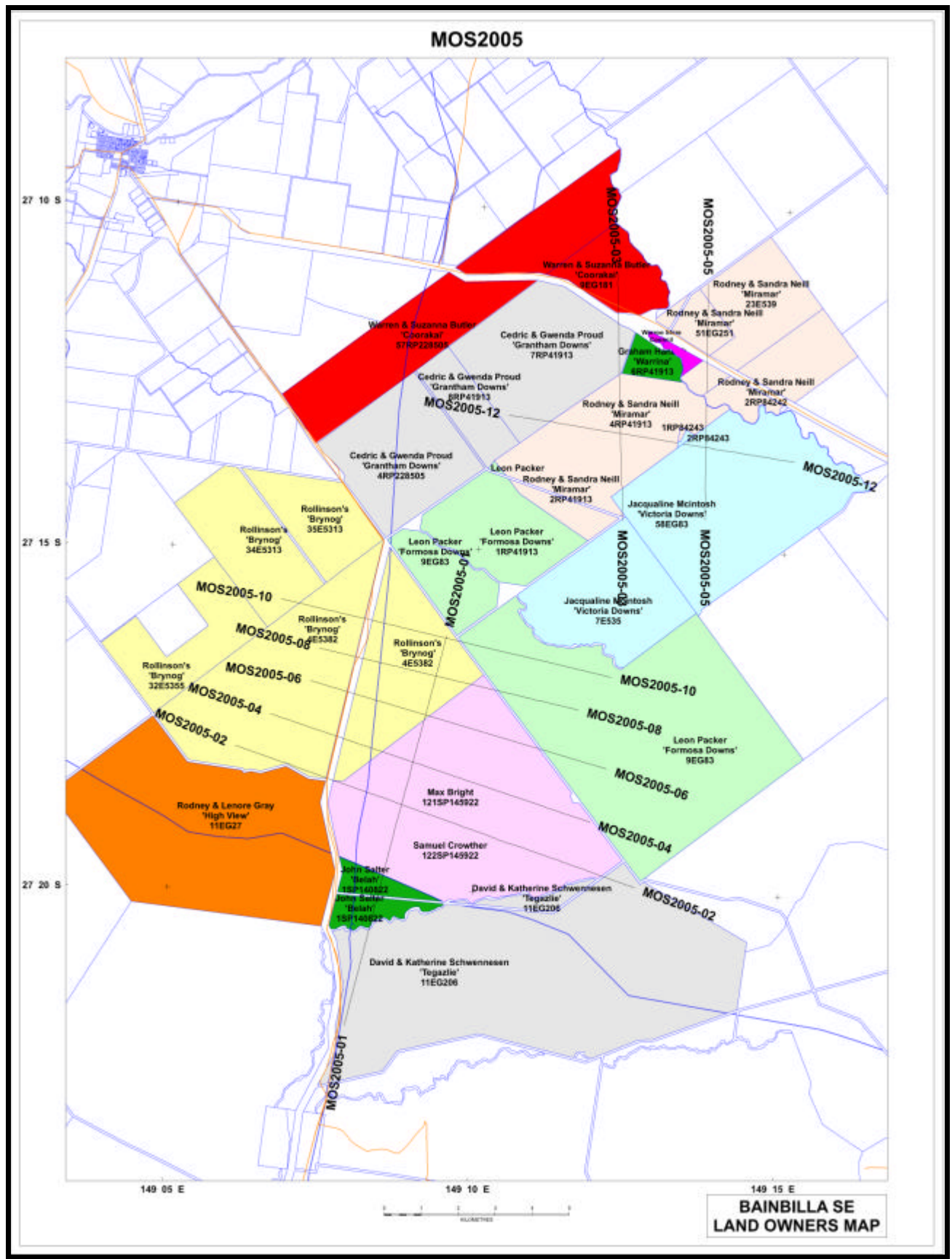
A cultural heritage survey was carried out during August 2005 involving representatives from the local indigenous community. There were no objections from the traditional landholders that could have affected the proposed operations. A separate report has been submitted.

Copies of the documentation provided to each landowner are shown in Appendix 2 - Documentation.

In addition all contractor personnel were issued with a Form G entry permission as shown in Appendix 2 - Documentation, for the purpose of identification if required by the landowner.

The map shows the position of each of the lines and the affected landowners.

Line MOS2005-1 crossed Origin Energy's Kincora gas pipeline. The positions of the shot holes relative to the pipeline were inspected and approved by a representative of Origin Energy prior to drilling.





### **III      SURVEY AND LINE CLEARING**

## **SURVEY AND LINE CLEARING**

Programmed line positions were set out using the GPS system. GPS base stations were set up at various locations as required.

A D7 Caterpillar Dozer equipped with a stick rake and a Tractor towed slasher was used for line clearing. Apart from the occasional creek crossing and in the areas of ridgelines, little clearing was required. In any case no large stands of trees were cleared and as much rootstock as possible was left in place. In many areas all that was required was to walk the dozer through the paddocks. No heavy machinery was used in areas under cultivation, and where possible existing creek crossings were used. Temporary “Bowden” gates were inserted in fence lines unless an existing gate was within a reasonable distance of the line.

Line pointing, and shot point chaining was simultaneously carried out. The dozer was fitted with a GPS tracking device, programmed and maintained by the surveyors.

Line clearing was completed in about 2 weeks

Station chaining and surveying was completed by mid-January.

Lines were marked using wooden numbered stakes at shot point and geophone positions. Because of delays during drilling and between the completion of drilling and the beginning of recording several lines experienced damage from livestock and weather, with the total loss of many of the pegs. The surveyor was recalled to re-chain and re-mark damaged line segments.

Permanent markers were placed at line ends, line intersections and/or on fence lines.

The following chart shows line endpoints.

The surveyors also provided “mud maps for the drilling and recording crews and signposted the lines at road crossings.

Listings of all station points and line intersections are given in an appendix to this report, together with a survey report and copies of the “mud maps”.



Line MOS2005 – 8 (Cultivation) looking west



Line MOS2005 –5 (Pasture) looking south

Examples of cleared lines after clearing and survey

## LINE END POINTS AND SURVEY REFERENCES

LINE NAME	START E	START N	STOP E	STOP N	DIST. KMS
MOS2005-1	713856	6982397	710889	6971169	11.6250
MOS2005-2	707949	6978737	718733	6974891	11.4500
MOS2005-3	718280	6991480	718406	6984794	6.6875
MOS2005-4	708899	6979588	717527	6976657	9.1125
MOS2005-5	720729	6991173	720641	6984811	6.3625
MOS2005-6	709984	6980479	717974	6978097	8.3375
MOS2005-8	710227	6981360	717216	6979685	7.1875
MOS2005-10	709193	6980564	718106	6980564	9.1625
MOS2005-12	715351	6987640	723059	698363	7.8125

## MAP PROJECTIONS FOR MGA94

PROJECTION	UTM ZONE 55
CENTRAL MERIDIAN	147 DEG E
SCALE FACTOR AT CM	0.9996
FALSE EASTING	500 000
FALSE NORTHING	10 000 000
LATITUDE OF ORIGIN	0 DEGREES
DATUM	GDA94
SPHEROID	ANS

## **IV      DRILLING**

## **DRILLING**

Shot hole drilling was carried out using 2 Bourne 1000 rigs with 2 water trucks and associated crew vehicles.

Drilling began on 8 December 2005. Apart from the downtime due to wet weather during much of December and over the Christmas, New Year Period the operations proceeded efficiently. A diary of the drilling operations is shown in the accompanying chart. Of the 808 holes drilled approximately 3 failed to intersect the grey shale, these latter being mainly on the ridges. The drillers were required to drill 4 meters into the shale, where the explosive charge was placed. Cuttings samples were also required at every hole, for inspection, to ensure that the correct depth had been reached. The average depth was about 33 metres, the deepest holes were on the ridge areas. Drilling was completed on 17 January 2006. The average number of holes per day per rig was about 38.

All of the holes were drilled with air.

Once loaded with 1 kg of high speed explosive the holes were tamped with at least 4 metres of shale cuttings and capped with a plastic cover. The depth was marked on the cover.

The drilling crews were divided into 2 groups, supported by two, one man preloading crews Explosives were stored in licensed magazines installed in a secure fenced compound on Council property in Surat.

Safety (toolbox) meetings were held every morning prior to commencing work.

# MOS2005 2D SEISMIC SURVEY - SUMMARY - CLEAR/SURVEY/DRILL

No. shot holes to be drilled = 808										No. lines = 9	No. of kms = 80
DAY	DATE	NO. RIGS	HOLES	AV/DEP	LINE	DR. HRS	STDBY	MOSAIC	COMMENTS		
	31 Oct -9Nov 29-Nov-05 30-Nov-05							4	7 days clear / 8 days survey shot locations		
								1	Check access		
1	1-Dec-05	T	6	25.00	5	4.30	1.00	1	1 rig mobilise/washdown/induction/begin drill early pm. Preloader mobilise/washdown late pm		
2	2-Dec-05	F	13	24.00	5	6.25	3.75	1	Explosive arrives pm		
3	3-Dec-05	S	34	21.70	5	10.75		1			
4	4-Dec-05	S	34	31.70	5 & 12	20.00		1	1 rig mobilise/washdown/induction/begin drill mid am		
5	5-Dec-05	M	41	32.88	12	19.25		1	Most holes make water. "Poor" quality grey shale. Deeper holes upto 45 m try to find better shale		
6	6-Dec-05	T	39	36.00	12 & 3	21.00		1	Very hot. Maximum drill depth 36m. Shale quality improving. Additional test hole for det test		
7	7-Dec-05	W	39	25.00	3	16.00	4.00	1	Very hot. Most holes make water. Poorer quality shale.		
	8-Dec-05	T						1	Safety meeting. Finish N Prospect except for 6 holes in road reserve - to be drilled at job completion for security. Standby for lightning and rain from 2 pm. Shale quality much improved on N half of line 3		
								1	71 - 92 mms rain overnight. Access not possible.		
								1	Personnel demob to Brisbane/Toowoomba		
	3-Jan-06	T						1	Remobilise 2 x rigs / 2 x preloaders		
8	4-Jan-06	W	26	43.70	1	21.00		1	Poor drilling conditions sth end line 1. Many hole depths > 45m. Surveyor arrives late pm		
9	5-Jan-06	T	44	35.53	1 & 10	21.50		1	Drilling conditions improving in crop areas. Survey remarking faded sp pegs		
10	6-Jan-06	F	44	35.50	1 & 10	20.75		1	Velsels supervisor arrives pm. Very hot > 42 degrees. 4 holes at 60m on ridge		
11	7-Jan-06	S	50	33.82	1 & 10	20.75		1	Cooler. Good progress. All drilling in crop areas. Minimal impact		
12	8-Jan-06	S	50	34.94	1 & 10	21.50		1	A few deeper holes > 50m		
13	9-Jan-06	M	49	33.90	1 & 8 & 6	21.50		1			
14	10-Jan-06	T	48	32.54	8 & 6	21.50			Rigs withdrawn from paddocks to road in case of rain overnight		
15	11-Jan-06	W	46	35.09	8 & 6	21.50			No significant rain overnight. Clear skies am		
16	12-Jan-06	T	42	38.80	8 & 6 & 4	21.50			Ridges east end line 4, slower drilling and deeper holes.		
17	13-Jan-06	F	44	33.40	6 & 4 & 2	21.50					
18	14-Jan-06	S	50	36.16	4 & 2	21.50			A few holes lost on line 12 due stick raking. Probable redrills required		
19	15-Jan-06	S	49	36.00	4 & 2	21.50			Most holes line 12 which were stick raked are OK. Wires repaired - cover/capping repaired		
20	16-Jan-06	M	44	37.64	2	21.00					
21	17-Jan-06	T	16	33.75	2 & 3 & 5	10.50	4.00		Lines 3 & 5 6 holes in road reserve. Rig washdown. DRILLING COMPLETE		
		808				395.05	12.75	Surveyor still working on receiver pegging			
AVERAGES		38.4762		33.19							
		100.0%									





Drilling on Line 1. Note the minimal ground impact.



Cuttings samples taken every 5 metres. The grey shale is at about 25 metres in this hole.



## **V DATA RECORDING**

## DATA RECORDING

The recording specifications, a diary of data recording and a recording geometry diagram is shown in the following charts.

The recording operations were interrupted by weather. The crew maintained a good production rate, averaging about 5.5 kilometres a day. The weather throughout was extremely hot, on most days in excess of 35 degrees.

Safety (toolbox) meetings were held every morning prior to start of work.

The following is a list of the personnel, equipment and quality control standards as they applied to the recording crew:

### Personnel

#### **Project Supervision**

- 1 Party Manager.

#### **Recording**

- 1 senior Observer
- 1 licensed shooter
- 1 line foreman/checker
- 12 line labourers

#### **Support (Brisbane)**

- Manager
- Systems engineer
- Systems programmer

### Equipment

#### **Recording System**

- VELCOM 368 telemetric recording system
- 500 Line channels
- 500 Station Units
- 3 CSU's
- 500 line Cables
- 500 geophone strings each of 6 units per string; Sensor SM-7, 30hz geophones; 370Ω coils
- 2 shooting systems
- Radios and all necessary peripheral equipment

#### **Vehicles**

- 1 Mitsubishi Canter 4 x 4, 3 tonne Recording Truck with air-conditioned cab & genset
- 2 Mitsubishi Canter 4 x 4, 3 tonne Trucks
- 1 HINO 9 tonne truck
- 2 TLC 4 x 4 Utilities
- 1 TLC 4 x 4 station wagon

## **Materials and Supplies**

### **Materials and Supplies**

- Fuels and lubricants
- Recording consumables
- Fire extinguishers, first-aid kits, etc
- Mobile telephones, computers, office equipment etc
- Accommodation and meals for personnel in Surat
- Transportable explosives and detonator (day) magazines

## **Velcom 368 Recording System**

- Noise – less than 0.22 microvolts at 42 db gain
- Gain Control – IFP
- Converter – 14 bits plus sign
- IFP linearity – 0.02%
- DC offset < 0.2 microvolts
- Distortion < 0.3%
- Dynamic range – 84db

## **Data Recording**

All shot record data were recorded in the field in SEG Y format. Each line was recorded and archived on its own CD.

The following information was recorded in the SEG Y trace headers:

- Shotpoint - bytes 17-20
- Receiver stations – bytes 45-48
- Shotline – bytes 21-24

## **Quality Control**

- All line equipment and spares in full working order according to the manufacturer's specifications.
- Daily instrument tests carried out to ensure optimum performance
- Geophones upright and firmly planted
- Geophones tested prior to commencement of the survey
- Telemetry boxes tested prior to commencement of the survey
- Uphole times for all shots recorded on an auxiliary channel and in the observer logs.
- One bad trace allowed per shot. Consecutive shots may not have the same bad trace. All traces good at the start of a day, start of a line, and after a recording truck move.
- Recording in adverse weather e.g. wind only proceeds after consultation with the supervising geophysicist.
- Observer logs accurately kept, and show complete details for every record.

## Key Personnel

**Mosaic** (field) - J. Saunders

### **Velseis**

Management (Brisbane) - M Reveleigh

Manager (field) - T Beale

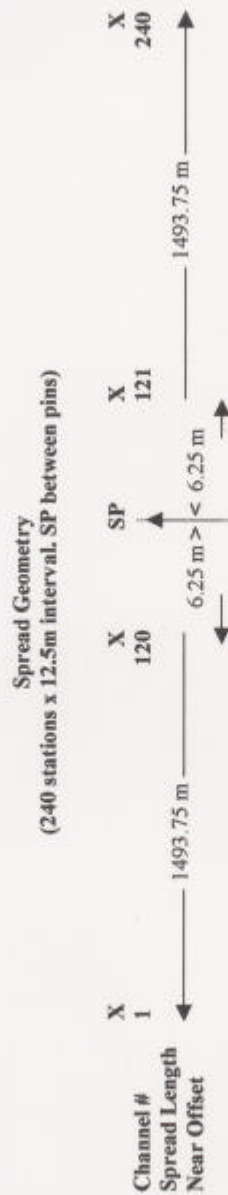
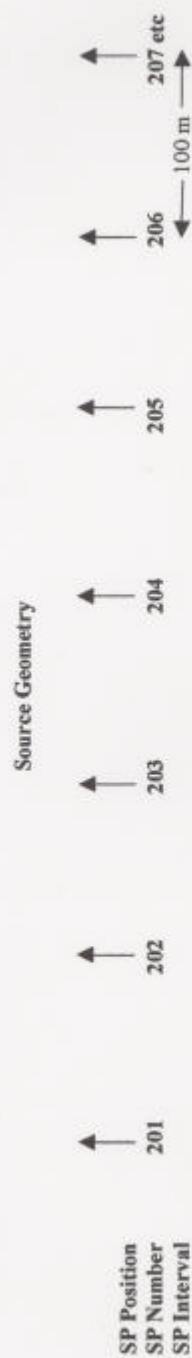
Observers - J Parker

- D Lester

MOS2005 2D SEISMIC SURVEY - SUMMARY - DATA ACQUISITION									
Shots to be recorded = 807 Kms recorded = No. of shots / 10									
DAY	DATE	DAY	No. of Shots	LINE	MX	PROD. HRS	DOWN HRS	Muscle	COMMENTS
1	24-Jan-06	T			HOT>35			1	Check lines for damage
2	25-Jan-06	W			HOT>35	4.00		1	Rec Crew arrives. Geophones pegging completed 23 Jan. Surveyor demob 24 Jan
3	26-Jan-06	T			HOT>35	4.00	8.00	1	Rec crew vehicle washdown/induction. Start Layout line 10
4	27-Jan-06	F		10	HOT>35	5.00	7.00	1	Layout line 10. Trouble shoot
5	28-Jan-06	S	24		HOT>35	10.50	2.00	1	Trouble shoot.
6	29-Jan-06	S	48	10	HOT>35	12.50			
7	30-Jan-06	M	72	10 & 8	HOT>35	10.50	1.00		
8	31-Jan-06	T	57	8 & 6	HOT>35	11.25			
9	1-Feb-06	W	79	8 & 4	HOT>35	11.00			
10	2-Feb-06	T	63	4	HOT>35	10.00	1.00	1	Dry storm overnight/few spots of rain.
11	3-Feb-06	F	65	5	HOT>35	10.50		1	Severe thunder and windstorm overnight. Little rain in Surat / 25mm on line 3. Geophone comparison done.
12	4-Feb-06	S	52	12	HOT>35	11.75	0.25	1	5 hours standby for wet ground. Complete line 3. Pickup. Storms expected tonight
13	5-Feb-06	S	58	12 & 3	HOT>35	6.00		1	Very intense storm Monday evening wind speeds >> 100kph. 25mm in Surat. Too damp to work.
14	6-Feb-06	M	37	3	HOT>35	2.00		1	Line equipment picked up. More storms expected / forecast pm Tues. Crew on standby 8 hours
15	7-Feb-06	T	0		HOT>35				Layout line 2.
16	8-Feb-06	W	83	2	HOT>30	12.00	1.00	1	Line 2 complete. Long move to south end line 1. Some cattle damage to cables. 5mm in Surat overnight
17	9-Feb-06	T	41	2 & 1	~ 30	11.00			Only access track up escarpment blocked with fallen trees due to Monday's severe storm.
18	10-Feb-06	F	58	1	~35	12.00			Program terminated due to line problems & imminent rain. Pickup equipment. 34 holes line1 not shot
19	11-Feb-06	S	38	1	~35	9.50	2.50		Load equipment and Demob crew
20	12-Feb-06	S				4.00			
TOTALS						157.50	20.25		



# Recording Geometry- MOS2005 Seismic Survey



## **Receiver Geometry** (6 elements over 12.5 m, centred on pin. No common elements between stations)



↑ : Denotes SP Locations      X : Denotes Receiver Stations      0 : Denotes Geophones

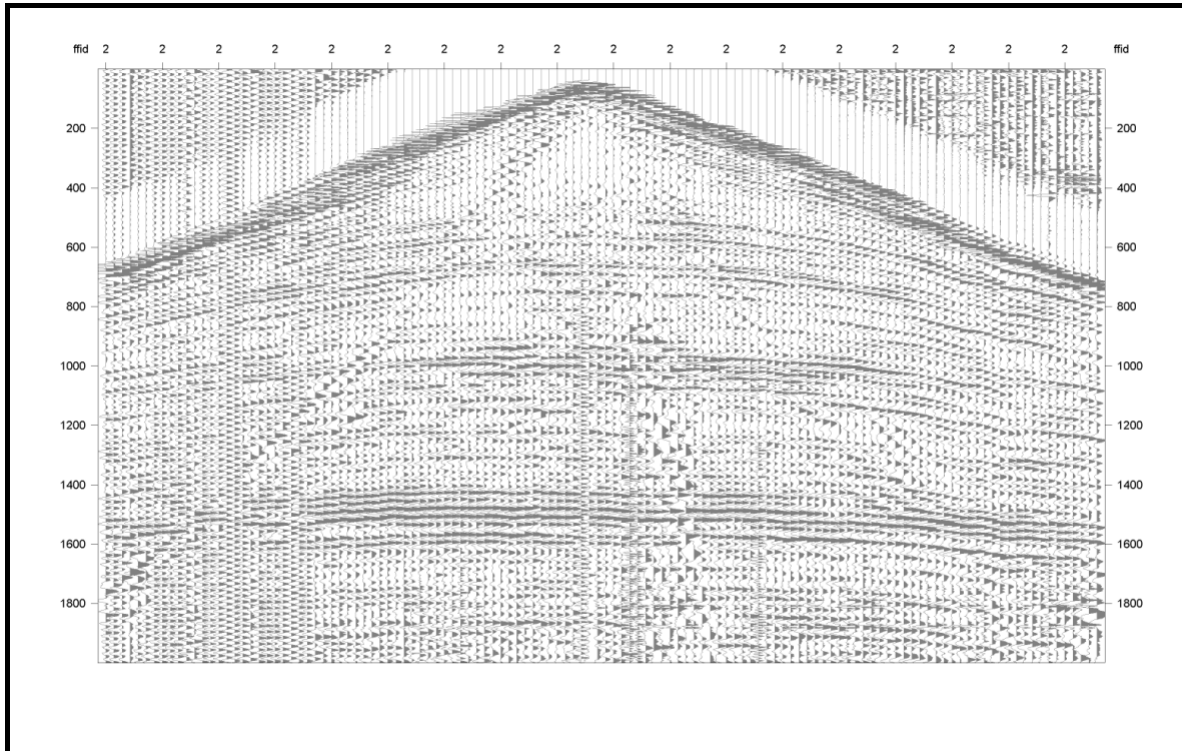
## **VI      EXPERIMENTAL**



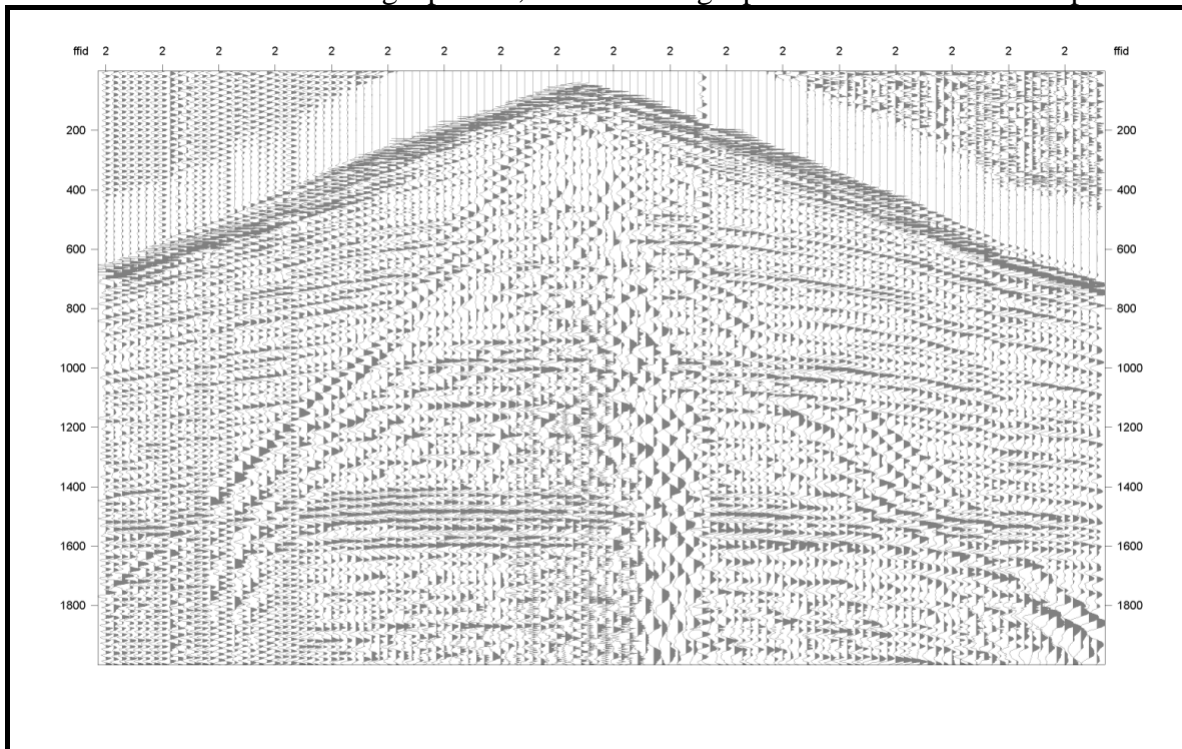
## EXPERIMENTAL

As part of Mosaic's continuing effort to investigate and improve data quality, a small experimental program was carried out.

The experiment involved simultaneously recording several shots into 2 types of geophone, 14 Hz and the 30 Hz used in production. 6 shots were recorded into geophone spreads where each alternate station was either 14 Hz or 30 Hz. The results obtained will be analysed for noise content, signal content and bandwidth. Unprocessed examples of records obtained with both types of geophone are shown below.



Shot record above 30 Hz geophones, below 14Hz geophones with same source point.



## **VII      RESTORATION AND DE-PERMIT**

## **RESTORATION AND DE-PERMIT**

Restoration was carried out at the completion of data recording. Line markers were retrieved, drill cutting mounds were dispersed or flattened, except in cultivated areas where any residual cuttings material was removed and dumped, with the permission of the landowner, in eroded creeks or other suitable areas. Temporary gates were removed and fences reinstated. All shot holes were plugged with cuttings and two hole caps. Where necessary spur drains or banks were installed on sloping ground to minimize erosion.

All landholders/owners were de-permitted with no negative feedback. A sample of the release form used is shown below.

## **VIII DATA PROCESSING**

## **DATA PROCESSING**

The data were processed by Velseis Processing Pty Ltd in their Brisbane facility.

A description of the processing sequence is given in their report in Appendix 5 of this report.

## **IX ENVIRONMENTAL**

## ENVIRONMENTAL

All field operations were carried out in accordance with the Code of Practice as required under: Environment Management for Activities under Petroleum Tenures (DME, 1996). An environmental Management Plan was not required.

As may be seen from the following photograph the impact, after a short time, was minimal. Care was taken at all stages of the survey to protect the environment. In particular no new creek crossings were constructed. Existing access was used or detours taken.

In the cultivated areas care was taken to minimise vehicle access. These areas were “no till” and concerns were expressed by the landowners as to the effect of ground compaction from heavy vehicles, predominantly the drilling rigs and water trucks. It was decided to assign each rig to a different paddock and for the water trucks to remain on made tracks or fence lines. The recording vehicles were light and had little impact. These procedures ensured that the compaction was minimised, as shown in the following picture.

A sanitized zone of 60 metres was maintained around underground facilities, such as telephone lines, pipelines and drains. No holes were drilled or fired within 40 metres of overhead powerlines.

All vehicles were inspected for parthenium infestation, and cleaned if required, and all vehicles carried a certificate verifying that this had been done. A typical certificate is shown in this section.

Other than water no chemical or other drilling fluids were used during the drilling of the shot holes.

Hole cuttings were removed, dispersed or flattened at the completion of the survey.

As a general rule spur drains or banks were installed on sloping ground to minimize erosion. Additional spur drains or banks were installed if requested by the landowner.

Without exception all landowners were satisfied with the steps taken during operations, and the remediation steps taken during restoration, to minimise the environmental impact.



Line MOS2005-06 after drilling and recording equipment deployed. Ground compaction is minimal.



Line MOS2005-05 some weeks after clearing and drilling.



# VEHICLE/MACHINERY WASHDOWN INSPECTION REPORT CHECKLIST

GREG JACKSON ACCREDITATION NUMBER 029  
FAX 07 4622 1546 MOBILE 0427 224 540  
P.O. BOX 52, ROMA QLD. 4455

3115

Company Uelgers Date 27/01/06  
Authorising Officer Tim Bax  
Location From BRISBANE To SMITH SOISMIC MOSAIC  
Model L/C Make TOYOTA Owner \_\_\_\_\_  
Vehicle Mileage 202 196 Hour Meter \_\_\_\_\_  
Registration No. or Chassis No. \_\_\_\_\_  
986-FLW CAB/UTILITY TRUCK TRAILER DOLLY TRAILER

## CHECKLIST - HEAVY MACHINERY

	Passed	Failed		Passed	Failed		Passed	Failed
Radiator	<input type="checkbox"/>	<input type="checkbox"/>	Walking Gear	<input type="checkbox"/>	<input type="checkbox"/>	Belly Plate	<input type="checkbox"/>	<input type="checkbox"/>
Mudguards	<input type="checkbox"/>	<input type="checkbox"/>	Cabins	<input type="checkbox"/>	<input type="checkbox"/>	Attachments	<input type="checkbox"/>	<input type="checkbox"/>

## CHECKLIST - VEHICLES

	Passed	Failed		Passed	Failed		Passed	Failed
Radiator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Engine Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cabin	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cabin Wheel Well	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mud Flaps	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chassis Rails	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sump Guards	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Wheels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Wheels	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Suspension	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Load of Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	Tray	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: This is to confirm that the following Vehicle/Machine has been Inspected and found to have been thoroughly cleaned in order to reduce the likelihood of transporting weed seeds or other pests.

INSPECTED AT Orkney Yard, Roma DATE 27/01/06

Inspectors Name \_\_\_\_\_ GREG JACKSON Certification Number 029

Inspectors Name \_\_\_\_\_ Certification Number \_\_\_\_\_

Inspectors Signature [Signature]

DRIVERS NAME TIM BAX SIGNATURE [Signature]

VEHICLE:- Was Washed ☐ Re- Washed ☒ Failed ☐

Printed by Roma Printers and Stationers 4622 1544

**X      SAFETY**

## **SAFETY**

Prior to the commencement of operations a risk analysis was carried out. This analysis involved management personnel from all contractors and Mosaic. An edited copy of this analysis is shown in Appendix 3.

The contractors applied and abided by their own HSE and Safety Management policies, which are constantly under review and are updated as required, as well as those of Mosaic Oil. On site, all contractor personnel were required to respond to all HSE policy and Safety Management Plans for the work. They were also required to respond and adhere to all directives and notices relative to any site specific induction programs. Prior to commencement of the survey, all personnel were issued with a handout, which contained generic information as well as site-specific details. This handout was carried in all vehicles and used as a basis for Safety/Toolbox Meetings, in conjunction with the General HSE and Safety Management Plans.

The contractors ensured that they conducted their operations in a manner that protected the environment and the safety, health and well being of all their employees.

The Velseis HSE Policy and Safety Management Plan was made available for inspection by Mosaic if requested.

Fire extinguishers and first aid kits were carried in all vehicles and the following personnel held first aid certificates:

Velseis: T Beale, J Parker

Seisdrill: C Kajewski

As mentioned in a previous section, safety meetings were held every morning before work commenced to discuss safety and operational issues. All personnel and management were required to attend. Mosaic management also attended these meetings.

There were no reportable incidents of any kind.

## **APPENDICES**

## **APPENDIX 1 Survey trace diagrams (mud maps) and coordinates**

Below is a typical trace diagram (mud map) for line MOS2005-01 issued to all operational crews. All other lines had similar maps.



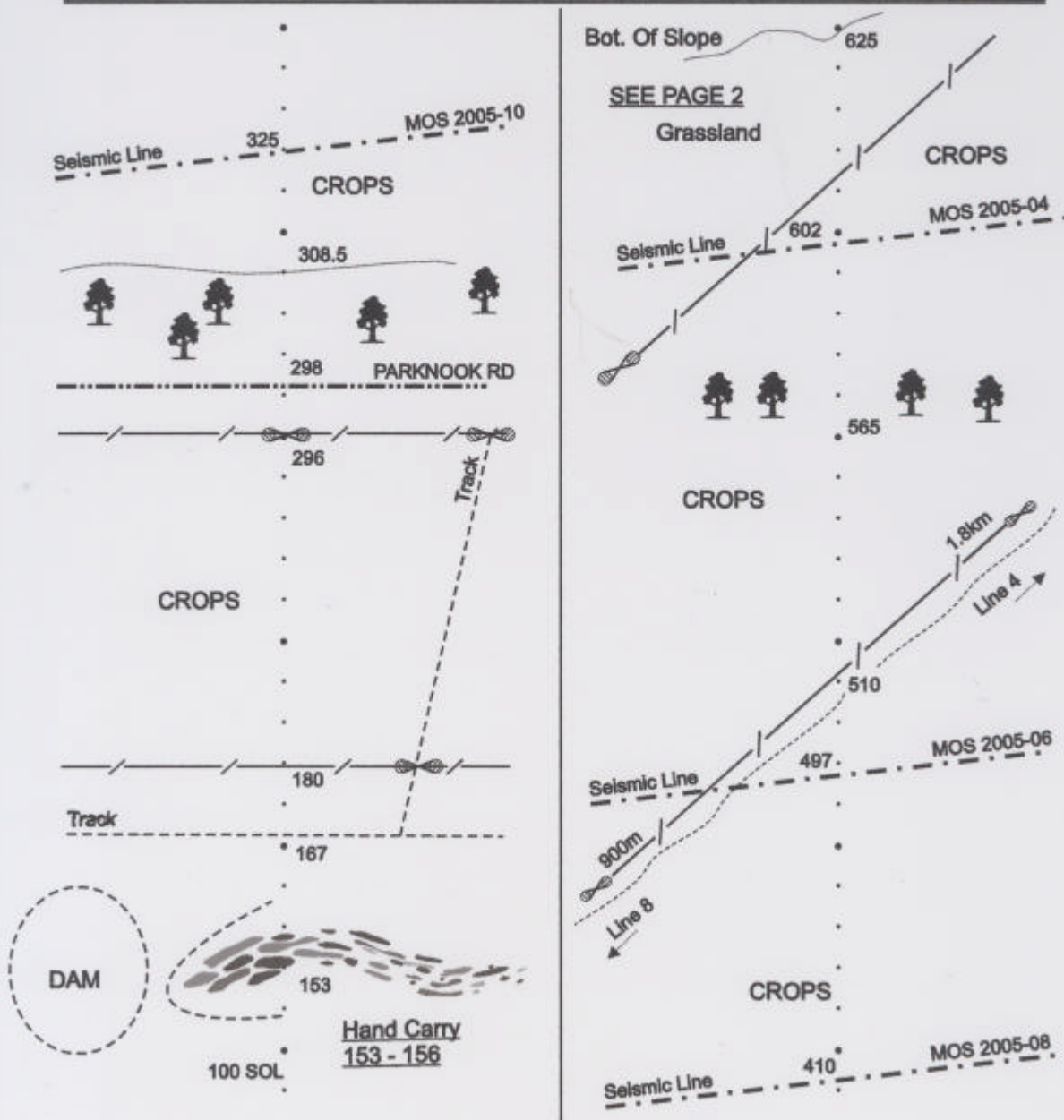
## TRACE DIAGRAM

LINE: MOS2005-01

DSS-FF-07

REV 8.0

August 2004

PROJECT/JOB # 05030CLIENT MOSAIC OILPAGE 1 OF 4 AREA: SURAT STN INTERVAL: 12.5 m SHOT INTERVAL: 100 mFROM STN 100 TO STN 1190 SHOOTING DIRECTION: \_\_\_\_\_ BEARING: \_\_\_\_\_°



# TRACE DIAGRAM

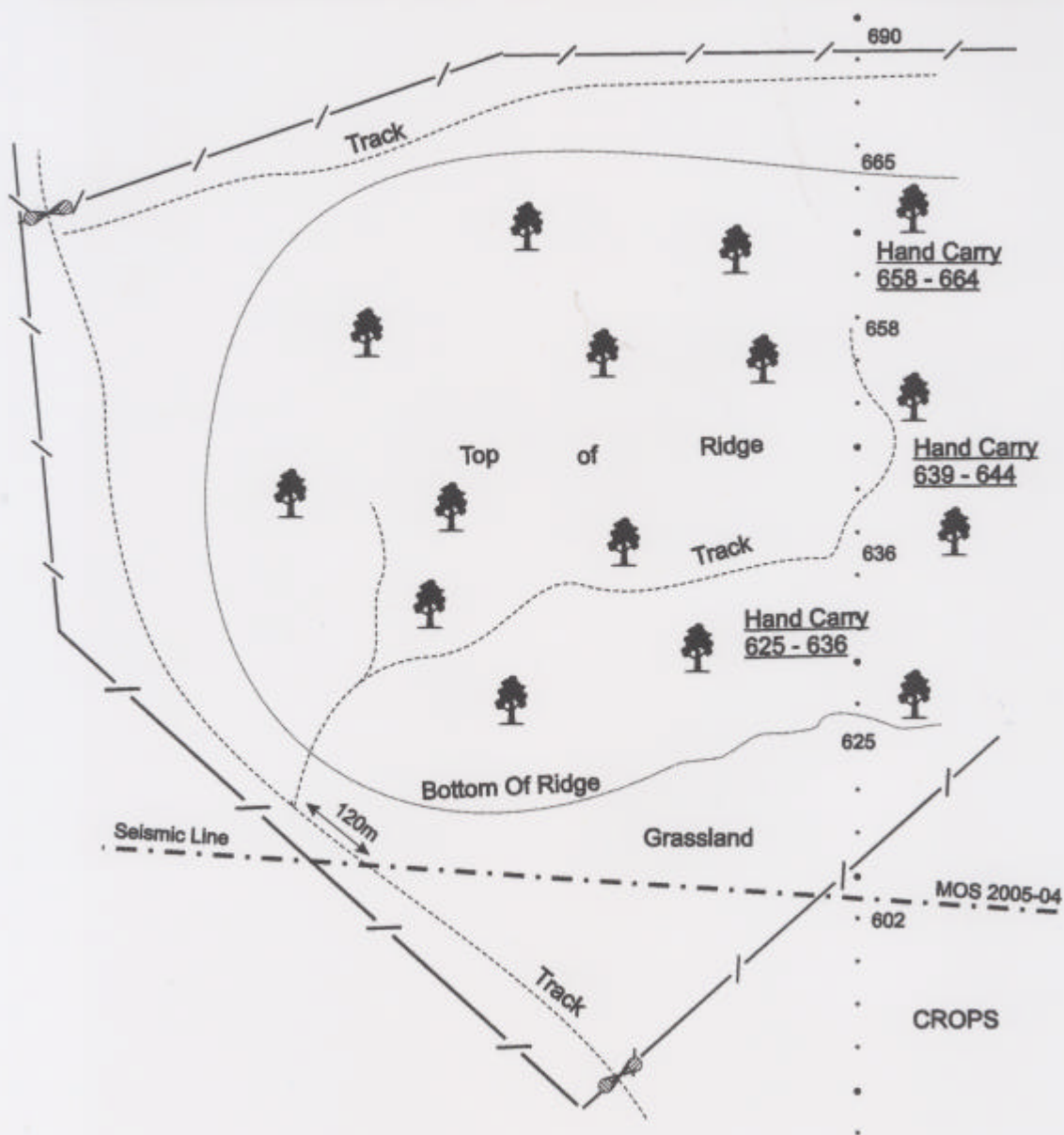
LINE: MOS2005-01

DSS-FF-07  
REV 8.0  
August 2004

PROJECT/JOB # 05030 CLIENT MOSAIC OIL

PAGE 2 OF 4 AREA: SURAT STN INTERVAL: 12.5 m SHOT INTERVAL: 100 m

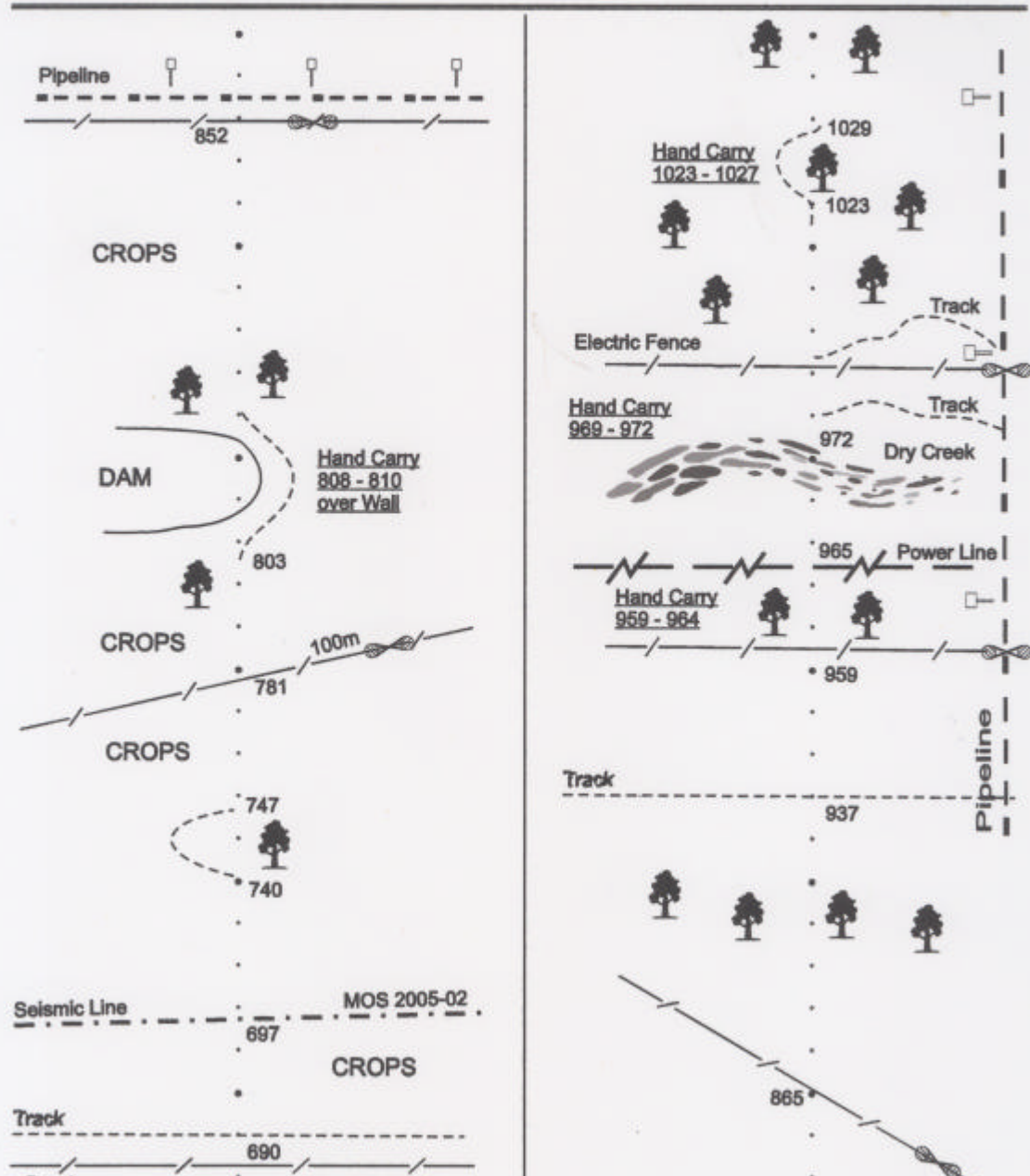
FROM STN 100 TO STN 1190 SHOOTING DIRECTION: \_\_\_\_\_ BEARING: \_\_\_\_\_ °







## TRACE DIAGRAM

LINE: MOS2005-01DSS-FF-07  
REV 8.0  
August 2004PROJECT/JOB # 05030 CLIENT MOSAIC OILPAGE 3 OF 4 AREA: SURAT STN INTERVAL: 12.5 m SHOT INTERVAL: 100 mFROM STN 100 TO STN 1190 SHOOTING DIRECTION: \_\_\_\_\_ BEARING: \_\_\_\_\_°





# TRACE DIAGRAM

DSS-FF-07

REV 8.0

August 2004

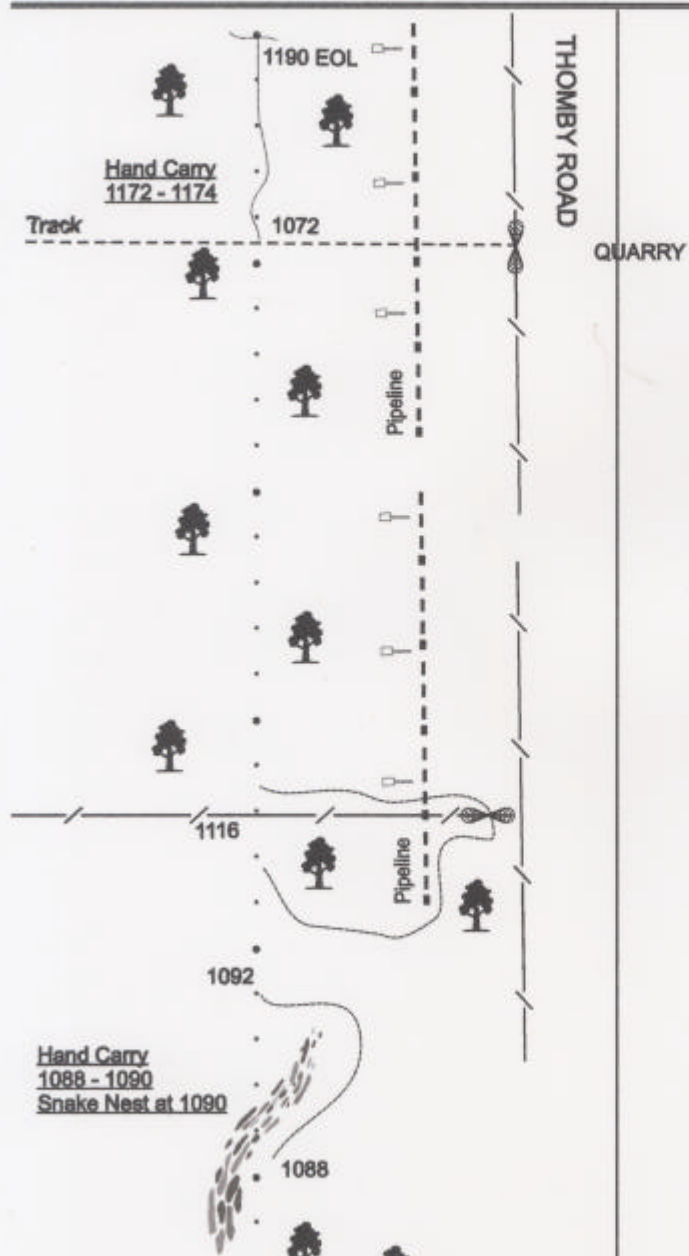
LINE: MOS2005-01

PROJECT/JOB # 05030

CLIENT MOSAIC OIL

PAGE 4 OF 4 AREA: SURAT STN INTERVAL: 12.5 m SHOT INTERVAL: 100 m

FROM STN 100 TO STN 1190 SHOOTING DIRECTION: \_\_\_\_\_ BEARING: \_\_\_\_\_°



The following listings are:

- The shot positions and heights for each line
- The position of each intersecting line, permanent markers and survey control points.

<p><b>MOSAIC OIL LINE MOS2005-01 November 2005</b> <b>GDA94 BAINBILLA MGA Zone 55 CM 147</b> <b>AHD71</b></p>
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MOS2005-01	380.5	27164006S	149092375E	713468469809541	3033
MOS2005-01	388.5	27164322S	149092289E	713443169808573	3017
MOS2005-01	396.5	27164637S	149092200E	713417069807608	3002
MOS2005-01	404.5	27164952S	149092111E	713390769806641	2988
MOS2005-01	412.5	27165267S	149092023E	713364869805676	2984
MOS2005-01	420.5	27165582S	149091935E	713339169804710	2988
MOS2005-01	428.5	27165897S	149091845E	713312669803747	2986
MOS2005-01	436.5	27170211S	149091757E	713286669802782	2974
MOS2005-01	444.5	27170527S	149091667E	713260269801815	2969
MOS2005-01	452.5	27170843S	149091581E	713234969800847	2969
MOS2005-01	460.5	27171157S	149091492E	713208769799884	2973
MOS2005-01	468.5	27171472S	149091402E	713182369798920	2986
MOS2005-01	476.5	27171787S	149091312E	713156069797954	3000
MOS2005-01	484.5	27172103S	149091226E	713130569796985	3007
MOS2005-01	492.5	27172418S	149091138E	713104769796021	3018
MOS2005-01	500.5	27172733S	149091053E	713079669795053	3034
MOS2005-01	508.5	27173048S	149090963E	713053269794088	3044
MOS2005-01	516.5	27173362S	149090875E	713027569793125	3053
MOS2005-01	524.5	27173678S	149090786E	713001269792156	3043
MOS2005-01	532.5	27173993S	149090698E	712975569791191	3051
MOS2005-01	540.5	27174308S	149090607E	712948669790226	3083
MOS2005-01	548.5	27174623S	149090520E	712923169789260	3098
MOS2005-01	556.5	27174938S	149090432E	712897169788297	3109
MOS2005-01	564.5	27175253S	149090345E	712871569787329	3119
MOS2005-01	572.5	27175569S	149090256E	712845569786362	3134
MOS2005-01	580.5	27175883S	149090170E	712820169785398	3151
MOS2005-01	588.5	27180199S	149090080E	712793769784431	3181
MOS2005-01	596.5	27180513S	149085990E	712767369783468	3214
MOS2005-01	604.5	27180829S	149085905E	712742269782499	3241
MOS2005-01	612.5	27181144S	149085811E	712714969781536	3271
MOS2005-01	620.5	27181459S	149085725E	712689569780570	3300
MOS2005-01	624.5	27181615S	149085674E	712674769780091	3318
MOS2005-01	636.5	27182100S	149085597E	712650869778603	3638
MOS2005-01	644.5	27182403S	149085454E	712610069777677	3657
MOS2005-01	652.5	27182723S	149085385E	712589469776694	3651
MOS2005-01	656.5	27182878S	149085334E	712574569776220	3633
MOS2005-01	668.5	27183350S	149085197E	712534269774773	3351
MOS2005-01	676.5	27183665S	149085107E	712507869773810	3300
MOS2005-01	684.5	27183981S	149085021E	712482569772842	3266
MOS2005-01	692.5	27184294S	149084926E	712454869771880	3234
MOS2005-01	700.5	27184609S	149084839E	712429169770915	3210
MOS2005-01	708.5	27184925S	149084752E	712403769769947	3190
MOS2005-01	716.5	27185240S	149084664E	712377869768980	3191
MOS2005-01	724.5	27185554S	149084572E	712350669768020	3179
MOS2005-01	732.5	27185870S	149084485E	712325169767051	3190
MOS2005-01	740.5	27190180S	149084375E	712293469766102	3228
MOS2005-01	748.5	27190497S	149084295E	712269669765130	3155
MOS2005-01	756.5	27190814S	149084217E	712246469764159	3153
MOS2005-01	764.5	27191132S	149084139E	712223569763183	3123
MOS2005-01	772.5	27191447S	149084049E	712197169762218	3087
MOS2005-01	780.5	27191760S	149083958E	712170169761258	3062
MOS2005-01	788.5	27192077S	149083872E	712145069760286	3044
MOS2005-01	796.5	27192393S	149083788E	712120169759318	3028
MOS2005-01	801.5	27192586S	149083718E	712100069758726	3019
MOS2005-01	812.5	27193026S	149083625E	712072169757377	3006
MOS2005-01	820.5	27193339S	149083522E	712042169756420	3013
MOS2005-01	828.5	27193656S	149083449E	712020369755446	3024

MOS2005-01	836.5	27193972S	149083362E	711994769754478	3026
MOS2005-01	844.5	27194288S	149083278E	711970069753510	3017
MOS2005-01	847.5	27194407S	149083250E	711961769753143	3013
MOS2005-01	860.5	27194919S	149083105E	711919269751574	2990
MOS2005-01	868.5	27195234S	149083017E	711893269750611	2979
MOS2005-01	876.5	27195552S	149082941E	711870669749634	2973
MOS2005-01	884.5	27195868S	149082856E	711845769748665	2967
MOS2005-01	892.5	27200183S	149082768E	711819769747700	2960
MOS2005-01	900.5	27200500S	149082685E	711795469746730	2965
MOS2005-01	908.5	27200817S	149082608E	711772369745756	2982
MOS2005-01	916.5	27201134S	149082528E	711748769744786	2974
MOS2005-01	924.5	27201443S	149082414E	711715769743839	2951
MOS2005-01	932.5	27201761S	149082342E	711694269742862	2929
MOS2005-01	940.5	27202077S	149082252E	711668069741896	2917
MOS2005-01	948.5	27202392S	149082168E	711643269740929	2911
MOS2005-01	956.5	27202711S	149082093E	711620969739952	2908
MOS2005-01	958.5	27202789S	149082065E	711612869739713	2908
MOS2005-01	972.5	27203343S	149081922E	711570669738014	2907
MOS2005-01	980.5	27203662S	149081854E	711550169737034	2922
MOS2005-01	988.5	27203976S	149081761E	711522969736074	2943
MOS2005-01	996.5	27204290S	149081666E	711495269735112	2960
MOS2005-01	1004.5	27204605S	149081580E	711469769734144	2984
MOS2005-01	1012.5	27204921S	149081494E	711444469733178	2993
MOS2005-01	1020.5	27205237S	149081407E	711418969732209	2951
MOS2005-01	1028.5	27205552S	149081320E	711393569731243	2926
MOS2005-01	1036.5	27205868S	149081235E	711368469730274	2913
MOS2005-01	1044.5	27210183S	149081149E	711343269729307	2915
MOS2005-01	1052.5	27210499S	149081067E	711318869728340	2899
MOS2005-01	1060.5	27210817S	149080989E	711295769727365	2882
MOS2005-01	1068.5	27211132S	149080897E	711268869726400	2866
MOS2005-01	1076.5	27211448S	149080814E	711244269725432	2857
MOS2005-01	1084.5	27211763S	149080727E	711218869724464	2849
MOS2005-01	1092.5	27212078S	149080634E	711191669723501	2837
MOS2005-01	1100.5	27212391S	149080544E	711165269722539	2850
MOS2005-01	1108.5	27212710S	149080468E	711142569721563	2853
MOS2005-01	1116.5	27213028S	149080394E	711120469720589	2864
MOS2005-01	1124.5	27213342S	149080299E	711092969719625	2889
MOS2005-01	1132.5	27213658S	149080219E	711069069718657	2940
MOS2005-01	1140.5	27213971S	149080115E	711038969717699	2997
MOS2005-01	1148.5	27214286S	149080032E	711014569716731	2986
MOS2005-01	1156.5	27214607S	149075964E	710994069715748	2953
MOS2005-01	1164.5	27214921S	149075876E	710968369714784	2989
MOS2005-01	1172.5	27215244S	149075824E	710952369713794	2993
MOS2005-01	1180.5	27215550S	149075694E	710914869712857	2966
MOS2005-01	1188.5	27215868S	149075621E	710893369711880	2922

**MOSAIC OIL LINE MOS2005-02 November 2005**  
**GDA94 MGA Zone 55 CM 147**  
**AHD71**

MOS2005-02	100.5 27175519S149060469E 707954969787348 3030
MOS2005-02	108.5 27175624S149060813E 708048869787009 3042
MOS2005-02	116.5 27175728S149061157E 708142969786674 3055
MOS2005-02	124.5 27175832S149061502E 708237169786339 3069
MOS2005-02	132.5 27175936S149061846E 708331369786001 3082
MOS2005-02	140.5 27180041S149062191E 708425469785662 3092
MOS2005-02	148.5 27180144S149062536E 708520069785328 3115
MOS2005-02	156.5 27180248S149062881E 708614269784993 3127
MOS2005-02	164.5 27180350S149063225E 708708369784664 3138
MOS2005-02	172.5 27180454S149063571E 708802769784327 3139
MOS2005-02	180.5 27180559S149063915E 708896869783987 3163
MOS2005-02	188.5 27180668S149064257E 708990469783636 3181
MOS2005-02	196.5 27180774S149064602E 709084669783295 3200
MOS2005-02	204.5 27180868S149064949E 709179669782990 3230
MOS2005-02	212.5 27180955S149065300E 709275669782705 3243
MOS2005-02	220.5 27181024S149065657E 709373469782476 3256
MOS2005-02	228.5 27181167S149065988E 709463669782018 3223
MOS2005-02	236.5 27181284S149070328E 709556569781645 3217
MOS2005-02	244.5 27181394S149070670E 709649969781290 3205
MOS2005-02	252.5 27181494S149071016E 709744769780964 3195
MOS2005-02	260.5 27181596S149071361E 709838969780635 3186
MOS2005-02	268.5 27181703S149071703E 709932669780290 3171
MOS2005-02	276.5 27181806S149072048E 710026969779958 3164
MOS2005-02	284.5 27181912S149072392E 710120969779614 3150
MOS2005-02	292.5 27182015S149072737E 710215169779281 3135
MOS2005-02	300.5 27182125S149073079E 710308669778927 3129
MOS2005-02	308.5 27182233S149073422E 710402569778580 3117
MOS2005-02	316.5 27182341S149073765E 710496269778228 3105
MOS2005-02	324.5 27182457S149074106E 710589169777858 3100
MOS2005-02	332.5 27182512S149074468E 710688669777669 3094
MOS2005-02	340.5 27182635S149074806E 710780869777277 3096
MOS2005-02	348.5 27182740S149075149E 710874669776938 3086
MOS2005-02	356.5 27182847S149075493E 710968669776592 3097
MOS2005-02	364.5 27182951S149075838E 711062869776255 3105
MOS2005-02	372.5 27183059S149080181E 711156869775907 3097
MOS2005-02	380.5 27183160S149080526E 711250969775580 3098
MOS2005-02	388.5 27183258S149080873E 711345869775262 3109
MOS2005-02	396.5 27183363S149081217E 711439969774922 3127
MOS2005-02	406.5 27183491S149081649E 711557969774507 3155
MOS2005-02	412.5 27183569S149081906E 711628369774255 3171
MOS2005-02	420.5 27183672S149082251E 711722669773921 3198
MOS2005-02	428.5 27183771S149082599E 711817669773600 3227
MOS2005-02	436.5 27183848S149082953E 711914769773347 3256
MOS2005-02	444.5 27183963S149083294E 712007769772977 3288
MOS2005-02	452.5 27184071S149083636E 712101269772627 3290
MOS2005-02	460.5 27184180S149083980E 712195169772276 3287
MOS2005-02	468.5 27184302S149084316E 712287069771885 3247
MOS2005-02	476.5 27184404S149084662E 712381669771554 3227
MOS2005-02	484.5 27184511S149085004E 712475269771210 3217
MOS2005-02	492.5 27184607S149085352E 712570269770897 3209
MOS2005-02	500.5 27184719S149085694E 712663669770536 3195
MOS2005-02	508.5 27184822S149090039E 712758069770204 3189
MOS2005-02	516.5 27184922S149090385E 712852669769879 3190
MOS2005-02	524.5 27185026S149090730E 712946969769542 3192
MOS2005-02	532.5 27185136S149091072E 713040269769189 3189
MOS2005-02	540.5 27185233S149091419E 713135269768871 3183
MOS2005-02	548.5 27185339S149091763E 713229269768529 3178
MOS2005-02	556.5 27185441S149092109E 713323869768200 3177
MOS2005-02	564.5 27185546S149092452E 713417569767859 3186
MOS2005-02	572.5 27185643S149092799E 713512669767546 3245
MOS2005-02	580.5 27185754S149093142E 713606269767188 3233
MOS2005-02	589.5 27185873S149093528E 713711869766804 3193
MOS2005-02	596.5 27185955S149093833E 713795169766535 3158
MOS2005-02	604.5 27190057S149094179E 713889669766205 3160
MOS2005-02	612.5 27190169S149094521E 713983069765843 3158
MOS2005-02	614.5 27190202S149094603E 714005469765738 3152

MOS2005-02	632.5	27190423S	149095384E	714219069765022	3170
MOS2005-02	636.5	27190477S	149095555E	714265869764848	3185
MOS2005-02	644.5	27190598S	149095894E	714358269764458	3243
MOS2005-02	653.5	27190709S	149100284E	714464869764099	3315
MOS2005-02	660.5	27190782S	149100591E	714548869763860	3295
MOS2005-02	668.5	27190892S	149100934E	714642669763502	3274
MOS2005-02	676.5	27191009S	149101273E	714735369763127	3262
MOS2005-02	684.5	27191119S	149101616E	714828969762774	3272
MOS2005-02	692.5	27191232S	149101957E	714922169762407	3280
MOS2005-02	700.5	27191355S	149102293E	715013869762013	3263
MOS2005-02	708.5	27191479S	149102631E	715106169761615	3246
MOS2005-02	716.5	27191573S	149102980E	715201469761310	3287
MOS2005-02	724.5	27191682S	149103322E	715295069760959	3316
MOS2005-02	732.5	27191759S	149103676E	715392069760703	3281
MOS2005-02	740.5	27191837S	149104030E	715488869760446	3262
MOS2005-02	748.5	27191945S	149104374E	715582869760098	3248
MOS2005-02	756.5	27192041S	149104721E	715677769759786	3243
MOS2005-02	764.5	27192144S	149105067E	715772269759451	3238
MOS2005-02	772.5	27192249S	149105411E	715866269759113	3248
MOS2005-02	780.5	27192350S	149105756E	715960669758784	3246
MOS2005-02	788.5	27192454S	149110100E	716054669758449	3252
MOS2005-02	796.5	27192556S	149110447E	716149369758118	3225
MOS2005-02	804.5	27192661S	149110791E	716243369757777	3206
MOS2005-02	812.5	27192762S	149111136E	716337769757450	3196
MOS2005-02	820.5	27192869S	149111479E	716431469757103	3184
MOS2005-02	828.5	27192967S	149111827E	716526569756786	3190
MOS2005-02	836.5	27193062S	149112173E	716621369756477	3206
MOS2005-02	844.5	27193157S	149112522E	716716669756168	3220
MOS2005-02	852.5	27193278S	149112861E	716809169755779	3214
MOS2005-02	860.5	27193379S	149113205E	716903269755451	3204
MOS2005-02	868.5	27193486S	149113550E	716997569755106	3201
MOS2005-02	876.5	27193589S	149113894E	717091369754771	3209
MOS2005-02	884.5	27193689S	149114240E	717186169754447	3203
MOS2005-02	892.5	27193787S	149114587E	717280969754129	3189
MOS2005-02	900.5	27193882S	149114936E	717376269753821	3171
MOS2005-02	908.5	27194004S	149115273E	717468369753427	3181
MOS2005-02	916.5	27194109S	149115618E	717562569753088	3186
MOS2005-02	924.5	27194216S	149115960E	717656169752740	3186
MOS2005-02	932.5	27194323S	149120304E	717749969752394	3183
MOS2005-02	941.5	27194447S	149120689E	717855169751995	3178
MOS2005-02	948.5	27194532S	149120992E	717938069751719	3190
MOS2005-02	956.5	27194625S	149121342E	718033769751417	3188
MOS2005-02	964.5	27194749S	149121678E	718125369751016	3204
MOS2005-02	972.5	27194848S	149122025E	718220369750697	3212
MOS2005-02	980.5	27194950S	149122370E	718314469750365	3223
MOS2005-02	988.5	27195037S	149122721E	718410469750080	3234
MOS2005-02	996.5	27195151S	149123062E	718503669749714	3248
MOS2005-02	1004.5	27195252S	149123408E	718598169749386	3258
MOS2005-02	1012.5	27195354S	149123753E	718692569749053	3270
MOS2005-02	1015.5	27195393S	149123882E	718727969748929	3274

**MOSAIC OIL LINE MOS2005-03 November 2005**  
**GDA94 MGA Zone 55 CM 147**  
**AHD71**

MOS2005-03	100.5	27105567S	149121196E	718281269914739	2567
MOS2005-03	108.5	27105893S	149121207E	718282769913737	2578
MOS2005-03	116.5	27110217S	149121230E	718287369912737	2601
MOS2005-03	124.5	27110542S	149121208E	718279569911737	2621
MOS2005-03	132.5	27110866S	149121251E	718289569910740	2622
MOS2005-03	140.5	27111119S	149121262E	718290769909737	2621
MOS2005-03	148.5	27111515S	149121282E	718294569908738	2621
MOS2005-03	156.5	27111840S	149121299E	718297369907739	2618
MOS2005-03	164.5	27112165S	149121306E	718297569906739	2613
MOS2005-03	172.5	27112489S	149121317E	718298769905739	2612
MOS2005-03	180.5	27112814S	149121326E	718299569904738	2619
MOS2005-03	188.5	27113139S	149121342E	718302269903739	2630
MOS2005-03	196.5	27113463S	149121353E	718303569902739	2638
MOS2005-03	204.5	27113788S	149121366E	718305369901739	2649
MOS2005-03	212.5	27114112S	149121392E	718310669900740	2658
MOS2005-03	220.5	27114437S	149121403E	718311869899740	2664
MOS2005-03	228.5	27114762S	149121408E	718311669898738	2666
MOS2005-03	236.5	27115086S	149121420E	718313169897740	2668
MOS2005-03	244.5	27115411S	149121423E	718312169896740	2670
MOS2005-03	252.5	27115736S	149121433E	718313169895739	2672
MOS2005-03	260.5	27120060S	149121453E	718316969894741	2680
MOS2005-03	268.5	27120385S	149121468E	718319269893740	2686
MOS2005-03	276.5	27120709S	149121482E	718321569892742	2691
MOS2005-03	284.5	27121034S	149121496E	718323569891742	2697
MOS2005-03	292.5	27121359S	149121510E	718325569890740	2707
MOS2005-03	300.5	27121683S	149121520E	718326569889742	2720
MOS2005-03	308.5	27122008S	149121532E	718328169888742	2734
MOS2005-03	316.5	27122333S	149121525E	718324369887742	2744
MOS2005-03	324.5	27122657S	149121556E	718331269886744	2749
MOS2005-03	332.5	27122982S	149121572E	718333869885742	2756
MOS2005-03	340.5	27123307S	149121591E	718337469884741	2768
MOS2005-03	348.5	27123631S	149121598E	718337569883741	2782
MOS2005-03	356.5	27123956S	149121607E	718338269882741	2798
MOS2005-03	364.5	27124280S	149121622E	718340569881742	2808
MOS2005-03	372.5	27124605S	149121634E	718342269880742	2813
MOS2005-03	380.5	27124930S	149121642E	718342569879742	2814
MOS2005-03	388.5	27125255S	149121652E	718343469878741	2811
MOS2005-03	398.5	27125661S	149121670E	718346469877492	2803
MOS2005-03	404.5	27125904S	149121679E	718347669876742	2797
MOS2005-03	414.5	27130310S	149121698E	718350569875492	2793
MOS2005-03	420.5	27130553S	149121709E	718352369874742	2793
MOS2005-03	428.5	27130877S	149121725E	718354769873745	2784
MOS2005-03	436.5	27131202S	149121736E	718356169872745	2793
MOS2005-03	444.5	27131527S	149121747E	718357469871744	2799
MOS2005-03	452.5	27131851S	149121759E	718358969870744	2809
MOS2005-03	460.5	27132176S	149121770E	718360169869745	2819
MOS2005-03	468.5	27132501S	149121780E	718361269868743	2819
MOS2005-03	476.5	27132826S	149121780E	718359569867743	2810
MOS2005-03	484.5	27133150S	149121806E	718364869866744	2809
MOS2005-03	492.5	27133474S	149121836E	718371369865746	2809
MOS2005-03	500.5	27133799S	149121846E	718372369864745	2809
MOS2005-03	508.5	27134123S	149121875E	718378669863748	2802
MOS2005-03	516.5	27134448S	149121863E	718373569862745	2804
MOS2005-03	525.5	27134813S	149121877E	718375469861621	2796
MOS2005-03	532.5	27135097S	149121899E	718379769860746	2804
MOS2005-03	540.5	27135422S	149121902E	718379069859747	2812
MOS2005-03	548.5	27135747S	149121927E	718384069858746	2821
MOS2005-03	556.5	27140071S	149121965E	718392869857747	2833
MOS2005-03	564.5	27140395S	149121993E	718398769856747	2843
MOS2005-03	572.5	27140719S	149122004E	718400069855748	2849
MOS2005-03	580.5	27141044S	149122015E	718401169854748	2857
MOS2005-03	588.5	27141368S	149122026E	718402469853749	2866
MOS2005-03	596.5	27141693S	149122036E	718403469852750	2876
MOS2005-03	604.5	27142018S	149122039E	718402669851749	2862
MOS2005-03	611.5	27142303S	149122041E	718401469850873	2854
MOS2005-03	620.5	27142668S	149122033E	718397369849748	2861

MOS2005-03	628.5	27142992S	149122072E	718406469848749	2866
MOS2005-03	634.5	27143236S	149122074E	718405669848000	2872

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MOS2005-04	100.5 27172703S149063869E 708904369795859 2998
MOS2005-04	108.5 27172801S149064216E 708999369795540 2995
MOS2005-04	116.5 27172903S149064562E 709093969795211 2995
MOS2005-04	124.5 27172988S149064912E 709189769794932 2995
MOS2005-04	132.5 27173104S149065253E 709282769794559 3003
MOS2005-04	140.5 27173200S149065600E 709377869794249 3017
MOS2005-04	148.5 27173295S149065949E 709473169793940 3023
MOS2005-04	156.5 27173394S149070295E 709567869793618 3021
MOS2005-04	164.5 27173488S149070643E 709663069793312 3015
MOS2005-04	172.5 27173592S149070987E 709757269792976 3025
MOS2005-04	180.5 27173693S149071334E 709851969792650 3014
MOS2005-04	188.5 27173785S149071681E 709947069792350 3012
MOS2005-04	196.5 27173897S149072024E 710040569791991 3025
MOS2005-04	204.5 27173992S149072371E 710135669791681 3021
MOS2005-04	212.5 27174106S149072712E 710228869791314 3017
MOS2005-04	220.5 27174191S149073063E 710324869791035 3035
MOS2005-04	228.5 27174291S149073409E 710419569790712 3046
MOS2005-04	236.5 27174385S149073758E 710514869790408 3041
MOS2005-04	244.5 27174491S149074101E 710608769790065 3030
MOS2005-04	253.5 27174582S149074498E 710717469789766 3018
MOS2005-04	260.5 27174682S149074796E 710798969789444 3009
MOS2005-04	268.5 27174782S149075142E 710893569789118 3010
MOS2005-04	276.5 27174885S149075487E 710987769788786 3013
MOS2005-04	284.5 27174984S149075834E 711082769788467 3002
MOS2005-04	292.5 27175082S149080180E 711177269788148 2995
MOS2005-04	300.5 27175196S149080521E 711270469787779 3008
MOS2005-04	308.5 27175280S149080873E 711366869787505 3019
MOS2005-04	316.5 27175380S149081219E 711461369787181 3045
MOS2005-04	324.5 27175482S149081564E 711555769786851 3047
MOS2005-04	336.5 27175633S149082083E 711697769786363 3049
MOS2005-04	340.5 27175676S149082258E 711745569786220 3054
MOS2005-04	348.5 27175779S149082603E 711839969785889 3072
MOS2005-04	355.5 27175864S149082907E 711923069785612 3084
MOS2005-04	364.5 27175974S149083296E 712029569785255 3102
MOS2005-04	372.5 27180076S149083643E 712124269784925 3127
MOS2005-04	380.5 27180171S149083990E 712219269784616 3133
MOS2005-04	388.5 27180272S149084335E 712313669784290 3148
MOS2005-04	396.5 27180372S149084682E 712408469783966 3165
MOS2005-04	404.5 27180470S149085027E 712502969783646 3180
MOS2005-04	412.5 27180573S149085372E 712597069783313 3207
MOS2005-04	420.5 27180672S149085718E 712691869782993 3224
MOS2005-04	428.5 27180767S149090067E 712787269782682 3242
MOS2005-04	436.5 27180858S149090416E 712882869782386 3264
MOS2005-04	444.5 27180950S149090765E 712978169782086 3274
MOS2005-04	452.5 27181058S149091107E 713071769781737 3296
MOS2005-04	460.5 27181157S149091453E 713166269781416 3293
MOS2005-04	468.5 27181258S149091799E 713260869781090 3282
MOS2005-04	475.5 27181347S149092101E 713343469780801 3273
MOS2005-04	484.5 27181465S149092489E 713449569780420 3271
MOS2005-04	492.5 27181564S149092836E 713544369780099 3257
MOS2005-04	500.5 27181661S149093182E 713639069779785 3244
MOS2005-04	508.5 27181763S149093528E 713733569779453 3258
MOS2005-04	516.5 27181861S149093874E 713828269779136 3257
MOS2005-04	524.5 27181960S149094221E 713922969778815 3245
MOS2005-04	532.5 27182058S149094568E 714018169778497 3227
MOS2005-04	540.5 27182155S149094914E 714112769778181 3241
MOS2005-04	548.5 27182257S149095259E 714206969777851 3235
MOS2005-04	556.5 27182350S149095608E 714302469777547 3246
MOS2005-04	562.5 27182432S149095865E 714372669777284 3258
MOS2005-04	572.5 27182556S149100299E 714491169776881 3249
MOS2005-04	580.5 27182655S149100645E 714585969776558 3251
MOS2005-04	588.5 27182751S149100992E 714680769776246 3245
MOS2005-04	596.5 27182851S149101338E 714775369775924 3224
MOS2005-04	604.5 27182949S149101684E 714870169775606 3213
MOS2005-04	612.5 27183051S149102029E 714964469775273 3217
MOS2005-04	620.5 27183148S149102378E 715059669774960 3215



MOS2005-04	628.5	27183248S	149102722E	715153969774633	3224
MOS2005-04	636.5	27183347S	149103069E	715248769774312	3250
MOS2005-04	644.5	27183448S	149103415E	715343369773987	3274
MOS2005-04	652.5	27183548S	149103761E	715437969773662	3288
MOS2005-04	660.5	27183647S	149104107E	715532569773339	3276
MOS2005-04	668.5	27183739S	149104456E	715627869773040	3249
MOS2005-04	676.5	27183832S	149104805E	715723369772737	3227
MOS2005-04	684.5	27183929S	149105152E	715818169772423	3252
MOS2005-04	692.5	27184025S	149105499E	715913069772108	3280
MOS2005-04	700.5	27184126S	149105845E	716007769771783	3314
MOS2005-04	708.5	27184227S	149110189E	716101869771454	3357
MOS2005-04	716.5	27184328S	149110536E	716196669771126	3404
MOS2005-04	724.5	27184439S	149110878E	716290069770768	3468
MOS2005-04	732.5	27184565S	149111214E	716381769770365	3639
MOS2005-04	740.5	27184645S	149111568E	716478669770103	3639
MOS2005-04	749.5	27184748S	149111960E	716585969769766	3527
MOS2005-04	756.5	27184837S	149112263E	716668669769477	3576
MOS2005-04	764.5	27184950S	149112604E	716761869769113	3644
MOS2005-04	768.5	27184992S	149112780E	716810069768974	3650
MOS2005-04	780.5	27185124S	149113305E	716953869768543	3463
MOS2005-04	788.5	27185227S	149113650E	717047969768210	3412
MOS2005-04	796.5	27185326S	149113996E	717142769767888	3375
MOS2005-04	804.5	27185416S	149114345E	717238169767595	3344
MOS2005-04	812.5	27185522S	149114691E	717332569767252	3328
MOS2005-04	820.5	27185617S	149115037E	717427169766941	3359
MOS2005-04	828.5	27185724S	149115382E	717521369766597	3405

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MOS2005-05	100.5	27110424S	149134107E	72072956991	1668	2786
MOS2005-05	108.5	27110749S	149134101E	72072606991	10668	2781
MOS2005-05	116.5	27111074S	149134110E	72072696990	90667	2768
MOS2005-05	124.5	27111399S	149134108E	72072466990	80668	2749
MOS2005-05	132.5	27111723S	149134110E	72072336990	70669	2731
MOS2005-05	140.5	27112049S	149134098E	72071826990	60668	2713
MOS2005-05	148.5	27112374S	149134109E	72071956990	50667	2705
MOS2005-05	156.5	27112698S	149134103E	72071626990	40669	2702
MOS2005-05	164.5	27113024S	149134117E	72071826990	30666	2705
MOS2005-05	172.5	27113348S	149134119E	72071696990	20669	2715
MOS2005-05	180.5	27113673S	149134124E	72071646990	10667	2724
MOS2005-05	188.5	27113998S	149134122E	72071436990	00667	2732
MOS2005-05	196.5	27114322S	149134126E	72071366989	90668	2738
MOS2005-05	204.5	27114647S	149134127E	72071216989	80669	2740
MOS2005-05	212.5	27114972S	149134148E	72071596989	70666	2734
MOS2005-05	220.5	27115297S	149134122E	72070706989	60667	2715
MOS2005-05	228.5	27115621S	149134123E	72070556989	50670	2688
MOS2005-05	236.5	27115946S	149134127E	72070486989	40669	2672
MOS2005-05	244.5	27120271S	149134125E	72070276989	30669	2680
MOS2005-05	252.5	27120596S	149134128E	72070176989	20670	2688
MOS2005-05	260.5	27120921S	149134136E	72070216989	10670	2682
MOS2005-05	268.5	27121246S	149134133E	72069946989	00669	2673
MOS2005-05	276.5	27121571S	149134135E	72069836988	90668	2659
MOS2005-05	284.5	27121895S	149134144E	72069886988	80670	2651
MOS2005-05	292.5	27122220S	149134142E	72069646988	70668	2648
MOS2005-05	300.5	27122545S	149134138E	72069376988	60671	2646
MOS2005-05	308.5	27122870S	149134147E	72069446988	50670	2649
MOS2005-05	316.5	27123195S	149134139E	72069036988	40669	2651
MOS2005-05	326.5	27123601S	149134140E	72068836988	30670	2652
MOS2005-05	332.5	27123844S	149134140E	72068726988	20670	2655
MOS2005-05	340.5	27124168S	149134165E	72069226988	10671	2651
MOS2005-05	348.5	27124494S	149134202E	72070066988	00668	2642
MOS2005-05	356.5	27124818S	149134158E	72068676987	90670	2645
MOS2005-05	364.5	27125143S	149134143E	72068076987	80672	2668
MOS2005-05	372.5	27125469S	149134152E	72068166987	70669	2700
MOS2005-05	380.5	27125793S	149134147E	72067826987	60673	2702
MOS2005-05	388.5	27130118S	149134150E	72067736987	50671	2703
MOS2005-05	396.5	27130442S	149134152E	72067636987	40672	2705
MOS2005-05	404.5	27130767S	149134157E	72067576987	30672	2707
MOS2005-05	412.5	27131092S	149134156E	72067376987	20672	2711
MOS2005-05	420.5	27131417S	149134155E	72067166987	10672	2714
MOS2005-05	428.5	27131742S	149134147E	72066766987	00673	2720
MOS2005-05	436.5	27132067S	149134145E	72066536986	90673	2725
MOS2005-05	444.5	27132392S	149134188E	72067536986	80671	2731
MOS2005-05	452.5	27132717S	149134165E	72066746986	70670	2737
MOS2005-05	460.5	27133041S	149134171E	72066726986	60672	2742
MOS2005-05	468.5	27133366S	149134165E	72066376986	50672	2745
MOS2005-05	476.5	27133691S	149134163E	72066146986	40671	2747
MOS2005-05	484.5	27134016S	149134162E	72065936986	30672	2741
MOS2005-05	492.5	27134341S	149134148E	72065376986	20672	2739
MOS2005-05	500.5	27134665S	149134180E	72066076986	10672	2742
MOS2005-05	508.5	27134990S	149134172E	72065696986	00673	2750
MOS2005-05	516.5	27135316S	149134172E	72065506985	90670	2750
MOS2005-05	524.5	27135640S	149134164E	72065116985	80672	2743
MOS2005-05	532.5	27135965S	149134158E	72064766985	70672	2747
MOS2005-05	540.5	27140289S	149134161E	72064676985	60674	2750
MOS2005-05	548.5	27140614S	149134179E	72064976985	50674	2755
MOS2005-05	556.5	27140939S	149134189E	72065076985	40672	2759
MOS2005-05	564.5	27141264S	149134262E	72066916985	30669	2766
MOS2005-05	572.5	27141589S	149134185E	72064606985	20674	2771
MOS2005-05	580.5	27141914S	149134170E	72064026985	10673	2777
MOS2005-05	588.5	27142238S	149134186E	72064296985	00674	2781
MOS2005-05	596.5	27142563S	149134237E	72065516984	90671	2786
MOS2005-05	604.5	27142888S	149134200E	72064316984	80674	2791
MOS2005-05	606.5	27142969S	149134200E	72064276984	8424	2793

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MOS2005-06	100.5	27165750S	149071760E	709989869804767	2875
MOS2005-06	108.5	27165832S	149072112E	710086169804497	2888
MOS2005-06	116.5	27165922S	149072461E	710181769804203	2895
MOS2005-06	124.5	27170008S	149072813E	710277969803924	2906
MOS2005-06	132.5	27170097S	149073161E	710373369803632	2899
MOS2005-06	140.5	27170183S	149073512E	710469469803353	2897
MOS2005-06	148.5	27170268S	149073862E	710565369803075	2898
MOS2005-06	156.5	27170348S	149074216E	710662169802812	2902
MOS2005-06	164.5	27170456S	149074560E	710756169802462	2898
MOS2005-06	172.5	27170540S	149074910E	710851969802189	2926
MOS2005-06	180.5	27170620S	149075263E	710948569801925	2937
MOS2005-06	188.5	27170707S	149075614E	711044669801642	2935
MOS2005-06	196.5	27170799S	149075963E	711140069801341	2925
MOS2005-06	204.5	27170889S	149080311E	711235469801048	2913
MOS2005-06	212.5	27170989S	149080658E	711330269800724	2908
MOS2005-06	220.5	27171058S	149081013E	711427669800494	2916
MOS2005-06	228.5	27171149S	149081362E	711523169800196	2936
MOS2005-06	236.5	27171237S	149081712E	711618869799911	2957
MOS2005-06	242.5	27171300S	149081976E	711691069799705	2971
MOS2005-06	253.5	27171424S	149082456E	711822369799299	2995
MOS2005-06	260.5	27171500S	149082762E	711906269799051	3006
MOS2005-06	268.5	27171585S	149083113E	712002469798773	3003
MOS2005-06	276.5	27171671S	149083464E	712098569798491	2989
MOS2005-06	284.5	27171762S	149083813E	712193969798195	2974
MOS2005-06	292.5	27171854S	149084162E	712289469797897	2961
MOS2005-06	300.5	27171937S	149084513E	712385569797624	2972
MOS2005-06	308.5	27172024S	149084864E	712481469797340	2986
MOS2005-06	316.5	27172109S	149085215E	712577669797062	2983
MOS2005-06	324.5	27172198S	149085565E	712673269796771	2982
MOS2005-06	332.5	27172285S	149085916E	712769369796487	2994
MOS2005-06	340.5	27172375S	149090265E	712864869796192	3011
MOS2005-06	348.5	27172462S	149090615E	712960769795910	3012
MOS2005-06	356.5	27172551S	149090965E	713056369795619	3024
MOS2005-06	364.5	27172634S	149091315E	713152369795347	3031
MOS2005-06	372.5	27172724S	149091665E	713248169795051	3031
MOS2005-06	380.5	27172811S	149092016E	713344069794767	3024
MOS2005-06	388.5	27172902S	149092368E	713440569794472	3051
MOS2005-06	396.5	27172988S	149092715E	713535369794189	3039
MOS2005-06	404.5	27173073S	149093066E	713631569793911	3049
MOS2005-06	412.5	27173160S	149093416E	713727269793629	3055
MOS2005-06	420.5	27173247S	149093766E	713823169793343	3076
MOS2005-06	428.5	27173336S	149094117E	713919069793051	3089
MOS2005-06	436.5	27173422S	149094468E	714015069792771	3075
MOS2005-06	444.5	27173510S	149094817E	714110569792482	3065
MOS2005-06	452.5	27173599S	149095167E	714206469792193	3060
MOS2005-06	460.5	27173686S	149095517E	714302169791908	3060
MOS2005-06	468.5	27173776S	149095866E	714397769791615	3058
MOS2005-06	476.5	27173859S	149100217E	714493969791344	3060
MOS2005-06	484.5	27173950S	149100567E	714589569791045	3075
MOS2005-06	492.5	27174036S	149100918E	714685669790764	3079
MOS2005-06	500.5	27174124S	149101267E	714781169790478	3081
MOS2005-06	508.5	27174211S	149101618E	714877269790191	3091
MOS2005-06	516.5	27174296S	149101968E	714973069789912	3085
MOS2005-06	524.5	27174388S	149102317E	715068569789612	3083
MOS2005-06	532.5	27174476S	149102667E	715164369789327	3084
MOS2005-06	540.5	27174561S	149103018E	715260369789046	3082
MOS2005-06	548.5	27174648S	149103369E	715356369788762	3082
MOS2005-06	556.5	27174738S	149103719E	715452069788470	3085
MOS2005-06	564.5	27174824S	149104069E	715547969788186	3093
MOS2005-06	574.5	27174928S	149104509E	715668269787846	3067
MOS2005-06	580.5	27175008S	149104767E	715738869787589	3050
MOS2005-06	588.5	27175088S	149105119E	715835169787325	3050
MOS2005-06	596.5	27175173S	149105470E	715931469787046	3066
MOS2005-06	604.5	27175257S	149105820E	716027069786770	3080
MOS2005-06	612.5	27175361S	149110165E	716121569786434	3099
MOS2005-06	618.5	27175445S	149110423E	716191969786164	3106

MOS2005-06	628.5	27175503S	149110876E	716316169785964	3101
MOS2005-06	636.5	27175603S	149111223E	716411069785638	3105
MOS2005-06	644.5	27175696S	149111572E	716506369785335	3128
MOS2005-06	652.5	27175784S	149111922E	716602269785047	3145
MOS2005-06	660.5	27175868S	149112273E	716698269784771	3151
MOS2005-06	668.5	27175957S	149112622E	716793869784480	3162
MOS2005-06	676.5	27180044S	149112973E	716889869784196	3171
MOS2005-06	684.5	27180125S	149113325E	716986169783930	3174
MOS2005-06	692.5	27180220S	149113672E	717081269783622	3175
MOS2005-06	700.5	27180307S	149114023E	717177069783336	3170
MOS2005-06	708.5	27180395S	149114373E	717272969783050	3166
MOS2005-06	716.5	27180480S	149114724E	717368969782769	3157
MOS2005-06	724.5	27180559S	149115077E	717465469782508	3156
MOS2005-06	732.5	27180657S	149115424E	717560469782190	3177
MOS2005-06	736.5	27180699S	149115599E	717608469782054	3194
MOS2005-06	748.5	27180834S	149120124E	717752069781613	3229
MOS2005-06	756.5	27180913S	149120476E	717848469781353	3239
MOS2005-06	764.5	27181002S	149120826E	717944169781062	3232
MOS2005-06	766.5	27181026S	149120913E	717967869780982	3230

**MOSAIC OIL LINE MOS2005-08 November 2005**  
**GDA94 MGA Zone 55 CM 147**  
**AHD71**

MOS2005-08	100.5 27162871S149072590E 710233069813590 2832
MOS2005-08	108.5 27162956S149072941E 710329169813313 2832
MOS2005-08	116.5 27163022S149073297E 710426669813091 2832
MOS2005-08	124.5 27163093S149073650E 710523669812855 2838
MOS2005-08	132.5 27163152S149074010E 710622069812658 2852
MOS2005-08	140.5 27163230S149074362E 710718669812400 2881
MOS2005-08	148.5 27163299S149074718E 710816169812172 2900
MOS2005-08	156.5 27163361S149075075E 710913969811965 2901
MOS2005-08	164.5 27163441S149075427E 711010369811702 2883
MOS2005-08	172.5 27163511S149075781E 711107469811471 2867
MOS2005-08	180.5 27163575S149080138E 711205269811255 2851
MOS2005-08	191.5 27163678S149080624E 711338469810918 2845
MOS2005-08	196.5 27163723S149080847E 711399369810768 2847
MOS2005-08	204.5 27163791S149081202E 711496669810541 2852
MOS2005-08	212.5 27163861S149081556E 711593769810309 2857
MOS2005-08	220.5 27163936S149081910E 711690669810060 2863
MOS2005-08	228.5 27164003S149082267E 711788469809838 2868
MOS2005-08	240.5 27164109S149082798E 711934069809488 2867
MOS2005-08	244.5 27164147S149082975E 711982469809364 2868
MOS2005-08	252.5 27164215S149083331E 712080169809136 2885
MOS2005-08	260.5 27164285S149083685E 712177169808903 2896
MOS2005-08	269.5 27164340S149084092E 712288669808715 2885
MOS2005-08	276.5 27164407S149084401E 712373169808494 2875
MOS2005-08	286.5 27164511S149084840E 712493669808153 2879
MOS2005-08	292.5 27164565S149085107E 712566569807976 2884
MOS2005-08	300.5 27164635S149085461E 712663569807743 2890
MOS2005-08	308.5 27164706S149085816E 712760769807507 2900
MOS2005-08	316.5 27164775S149090171E 712858269807277 2913
MOS2005-08	324.5 27164846S149090526E 712955469807042 2928
MOS2005-08	332.5 27164916S149090881E 713052569806811 2938
MOS2005-08	340.5 27164986S149091236E 713149869806578 2953
MOS2005-08	348.5 27165057S149091591E 713247169806343 2966
MOS2005-08	356.5 27165128S149091945E 713344269806107 2980
MOS2005-08	364.5 27165196S149092300E 713441369805880 2996
MOS2005-08	372.5 27165268S149092656E 713538969805643 3015
MOS2005-08	380.5 27165338S149093010E 713636169805411 3038
MOS2005-08	388.5 27165406S149093366E 713733469805185 3060
MOS2005-08	396.5 27165476S149093721E 713830769804951 3074
MOS2005-08	404.5 27165547S149094076E 713927969804718 3072
MOS2005-08	412.5 27165616S149094431E 714025269804487 3052
MOS2005-08	420.5 27165685S149094786E 714122469804260 3020
MOS2005-08	428.5 27165758S149095141E 714219769804016 2995
MOS2005-08	436.5 27165827S149095496E 714317069803789 2974
MOS2005-08	444.5 27165903S149095849E 714413869803536 2955
MOS2005-08	452.5 27165929S149100216E 714514569803440 2948
MOS2005-08	460.5 27170038S149100561E 714608769803088 2953
MOS2005-08	468.5 27170103S149100917E 714706369802871 2956
MOS2005-08	476.5 27170183S149101270E 714803069802608 2958
MOS2005-08	484.5 27170275S149101619E 714898469802307 2960
MOS2005-08	492.5 27170306S149101984E 714998769802193 2981
MOS2005-08	500.5 27170390S149102335E 715094869801918 2998
MOS2005-08	508.5 27170454S149102691E 715192569801704 3004
MOS2005-08	516.5 27170529S149103045E 715289369801457 3004
MOS2005-08	524.5 27170597S149103401E 715386969801230 2994
MOS2005-08	532.5 27170664S149103756E 715484269801008 2987
MOS2005-08	540.5 27170734S149104111E 715581569800775 2992
MOS2005-08	548.5 27170809S149104466E 715678569800528 3003
MOS2005-08	556.5 27170880S149104820E 715775769800290 2992
MOS2005-08	564.5 27170951S149105175E 715872769800056 2990
MOS2005-08	572.5 27171026S149105528E 715969569799807 2979
MOS2005-08	580.5 27171133S149105875E 716064469799462 2952
MOS2005-08	588.5 27171164S149110240E 716164569799348 2948
MOS2005-08	596.5 27171219S149110598E 716262869799162 2953
MOS2005-08	604.5 27171292S149110952E 716359769798920 2963
MOS2005-08	612.5 27171364S149111307E 716457069798683 2968
MOS2005-08	620.5 27171427S149111664E 716554869798470 2984

MOS2005-08	628.5	27171497S	149112018E	716651869798238	2986
MOS2005-08	639.5	27171611S	149112503E	716784569797866	2986
MOS2005-08	644.5	27171654S	149112725E	716845369797720	2992
MOS2005-08	652.5	27171712S	149113082E	716943369797526	3026
MOS2005-08	660.5	27171788S	149113436E	717040069797273	3044
MOS2005-08	668.5	27171860S	149113791E	717137369797036	3063
MOS2005-08	674.5	27171910S	149114058E	717210569796868	3080

**MOSAIC OIL LINE MOS2005-10 November 2005**  
**GDA94 MGA Zone 55 CM 147**  
**AHD71**

MOS2005-10	100.5 27154622S149064750E 709199169826846 2792
MOS2005-10	108.5 27154691S149065106E 709296569826618 2800
MOS2005-10	116.5 27154759S149065461E 709394069826391 2809
MOS2005-10	124.5 27154830S149065816E 709491269826156 2811
MOS2005-10	132.5 27154900S149070170E 709588269825925 2813
MOS2005-10	139.5 27154958S149070482E 709673669825731 2812
MOS2005-10	148.5 27155038S149070882E 709783369825467 2809
MOS2005-10	156.5 27155111S149071236E 709880269825227 2801
MOS2005-10	164.5 27155176S149071591E 709977769825008 2791
MOS2005-10	172.5 27155249S149071946E 710075069824769 2785
MOS2005-10	180.5 27155320S149072300E 710172069824533 2775
MOS2005-10	188.5 27155391S149072655E 710269369824299 2769
MOS2005-10	196.5 27155461S149073010E 710366469824066 2771
MOS2005-10	204.5 27155528S149073365E 710463869823843 2771
MOS2005-10	212.5 27155601S149073720E 710560969823602 2771
MOS2005-10	220.5 27155646S149074082E 710660369823447 2767
MOS2005-10	228.5 27155736S149074432E 710756069823153 2788
MOS2005-10	236.5 27155807S149074786E 710853169822917 2796
MOS2005-10	244.5 27155880S149075140E 710950269822677 2798
MOS2005-10	252.5 27155948S149075495E 711047569822450 2797
MOS2005-10	260.5 27160019S149075850E 711144869822215 2792
MOS2005-10	268.5 27160090S149080205E 711242069821980 2784
MOS2005-10	276.5 27160128S149080569E 711341869821847 2772
MOS2005-10	284.5 27160182S149080926E 711439969821663 2765
MOS2005-10	290.5 27160243S149081191E 711512369821463 2770
MOS2005-10	300.5 27160352S149081629E 711632369821106 2779
MOS2005-10	308.5 27160419S149081985E 711729869820885 2779
MOS2005-10	316.5 27160486S149082340E 711827169820660 2790
MOS2005-10	323.5 27160569S149082646E 711910969820390 2791
MOS2005-10	333.5 27160651S149083092E 712033069820117 2789
MOS2005-10	340.5 27160701S149083405E 712118969819949 2792
MOS2005-10	348.5 27160767S149083760E 712216369819728 2794
MOS2005-10	354.5 27160816S149084027E 712289569819566 2799
MOS2005-10	364.5 27160928S149084466E 712409469819199 2814
MOS2005-10	372.5 27160998S149084820E 712506769818967 2829
MOS2005-10	380.5 27161066S149085176E 712604169818740 2854
MOS2005-10	388.5 27161136S149085530E 712701269818509 2879
MOS2005-10	396.5 27161208S149085884E 712798269818273 2898
MOS2005-10	404.5 27161278S149090240E 712895569818038 2920
MOS2005-10	412.5 27161348S149090595E 712993069817807 2930
MOS2005-10	420.5 27161423S149090948E 713089769817560 2923
MOS2005-10	428.5 27161480S149091307E 713187969817366 2935
MOS2005-10	436.5 27161554S149091660E 713284869817121 2972
MOS2005-10	444.5 27161627S149092016E 713382169816880 3015
MOS2005-10	452.5 27161696S149092370E 713479369816653 3015
MOS2005-10	460.5 27161765S149092725E 713576569816422 2992
MOS2005-10	468.5 27161840S149093079E 713673469816175 2959
MOS2005-10	476.5 27161908S149093434E 713770969815950 2936
MOS2005-10	484.5 27161975S149093790E 713868469815725 2921
MOS2005-10	492.5 27162049S149094145E 713965569815479 2908
MOS2005-10	501.5 27162118S149094546E 714075569815248 2898
MOS2005-10	508.5 27162183S149094856E 714160469815033 2895
MOS2005-10	516.5 27162255S149095211E 714257669814796 2883
MOS2005-10	524.5 27162325S149095566E 714354969814564 2871
MOS2005-10	532.5 27162396S149095920E 714451869814328 2866
MOS2005-10	540.5 27162474S149100274E 714548869814072 2870
MOS2005-10	548.5 27162533S149100631E 714646869813871 2881
MOS2005-10	556.5 27162604S149100986E 714744069813636 2896
MOS2005-10	564.5 27162671S149101342E 714841669813412 2913
MOS2005-10	572.5 27162741S149101696E 714938769813180 2933
MOS2005-10	580.5 27162813S149102051E 715035969812942 2954
MOS2005-10	588.5 27162881S149102407E 715133469812717 2974
MOS2005-10	596.5 27162953S149102762E 715230569812478 2984
MOS2005-10	604.5 27163019S149103117E 715328069812257 2963
MOS2005-10	612.5 27163086S149103472E 715425369812034 2940
MOS2005-10	620.5 27163148S149103829E 715523069811826 2931

MOS2005-10	628.5	27163218S	149104185E	715620569811595	2922
MOS2005-10	636.5	27163288S	149104540E	715717869811362	2909
MOS2005-10	644.5	27163361S	149104889E	715813669811121	2894
MOS2005-10	652.5	27163421S	149105251E	715912669810918	2907
MOS2005-10	660.5	27163491S	149105606E	716010069810684	2910
MOS2005-10	668.5	27163555S	149105963E	716107869810472	2900
MOS2005-10	676.5	27163623S	149110319E	716205369810245	2891
MOS2005-10	684.5	27163697S	149110672E	716302269809999	2875
MOS2005-10	692.5	27163769S	149111027E	716399269809762	2874
MOS2005-10	700.5	27163845S	149111380E	716496069809511	2906
MOS2005-10	708.5	27163924S	149111732E	716592569809251	2912
MOS2005-10	716.5	27163981S	149112091E	716690869809057	2922
MOS2005-10	724.5	27164052S	149112446E	716788169808822	2942
MOS2005-10	732.5	27164125S	149112800E	716885069808579	2958
MOS2005-10	740.5	27164197S	149113155E	716982269808342	2963
MOS2005-10	748.5	27164252S	149113513E	717080469808154	2968
MOS2005-10	756.5	27164323S	149113868E	717177669807918	2980
MOS2005-10	764.5	27164394S	149114223E	717274869807683	2993
MOS2005-10	772.5	27164473S	149114576E	717371569807424	2998
MOS2005-10	780.5	27164543S	149114930E	717468669807191	2989
MOS2005-10	788.5	27164617S	149115284E	717565669806947	2982
MOS2005-10	796.5	27164692S	149115639E	717662669806698	2975
MOS2005-10	804.5	27164751S	149115996E	717760569806497	2960
MOS2005-10	812.5	27164823S	149120351E	717857769806259	2950
MOS2005-10	820.5	27164897S	149120704E	717954669806015	2945
MOS2005-10	828.5	27164975S	149121058E	718051469805758	2946
MOS2005-10	832.5	27165007S	149121236E	718100369805651	2947



**MOSAIC OIL LINE MOS2005-12 November 2005**  
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MOS2005-12	100.5 27130190S149102818E 715357169876385 2903
MOS2005-12	108.5 27130241S149103177E 715455669876212 2882
MOS2005-12	116.5 27130286S149103536E 715554269876055 2864
MOS2005-12	124.5 27130328S149103896E 715653169875907 2849
MOS2005-12	132.5 27130365S149104258E 715752569875778 2835
MOS2005-12	140.5 27130418S149104616E 715850869875597 2842
MOS2005-12	148.5 27130449S149104978E 715950269875484 2837
MOS2005-12	156.5 27130517S149105334E 716047869875259 2830
MOS2005-12	164.5 27130560S149105695E 716146969875109 2827
MOS2005-12	172.5 27130605S149110055E 716245669874952 2842
MOS2005-12	180.5 27130639S149110416E 716344869874829 2848
MOS2005-12	183.5 27130639S149110554E 716382869874824 2851
MOS2005-12	196.5 27130718S149111138E 716543069874553 2869
MOS2005-12	204.5 27130799S149111492E 716640069874287 2878
MOS2005-12	212.5 27130845S149111852E 716738969874128 2884
MOS2005-12	220.5 27130889S149112212E 716837769873973 2887
MOS2005-12	228.5 27130932S149112572E 716936669873824 2886
MOS2005-12	236.5 27130974S149112933E 717035569873678 2886
MOS2005-12	244.5 27131032S149113290E 717133769873481 2888
MOS2005-12	252.5 27131072S149113650E 717232569873341 2894
MOS2005-12	260.5 27131125S149114009E 717330969873162 2897
MOS2005-12	268.5 27131178S149114368E 717429469872980 2893
MOS2005-12	276.5 27131230S149114726E 717527769872803 2883
MOS2005-12	284.5 27131283S149115085E 717626269872622 2872
MOS2005-12	292.5 27131334S149115444E 717724669872448 2862
MOS2005-12	300.5 27131381S149115804E 717823469872286 2850
MOS2005-12	308.5 27131411S149120166E 717922969872176 2839
MOS2005-12	316.5 27131444S149120527E 718022269872059 2826
MOS2005-12	324.5 27131506S149120885E 718120269871849 2812
MOS2005-12	332.5 27131557S149121243E 718218669871674 2810
MOS2005-12	340.5 27131603S149121603E 718317469871516 2804
MOS2005-12	348.5 27131650S149121963E 718416069871354 2803
MOS2005-12	356.5 27131693S149122323E 718514969871203 2807
MOS2005-12	364.5 27131737S149122683E 718613869871051 2824
MOS2005-12	365.5 27131743S149122727E 718625969871032 2826
MOS2005-12	381.5 27131834S149123447E 718823569870715 2804
MOS2005-12	388.5 27131856S149123765E 718910969870632 2782
MOS2005-12	396.5 27131919S149124122E 719008769870422 2758
MOS2005-12	404.5 27131966S149124482E 719107569870260 2753
MOS2005-12	412.5 27132013S149124841E 719206269870098 2743
MOS2005-12	420.5 27132069S149125199E 719304269869906 2729
MOS2005-12	428.5 27132119S149125558E 719402969869735 2696
MOS2005-12	436.5 27132161S149125918E 719501769869589 2699
MOS2005-12	444.5 27132206S149130278E 719600569869433 2712
MOS2005-12	452.5 27132258S149130637E 719698969869255 2730
MOS2005-12	460.5 27132295S149130998E 719798269869122 2740
MOS2005-12	468.5 27132367S149131353E 719895569868883 2733
MOS2005-12	474.5 27132408S149131622E 719969269868744 2712
MOS2005-12	484.5 27132460S149132073E 720093069868563 2702
MOS2005-12	492.5 27132506S149132432E 720191569868403 2702
MOS2005-12	500.5 27132545S149132793E 720290869868267 2694
MOS2005-12	508.5 27132593S149133153E 720389569868102 2706
MOS2005-12	516.5 27132636S149133513E 720488369867951 2717
MOS2005-12	523.5 27132684S149133827E 720574469867789 2728
MOS2005-12	531.5 27132713S149134190E 720674169867682 2738
MOS2005-12	540.5 27132753S149134596E 720785669867538 2751
MOS2005-12	548.5 27132858S149134946E 720881469867198 2764
MOS2005-12	557.5 27132906S149135350E 720992569867030 2772
MOS2005-12	564.5 27132933S149135668E 721079769866931 2777
MOS2005-12	572.5 27132995S149140025E 721177669866723 2777
MOS2005-12	580.5 27133022S149140387E 721277169866621 2770
MOS2005-12	588.5 27133051S149140750E 721376869866515 2758
MOS2005-12	596.5 27133106S149141108E 721475169866329 2751
MOS2005-12	604.5 27133150S149141468E 721573769866175 2745
MOS2005-12	612.5 27133215S149141825E 721671769865959 2738
MOS2005-12	620.5 27133265S149142184E 721770269865786 2741

MOS2005-12	628.5 27133306S149142544E 721868969865641 2750
MOS2005-12	636.5 27133352S149142904E 721967869865482 2757
MOS2005-12	644.5 27133408S149143262E 722066169865294 2761
MOS2005-12	652.5 27133448S149143622E 722164969865152 2764
MOS2005-12	660.5 27133489S149143984E 722264169865009 2768
MOS2005-12	668.5 27133535S149144344E 722362969864849 2766
MOS2005-12	676.5 27133576S149144703E 722461769864704 2762
MOS2005-12	684.5 27133621S149145063E 722560469864549 2755
MOS2005-12	692.5 27133717S149145415E 722656769864236 2752
MOS2005-12	700.5 27133734S149145780E 722757069864164 2752
MOS2005-12	708.5 27133775S149150140E 722855969864020 2755
MOS2005-12	716.5 27133826S149150499E 722954569863847 2773
MOS2005-12	724.5 27133887S149150855E 723052069863640 2787

**MOSAIC OIL MOS2005 LINE INTESECTIONS November 2005**  
**GDA94 MGA Zone 55 CM 147**

<u>Line name</u>	<u>Stn No.</u>	<u>Line name</u>	<u>Stn No.</u>	<u>Easting</u>	<u>Northing</u>	<u>Elevation</u>
MOS2005-01/696+12		MOS2005-02/481+06		712439.62	6977134.04	321.93
MOS2005-01/601+12		MOS2005-04/425+05		712749.81	6978280.61	323.27
MOS2005-01/496+08		MOS2005-06/359+05		713090.89	6979552.40	302.52
MOS2005-01/409+07		MOS2005-08/358+12		713373.83	6980603.72	298.22
MOS2005-01/324+11		MOS2005-10/466+05		713648.79	6981625.01	296.49
MOS2005-12/343+10		MOS2005-03/446+10		718357.85	6987145.89	280.14
MOS2005-12/530+12		MOS2005-05/452+04		720667.64	6986769.31	273.71

**NEW PERMANENT MARKERS**

Coordinates are MGA94, Zone 55

Elevations are AHD71 using AusGeoid98 N Values

<b>Line Name</b>	<b>Stn</b>	<b>Easting</b>	<b>Northing</b>	<b>AHD</b>	<b>Comments</b>
MOS2005-01	296+6	713739.39	6981969.23	297.08	
MOS2005-01	865	711902.75	6975094.49	298.10	
MOS2005-02	309	710412.67	6977848.77	311.49	
MOS2005-02	982	718332.16	6975030.44	322.35	
MOS2005-03	183	718298.26	6990433.30	262.44	
MOS2005-03	612	718401.23	6985077.29	285.40	
MOS2005-04	251	710689.45	6978990.69	302.03	
MOS2005-05	251	720703.18	6989285.75	268.76	
MOS2005-06	183	710977.85	6980183.43	293.76	
MOS2005-06	622	716236.79	6978612.55	310.14	
MOS2005-08	178	711183.91	6981128.06	285.51	
MOS2005-08	496	715049.17	6980208.30	298.95	
MOS2005-10	500	714066.87	6981528.98	289.70	
MOS2005-10	285	711456.23	6982164.10	276.56	
MOS2005-12	711	722898.03	6986393.62	276.32	
MOS2005-12	186	716420.15	6987479.96	285.45	

## Survey Control

Coordinates are MGA94, Zone 55

Elevations are AHD71 using AusGeoid98 N Values

### DATUM STATION

Station Name	Easting	Northing	Elevation	Comments
69521	705276.824	6994056.867	251.364	1 <sup>st</sup> hor, 4th vert

### BASE STATIONS

Station Name	Easting	Northing	Elevation	Comments
MR17K	720486.884	6989331.293	265.66	Static obs
MOS1	713605.546	6981947.069	298.64	Static obs
MOS2	710765.298	6975745.087	300.09	Static obs
DN01	717749.222	6975235.113	318.00	RT2 obs

### CHECK

Station Name	Easting	Northing	Elevation	Comments
MR17K	720486.870	6989331.337	265.799	AUSPOS
	720486.884	6989331.293	265.662	Static tie
Misclosure	0.01	-0.04	-0.14	

**APPENDIX 2 Documentation**

**3rd Floor  
6-8 Underwood St,  
Sydney NSW 2000  
Australia**

**Phone: (02) 9247 9324  
International Phone: (612) 9247 9324  
Fax: (02) 9241 1655  
International Fax: (612) 9241 1655**

## **A Brief Description of Activities**

### **2D Seismic Survey**

A seismic survey is one method used to acquire information to locate sub-surface geological structures and their characteristics beneath the surface, to assist in defining areas which may contain oil and gas deposits.

Mosaic Oil uses a small explosive charge placed just under the surface to generate sound waves. These sound waves travel through the earth and are reflected back by the underlying geological structures. The reflected waves are detected by small geophones laid out at measured intervals along a prepared track on the surface. This is called the seismic line, and is usually the shortest distance between two points. The signals recorded by the geophones are stored in a computer for later processing into images and maps in Mosaic's Sydney office.

The seismic survey is carried out as a sequence of contiguous operations as follows:

**Line Preparation** – A D6 bulldozer equipped with a stick rake "walks" along the planned line guided by a surveyor and a Global Positioning Satellite receiver (GPS) to remove surface vegetation and decaying timber without disturbing the root stock, followed by a tractor towed slasher, creating a navigable track suitable for 4WD vehicles. Standing trees, shade areas, creeks and rivers are detoured. Where fence lines cross the line, and if an established gate is not within 2 or 3 hundred metres, a temporary gate is inserted, except at strained and boundary fences. In such cases all vehicles make a detour to the nearest gate or point of access.

**Drilling Shot Holes** – Once the seismic line has been prepared holes are drilled at regular intervals by 4WD drilling rigs and immediately loaded with an explosive charge of about 1 kilogram of high speed explosive. The holes are about 8 centimetres in diameter and 25 metres deep. Holes are usually drilled with compressed air and a small amount of water. Occasionally it is necessary to use a biodegradable mud, which is non-toxic. The hole is backfilled or tamped with about 6 metres of cuttings and temporarily sealed at the surface by a plastic cap to prevent cattle and sheep falling down the hole.

**Recording the Data** – Once all of the holes have been drilled and loaded the recording crew lays out the geophones and each shot is fired, one at a time. Under normal conditions the detonation of each shot is almost undetectable.

**Rehabilitation** – Drilled holes are back filled to the surface and sealed with plastic caps. Line markers, detonator wires and other rubbish removed. Any remaining hole cuttings are either spread by a tractor or, if required in cropped areas, removed. Temporary gates are removed and fence lines are made good. If required water diversion banks will be built across the line to prevent it becoming an established drainage channel.

**Time** - How long will the survey take depends on the prevailing conditions. Given good weather the line preparation crew can progress about 6 kilometres a day, each drilling rig can drill about 20 holes a day, and the recording crew progresses at about 8 kilometres a day.

**Environment** - A major objective throughout the survey is to minimise the impact on the environment. Mosaic Oil also aims to ensure that affected areas will naturally rehabilitate, and over a few months become indistinguishable from their surroundings. The environmental objectives are furthermore aimed to protect known sites of natural or heritage significance. To avoid or minimise disturbance to fauna and livestock. To avoid or minimise adverse impact on vegetation, soil, drainage and ground water quality. To avoid or minimise any impact on the homestead and normal farming activities.



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Petroleum and Gas (Production and Safety) Act 2004 –Section 499  
Petroleum Act 1923 – Section 780

### **NOTICE OF INTENDED ENTRY ON LAND**

To the Owners, holders and occupiers of the lands specified hereunder, Mosaic Oil, the holder of ATP 471P (Bainbilla Block), granted under the provisions of "Petroleum and Gas (Production and Safety) Act 2004 –Section 499, Petroleum Act 1923 – Section 780, over the lands specified hereunder by the said holder gives notice that persons so authorised may be entering on the said land during the period (such period not exceeding 6 months) 1 July 2005 to 31 October 2005 to carry out a seismic survey as described on the attached "A Brief Description of Activities", and as shown on the map/diagram attached to this Notice, in accordance with the provisions of the Act and the above Petroleum title.

Any person so authorised will carry a signed authorisation of "Right of Entry" and will produce it on demand by the owner, holder or occupier of the lands specified hereunder.

Any enquires or complaints regarding such entry should be made to Mosaic Oil,

by telephone to:  
02 9247 9424  
or by letter to:  
Mosaic Oil  
6-8 Underwood St  
Sydney, NSW 2000  
(Attn: Mr B. L. Smith)

Signed for the Petroleum Holder:

\_\_\_\_\_ Date:\_\_\_\_\_

B. L. Smith  
Exploration Manager  
Mosaic Oil

THE LANDS

Property Name: \_\_\_\_\_

Signed for the owner, holder or occupier

\_\_\_\_\_ Date\_\_\_\_\_



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Australia**

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Petroleum and Gas (Production and Safety) Act 2004 –Section 532  
Petroleum Act 1923 – Section 79Q

### **COMPENSATION AGREEMENT**

To the owners, holders or occupiers of the property specified hereunder, Mosaic Oil, the holder of ATP 471P (Bainbilla Block), granted under the provisions of “Petroleum and Gas (Production and Safety) Act 2004 –Section 499, Petroleum Act 1923 – Section 780, over the property specified hereunder agrees to the following terms of compensation, representing all of Mosaic Oil’s liability, arising from seismic survey activities

#### *Damage to Crops:*

Pay or provide other compensation as may be listed below, to the owners, holders or occupiers the market value of any crops damaged during the course of the seismic survey. Mosaic Oil will determine and obtain the agreement of the owners, holders or occupiers as to the total area affected. The owners, holders or occupiers will obtain the agreement of Mosaic Oil as to the market value of the crop at harvest time.

#### *Other Agreed Compensation:*

Compensation is to be implemented at the completion of the seismic survey, or in the case of crop value, as soon as is practicable

Signed for the Petroleum Holder:

\_\_\_\_\_ Date:\_\_\_\_\_

B. L. Smith  
Exploration Manager  
Mosaic Oil

Property Name: \_\_\_\_\_

Signed for the owner, holder or occupier

\_\_\_\_\_ Date\_\_\_\_\_





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### **Requirements and other conditions of access**

#### 1. Distances between drilled shot holes and surface facilities

In order to minimise impact and to avoid any damage during the course of conducting its 2005 seismic survey Mosaic Oil will observe the following minimum distances between drilled shot holes and surface facilities. It is expected that each shot hole will be between 18 and 30 metres deep. Irrespective of depth, each hole will be loaded with 1.2 kilograms of explosive, and tamped with at least 6 metres of hole cuttings.

<u>Surface facility</u>	<u>Distance in metres to nearest shot</u>
Houses	60
Water tanks & troughs/sheds/barns	20
Earth dams	30
Oil/gas well & water bore	30

#### 2. Other Requirements and conditions

Signed for the Petroleum Holder:

\_\_\_\_\_ Date: \_\_\_\_\_

B. L. Smith  
Exploration Manager  
Mosaic Oil

Signed for the owner, holder or occupier

\_\_\_\_\_ Date \_\_\_\_\_



Australian Business Number: 56 003 329 084

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**FINAL PROPERTY RELEASE**

**MOS2005 2D SEISMIC SURVEY  
ATP 471P – BAINBILLA & MYALL BLOCKS  
SE QUEENSLAND**

Dear Landowner,

On behalf of Mosaic Oil N.L., I thank you for your cooperation during the recent conduct of the MOS2005 2D Seismic Survey. Restoration work on the lines has now been completed and I trust that your property has been left in satisfactory condition. Although all of the shot holes drilled on your property have been backfilled and sealed, there is a possibility that random holes may partially collapse due to natural circumstances beyond our control. Should you discover any such holes in future please don't hesitate to advise Mosaic and we will endeavour to make the necessary repair as soon as we are able.

To indicate that you are satisfied with the condition that the seismic crew has left your property, please fill in your details and sign where indicated below.

If you have any questions regarding petroleum -related field operations on your property, please don't hesitate to contact me at Mosaic Oil on 02 9255-7307.

Kind regards,

Barry L. Smith  
Mosaic Oil N.L.

---

Signature	Name
Property	Date
Witness _____	Name

(Form G)

"Petroleum Act, 1923 to 1990"

## **RIGHT OF ENTRY ON TO LAND**

(Regulation 17)

\_\_\_\_\_, whose signature is \_\_\_\_\_,

is hereby authorised by Mosaic NL, as Operator, on behalf of the holders of ATP 471P, granted under the provisions of "Petroleum Act, 1923 to 1990", to enter on the lands specified hereunder in accordance with the provisions of the Acts and the above petroleum title during the period 1 December 2005 to 28 February 2006.

Any enquiries or complaints regarding such entry should be made to Mosaic Oil NL by telephone to 02 9247 9324 or by letter to Mosaic Oil NL, 6-8 Underwood St, Sydney 2000 (Attn. B L Smith)

\_\_\_\_\_  
J Saunders  
1 December 2005

For:  
Exploration Manager  
Mosaic Oil NL  
For the Petroleum Titleholder

### The Lands

Collector  
Belara  
Belah  
Warroon  
Brynog  
Formosa Downs  
Ventura Downs  
Miramar  
Cooraki  
Grantham Downs

Mosaic Oil Qld Pty Ltd  
Level 3, 6-8 Underwood Street  
Sydney NSW 2000  
Attention: Barry Smith

Dear Barry,

**Conduct of the MOS2005 Seismic Survey in ATP 470P - Appointment as Agent**

The Operator of ATP 470P, being Origin Energy CSG Ltd ("**Principal**") appoints Mosaic Oil Qld Pty Ltd in its capacity as Operator of ATP 471P ("**Agent**") as their agent, subject to the terms of this letter, to conduct the following authorised activities ("**Activities**") within the area of ATP 470P (Formosa and Redcap blocks):

- conduct a seismic survey to obtain geophysical information;
- negotiate, enter into, perform and discharge such agreements with such other persons (including compensation agreements with owners of the land on which the seismic survey is being carried out) as are necessary to enable the seismic survey (and any related activities) to be carried out; and
- all activities necessary or incidental to the above including any activities necessary to rehabilitate the land.

The Agent's appointment and authority to act as agent of the Principal is limited to the matters referred to in this letter and the Agent will not represent or hold itself out as an agent of the Principal in any other respect nor as a general agent.

The term of the agency contemplated by this letter commences on the date on which the Agent accepts its appointment (by signing this letter) and terminates on the later of:

- (a) the conclusion of the seismic survey;
- (b) the date on which all compensation liability in relation to the Activities have been discharged (whether by agreement or otherwise);
- (c) the date on which all obligations under any agreement entered into by the Agent to enable the seismic survey to be carried out (including any compensation agreements with any landowners) are discharged; or
- (d) such other date as agreed by the parties.

The Agent must, upon completion of the seismic survey, provide a copy of all geophysical information obtained in relation to the Activities to the Principal. The Agent shall be entitled to retain a copy of all geophysical information obtained in relation to the Activities. To the extent that the Principal is or becomes the owner of any geophysical information or other property obtained as a result of the Agent carrying out the Activities, the Principal will, upon the written request of the Agent, transfer such geophysical information and other property to the Agent at no cost to the Agent but the Principal shall have the right to use that geophysical information and other property. Except as otherwise provided in this letter, each of the Agent and the Principal is fully entitled to use any geophysical information obtained as a result of the Agent carrying out the Activities for any purpose.

The Agent makes no representation as to the accuracy, completeness or correctness of the geophysical information. The Principal agrees that it bears all risk associated with the accuracy,

completeness and correctness of the geophysical information and that the Agent will not be liable to the Principal in relation to the geophysical information. The Agent shall be responsible for giving all notices to owners and occupiers of the land within the area of ATP 470P concerning the conduct of the Activities as are required under the Petroleum Act 1923 and Petroleum and Gas (Production and Safety) Act 2004 (Petroleum Legislation). The Agent shall also be responsible for giving on behalf of the Principal prior notice of the conduct of the Activities as required under section 18 of the Petroleum Regulation 2004 and shall provide the Principal with all information as may be necessary to ensure compliance with section 19 of the Petroleum Regulation 2004 upon completion of the Activities.

The Agent must provide the Principal with copies of each compensation agreement with any landowner in relation to the Activities as soon as possible after the execution of such agreements.

The Agent will bear all costs associated with the carrying out of the Activities including, without limitation, the costs associated with discharging any compensation liability of the Principal in relation to the Activities.

The Agent must give the Principal notice of any legal proceedings instituted in relation to the Activities. The Agent may institute and defend or settle any legal proceedings that it considers necessary in connection with the Activities as agent for and in the name of the Principal.

The Agent hereby indemnifies and holds harmless the Principal for any costs, claims, losses or expenses incurred or suffered by the Principal as a result of the Agent carrying out the Activities or arising out of a breach by the Agent of its obligations hereunder except to the extent such costs, claims, losses or expenses arise from the carrying out of the seismic survey within the Mosaic Area, the breach of this agreement by the Principal or the negligent or unlawful act or omission of the Principal. Without limitation to the foregoing, the indemnity in this paragraph shall extend to all liability under any compensation agreement entered into by the Agent and all liability under the Petroleum Legislation incurred by the Principal as a result of the Agent's acts or omissions.

The Principal acknowledges and agrees that provided the Agent complies with the Mosaic Seismic Survey safety management plan and the Agent's environmental management plan in carrying out the Activities, the Agent will be complying with the Principal's applicable safety management plan. The Agent will comply with all reasonable and lawful directions given by the Principal (such directions to be given by the Operator of the ATP 470P Joint Venture).

By signing and returning this letter, the Agent acknowledges that it accepts its appointment as agent of the Principal.

Yours faithfully,

---

Origin Energy CSG Ltd  
Tim Scholefield  
Exploration Manager

Mosaic Oil Qld Pty Ltd (in its capacity as Operator of ATP 471P) accepts its appointment as agent of the Principal on the terms contained in this letter.

---

Signature of Authorised  
Representative

---

Full name of Authorised  
Representative

---

Date

**APPENDIX 3 Pre-survey Risk Assessment**



**Velseis Pty Ltd**  
Quality Data Safely  
SEIS-SAFE

**RISK ASSESSMENT**  
MOS2005 S.S.  
ATP 471P (Bainbilla/Myall Blocks)

**Project: MOS2005 Seismic Survey (ATP 471P-Bainbilla & Myall Blocks)**

**Topic: Site Specific Hazards**

**Venue: Velseis Brisbane.**

**Requested By: Barry Smith**

**Date 28/9/05**

**Time: 10:30**

**Note Taker: David Lester**

**ATTENDEES**

<i>Name</i>	<i>Position</i>	<i>Signature</i>
Barry Smith	Exploration Manager, Mosaic	
John Saunders	Geophysical Consultant, Client Representative	
Tim Beale	Operations Manager, Velseis	
David Lester	HSE Manager, Velseis	
Chris Venning	Crew Supervisor, Velseis	
Mick O'Brian	Drill Supervisor, Seisdrill	
Dudley Horn	Line Prep Supervisor, Aztex	
Rod Heyers (not present)	Surveyor, DSS	

**OVERVIEW**

The risk assessment was conducted to identify the site specific hazards that will impact all areas of operation for the forthcoming MOS2005 Seismic Survey in ATP 471P (Bainbilla and Myall blocks)

Individual contractors are expected to adhere to the controls that have been implemented to reduce the site specific hazards to an acceptable and manageable level.

Contractors will conduct their own operations under their respective HSE – Management System.

**OBJECTIVE**

To identify and control the site specific hazards that will impact all areas of operation for this survey.

Develop and implement controls to reduce these hazards and their potential impact to an acceptable and manageable level of risk.



## SCOPE

### RISK ASSESMENT PROCESS

The client (Mosaic Oil) and contractors (Velseis, Seisdrill, DSS, Aztec,) jointly identify the site specific hazards that could potentially impact on any area of operations for this survey.

Once these risks have been identified controls must be put in place to reduce the risk to an acceptable level before operations commence.

**STEP 1.** Identify the Hazard

**STEP 2.** Identify any controls that are currently in place.

**STEP 3.** Using the Velseis Risk Matrix, take a worst case scenario for an incident that could occur with the identified hazard and score the relevant consequence and probability of this incident occurring with the controls in place.

**STEP 4.** If the identified score in step 3 is **LOW**, and the level of control is regarded as acceptable then the perceived risk can be mitigated by improved awareness of the hazard. A **MEDIUM** score indicates that the controls can be better, and may require short-long term controls being implemented; an example could be engineering changes to machinery. These changes may take time to complete and the current levels of control can be used provided a strict supervision and awareness program is incorporated into the task. Should the current levels of control produce a score in the **HIGH** risk category then no operations can commence that involve this hazard until controls have been implemented that reduce the level to a short term **MEDIUM** and a long term **LOW**.

**STEP 5.** A risk register specific to the project is produced from the outcome of this process and is communicated and signed off by all applicable parties involved with the project. This risk register will form the basis of what requirements and controls contractors must provide whilst operational on this project.

**STEP 6.** Any hazards scoring an unacceptable level of risk must not commence until better controls have been implemented. A remedial work plan (RWP) is compiled to assign responsibility to the relevant parties who are in charge of implementing these new controls.





#### 4.1.3 Risk Matrix

	CONSEQUENCE				INCREASING PROBABILITY				
	People	Assets	Environment	Reputation	A	B	C	D	E
					Never heard of in geophysical operations	Has occurred in geophysical operations	Incident has occurred within our operations	Happens several times per year in our operations	Happens regularly within our operations
0	No health effect/injury	No damage	No effect	No impact	0A	0B	0C	0D	0E
1	Slight health effect/injury	Slight damage	Slight effect	Slight impact	1A	1B	1C	1D	1E
2	Minor health effect/injury	Minor damage	Minor effect	Limited impact	2A	2B	2C	2D	2E
3	Major health effect/injury	Localized damage	Localized effect	Considerable impact	3A	3B	3C	3D	3E
4	Single fatality	Major damage	Major effect	National impact	4A	4B	4C	4D	4E
5	Multiple fatalities	Extensive damage	Massive effect	International impact	5A	5B	5C	5D	5E

**LOW RISK** - Manage for continuous improvements

**MEDIUM RISK** - Incorporate risk reduction measures.

**HIGH RISK** - Intolerable, implement risk reduction measures before operations continue.

**LOW RISK.** Any hazard identified as a low risk can be conducted with the current controls in place. Contractors should strive for continuous improvements in reducing the risk ranking to as low as practically possible.

**MEDIUM RISK.** Operations can take place with a medium risk, however strict supervision is required and authorized permission from the prospect safety manager is required. This is a one time acceptable level and controls must be put into place to reduce the risk ranking to low as soon as practically possible for operations to continue.

**HIGH RISK.** This level of risk is not acceptable and no operations can commence until controls have been implemented that will reduce the risk ranking to MEDIUM for a one time operation or to LOW for a continuous operation.



#### CONCLUSIONS

Items 4.0-4.3 are revised **50 MEDIUM RISK** and the resulting action items must be implemented prior to operations commencing.

**Worst case scenario:** A drill rig, drills through a gas pipe line.  
**Result:** Explosion which causes, multiple fatalities, extensive damage, has a massive environmental impact, & harms the international reputation of the Client and Contractor.  
**Probability:** This incident has occurred in Geophysical Operations.

With correct management and the action items detailed implemented, the following risk reduction can be achieved.

**Risk reduction measures implemented:** All pipelines, power lines, telephone lines, and buildings are correctly identified and all source and receiver points are correctly offset. All these hazards are clearly marked on line maps, and physically marked on the ground. Drilling, preloading and recording operations are given the relevant maps and informed of the markings that have been used.

**Resulting worst case scenario:** No pipelines, power line, telephone line, or building is affected by operations. All receiver, and source points are correctly offset and all contractors are aware of the hazards and can identify them on the ground.  
**Result:** No health effect, injury to any personnel, no assets are damaged, there is no long term environmental impact, and the reputation of the Client and Contractor is maintained.

**Probability:** The worst case scenario has still happened in global geophysical operations, however, as an industry we have learnt from it and now manage the risk correctly.

**Risk rating:** **50 LOW RISK**

The following table summarizes some operational specific hazards that will be encountered by Seisdrill and Velseis. These hazards and controls can act as a guide line for other contractors in their operational specific tasks.

Area of Operation	Item Number	Identified Risks	Controls	Level Of Risk
Drilling	6.1	Muscular sprains, strains during manual handling e.g. handling drill rods and bits, shovelling cuttings	Inductions and relevant training for personnel. Refer Seisdrill SOP's 1 to 17.	1C
Drilling	6.2	Struck-by-an-object type injury e.g. falling objects from mast etc. projectiles	Security of fittings etc to be ensured by regular (daily) safety inspections using a checklist. All personnel to wear appropriate PPE. Training and inductions of personnel. Refer Seisdrill SOP's	1C
Drilling	6.3	Struck by high-pressure air hose if connection fails	Security of fittings etc to be ensured by regular (daily) safety inspections using a checklist. All personnel to wear appropriate PPE. Training and inductions of personnel. Refer Seisdrill SOP48	2C
Drilling	6.4	Electrocution, bushfire as result of	Location of overhead power lines shown at inductions, marked on	2C



		rig contacting overhead power lines.	plans and flagged by survey in field. Lower mast near power lines. Inductions and training. Refer Seisdrill SOP's 1, 16, 46 and 65.	
Drilling	6.5	Slipping, falling type injuries (from platform, uneven terrain).	Training, inductions, Site inspections. Housekeeping. Personnel not to ride on platforms during rig relocation. SOPSD1, SOPSD16, SOPSD33.	1C
Drilling	6.6	Caught in machinery type injuries (rotary table, drill rods).	Caught in machinery type injuries (rotary table, drill rods).	1B
Drilling	6.7	Falling from height (working up drill mast).	Use of safety harness. Only personnel trained in fall arrest procedures allowed up mast.	1B
Explosive Operations	7.1	Uncontrolled detonation of explosives.	All work & equipment complies with the relevant AS2187 & Legislation. All personnel involved with explosives are certificated under the QLD Legislation. Refer SOPEXP-01-06,10.	3B
Explosive Operations	7.2	Theft of explosives.	All work and equipment complies with the relevant AS2187 & Legislation. Daily check on quantities, incident report for any loss and investigation. Magazine must be licensed to hold explosives. If sharing a magazine the explosives must be visibly separated. SOPEXP-02.	3B
Explosive Operations	7.3	Uncontrolled detonation of explosives during preloading.	All work & equipment complies with the relevant AS2187 & Legislation. Refer SOPEXP-03.	1B
Explosive Operations	7.4	Misfire.	All work & equipment complies with the relevant AS2187 & Legislation. Refer SOPPRE-08.	0C
Explosive Operations	7.5	Create misfire by driving over holes etc. Note harm may be later when ground excavated.	All work & equipment complies with the relevant AS2187 & Legislation. Refer SOPEXP-03.	0C
Explosive Operations	7.6	Transportation of explosives.	All work & equipment complies with the relevant AS2187 & Legislation. Explosives are normally carried by a licensed explosives transport company. Refer SOPEXP-01.	0D
Explosive Operations	7.7	Thunderstorms etc.	All work is stopped, explosives put in magazine, and secured. Refer SOPEXP-01-06,10.	0E
Recording	8.1	Heat Stress, injury or illness due to extremes of climate such as intense heat (Heat exhaustion).	Adequate water supplied. Frequent breaks. Covered at induction and regular toolbox topics.	1C
Recording	8.2	Heat exhaustion or stress from working in hot climates.	Adequate water supplied. Frequent breaks. Covered at induction and regular toolbox topics.	1C
Recording	8.3	Manual Handling (All areas).	Selective recruitment. Covered during the induction and also at toolbox meetings. Provide mechanical lifting devices where possible. Use of ergonomic shovels.	2C



Velseis Pty Ltd  
Quality Data Safety  
SEIS-SAFE

**RISK ASSESSMENT**  
MOS2005 S.S.  
ATP 471P (Bainbilla/Myall Blocks)

Recording	8.4	Eye injury. Eye injury from flying debris, splinters etc.	Covered during induction. Appropriate safety glasses/goggles are worn when carrying out tasks.	1C
Recording	8.5	Insect, animal or reptile bite.	First aid on site, site emergency evacuation plan. Appropriate PPE is worn.	1B
Recording	8.6	Creek crossing etc carrying recording equipment. Person injured while crossing a creek or gully.	Issues discussed at toolbox meetings, SLAM task. Refer SCPR-01.	1C
Recording	8.7	Lacerations arising from handling sharp objects.	Personnel are supplied with gloves if required.	1C