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PEL 8

OTWAY BASIN

069A LAND SEISMIC SURVEY

FINAL REPORT

Submitted by

Esso Exploration and Production (Aust) Inc.

1969

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PRIMARY INDUSTRIES AND RESOURCES SA

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TENEMENT: O.E.L. No. 22

TENEMENT HOLDER: Esso Standard Oil (Aust.) Ltd.

REPORT:

PLANS:

REPORT:

PLANS:

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" " "	SP 806	(990(2)-21)
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0003

FINAL SUBSIDY REPORT

069A LAND SEISMIC SURVEY

SOUTH AUSTRALIAN PETROLEUM EXPLORATION LICENCE 8

by

ESSO EXPLORATION & PRODUCTION AUSTRALIA INC.

R. W. WIGGIN
R. L. GRAHAM

August 1969

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ABSTRACT

069A Seismic Survey Report

The 069A land seismic survey was designed primarily to map several prominent high basement features known from previous gravity and magnetic surveys and from sparse seismic coverage. The five features that were investigated are within the boundaries of South Australia P.E.L. 8 and are named Beachport, Lake Eliza, Lucindale, Camelback and Mount Hope.

The seismic traverses showed that the areas of interest are horst blocks in the basement formed by Lower Cretaceous faulting and are similar to, and contemporaneous with, the previously recognized Beachport High. The traverses also helped define the top and bottom of the prospective reservoir unit in the area of the seismic survey, and indicated that this unit tends to drape these highs.

INTRODUCTION

The 069A Land Seismic Survey began on January 22nd, 1969 and was completed on May 12th, 1969. The survey was conducted within P.E.L. 8 in South Australia, where Esso has a farm-in agreement with Alliance Petroleum Australia NL, General Exploration of Australia and Beach Petroleum NL. (See Index Map fig. 1). One hundred and eighty two miles of data were recorded of which one hundred and fifty five miles were 6 fold C.D.P., twenty four miles were 3 fold C.D.P. and three miles were single fold.

INTERPRETATION

(A) OBJECTIVES

The objective of the 069A Land Seismic Survey was to detail certain gravity and magnetic anomalies which were not controlled or were poorly controlled by previous seismic work. These anomalies which were interpreted to be caused by basement highs seemed to offer good potential for hydrocarbon traps.

Existing maps showed major gravity anomalies near Beachport, Lake Eliza and Lucindale (bibliography 1). The Beachport anomaly was interpreted from seismic evidence produced by the EU 68 Marine Seismic Survey (bibliography 2) to be a basement high with the prospective sand pinching out on its flanks. It was hoped that the other gravity highs would also prove to be favourable locations.

A land gravity survey on P.E.L. 8, the Otway EV-68 survey (biblio. 3) confirmed the Beachport, Lake Eliza and Lucindale features and found residual anomalies in the Mount Hope and Camelback areas. The 069A seismic survey was shot over the five gravity features.

(B) REGIONAL GEOLOGY

The survey area is within South Australia P.E.L. 8 in the north-western part of the Otway Basin and is north of the hinge line which marks the boundary of thick Upper Cretaceous deposition. This part of the basin is an onshore extension of the "Crayfish Platform" which is bounded by the Lucindale Lineament to the north and the Creataceous hinge line to the south (see fig. 1). It is a platform only in the sense that Upper Cretaceous and Tertiary rocks are found in relatively thin sequences thickening towards the sea. In Lower Cretaceous times an extensive depositional trough existed in the area.

The northern edge of the Otway Basin is formed by up-faulted basement on a line approximately west-northwest from Melbourne to Cape Jaffa. The basement rocks appear to be mainly metamorphosed Paleozoic sediments related to the formation of the Tasman Geosyncline which involved essentially the filling and deformation of a series of north-south trending troughs. The Otway Basin, which formed in Mezozoic times, however, trends east-west and contains sediments ranging from Mezozoic to Tertiary.

The lowermost unit, the Otway Group, comprises a thick section of non-marine Lower Cretaceous. The bottom member of this Group, the Pretty Hill Sandstone member, is a fresh water fluvial deltaic quartzose sandstone up to 10,000 feet thick. The Pretty Hill sandstone member is unconformably overlain by the finer grained greywacke-shale-mudstone sequence of the Otway Group, and the Lower Cretaceous is overlain discordantly by Upper Cretaceous sediments.

Upper Cretaceous rocks although exceeding 10,000 feet in thickness south of the Upper Cretaceous depositional hinge line are less than a thousand feet thick over most of the survey area. The top of the Upper Cretaceous is usually marked by a gentle angular unconformity.

The Eocene Paleocene sequence is a sandstone deposited in paralic to neritic conditions on a southward dipping surface. These rocks thin by onlap in the shelfward direction, thicken basinward, then thin over a gross regional clinoform to a southern zero edge. The younger Tertiary sequences consist of shales, marls and limestones.

Tertiary intrusive and extrusive rocks are common on the northern and eastern margins of the basin.

(C) EXISTING GEOPHYSICAL INFORMATION

1. South Australia Mines Department Air Magnetic Survey, contracted by BMR, in 1955 and re-interpreted by CGG, in 1965.
2. Esso's EV-68 Gravity Survey consisting of 1044 miles of coverage at ½ mile intervals recorded in 1968-69.
3. South Australia Mines Department single-fold wiggle trace shooting covering approximately 300 miles recorded between 1960 and 1965.
4. Single-fold, analog recording seismic surveys by Alliance Oil Development including the following:
   Kalangadoo - Lucindale, and Penola.
5. The Cape Grimm to Cape Jaffa Marine Single-Fold and Three-Fold Analog Seismic Survey by Hematite Exploration Pty. Ltd. 1965.
6. Offshore Otway Basin Marine Seismic Surveys, Esso Exploration and Production Australia, 1967 and 1968 (EO, EP and ER Surveys).
7. Offshore Otway EU-68 Marine Seismic Survey by Esso on SA/P8 (Aquapulse 12-fold digital recording).

D. HORIZONS MAPPED

The enclosed structure contour depth maps are at a scale of 1:100,000. Datum is sea level. Figure 2 is a reflection time vs depth plot based on the velocity scans that were produced from the 069A Survey data. This time vs depth curve was used to convert the reflection times to depth for all mapped horizons. Considerable scatter was observed between plots of individual velocity scans. No significant regional trend was observed. The curve shown in figure 2 is an average of all scans.

The following maps are presented:

1. Plate 1 Structure on Economic Basement
2. Plate 2 Structure on Pretty Hill sandstone member
3. Plate 3 Structure on Base of Tertiary
4. Plate 4 Shot point map

This discussion gives details of reflection characteristics, data quality and pertinent geologic information relating to the mapped horizons.

1. Structure on Economic Basement, Plate 1

Economic Basement in the survey area may consist of either crystalline rocks or paleozoic metamorphics. Basement at Kalangadoo No. 1 was found to be slightly metamorphosed sandstone sequence of presumed Paleozoic age. Granite outcrops are found a few miles north of the survey area. The seismic event that is mapped as economic basement is usually a high amplitude signal that sometimes has weak unconformable events beneath it and other times is simply the deepest reflection event. The reflection quality is poor to fair.

Plate 1 is a structure map of Economic Basement. The structural style is that of block faulting with the major faults oriented NW-SE. Five significant horst blocks were located and are identified on the map as Lucindale, Camelback, Lake Eliza, Beachport and Mt. Hope. Figure 3 is a composite seismic section of portions of lines 5, 4 and 3 across the Beachport structure. This section is typical of these fault block structures. The three horizons that are mapped in this report are marked on figure 3: Economic Basement, Top Pretty Hill Sand and Base Tertiary.

2. Structure on Pretty Hill Sandstone Member, Plate 2

This horizon is characterized by a high amplitude reflection at an unconformity. Truncation of underlying beds and onlap by younger strata are often observed. The reflection marks the boundary between the mudstones of the Lower Cretaceous Otway Group and the underlying Pretty Hill sandstone member. Reflection identification has been established by correlating the land data with the marine work and tying the Esso Crayfish-1 well. Reflection ties betwen the isolated portions of the 069A survey were verified by reference to earlier seismic work in the area by the South Australia Mines Department and Alliance Petroleum.

Plate 2 shows the structure on the top of the Pretty Hill sand. Closure is mapped over all the anomalies that were shown on the basement map. Two additional closures, Sugar Loaf and Konetta were mapped from the earlier seismic control, however, there is only one seismic line across each anomaly.

The Pretty Hill sand thins abruptly over the basement highs and in the case of Beachport and Mt. Hope it is difficult to distinguish both a Pretty Hill reflection and a basement event. A sand pinch out has been interpreted on the crest of the Beachport structure, however the area wherein the sand is absent could be larger than presently mapped.

The data quality is fair to good and the presented map is considered reliable within the limits of control.

3. Structure on Base of Tertiary Plate 3

The Base of Tertiary is a slight unconformity in the area covered by the 069A survey and is difficult to correlate on the seismic sections. The Upper Cretaceous sedimentary wedge pinches out by onlap on the Lower Cretaceous surface as well as through truncation by Tertiary beds. Further complications are caused by the bedding patterns of the early Tertiary rocks which prograde over both the Lower Cretaceous and Upper Cretaceous subcrop. Well control at Beachport-1 and Robe-1 was an aid in horizon identification. The reflection quality was poor to fair.

The Base of Tertiary horizon does not reflect the buried basement and Lower Cretaceous structures. The principal features of the map are regional thinning to the north-east and a wide trough extending NW-SE through the centre of the area.

4. Shot Point Map Plate 4

This map is a compilation of all Esso and other company shooting including South Australian Mines Department. The location of all permanent markers that were established during the 069A survey is shown on this map as well as the location of the velocity scans.

(E) RESULTS

The 069A seismic survey has shown that the gravity anomalies at Beachport, Lake Eliza, Lucindale, Camelback and Mt. Hope are basement controlled structural features. The basement anomalies are essentially flat-topped horst blocks. Closure on the Pretty Hill sand has been mapped in all five areas. The Base of Tertiary horizon was mapped and found to bear no resemblance to the buried Lower Cretaceous structures.

PLAYBACK

0011

Twenty-three lines totalling 182.39 miles of the 069A survey were processed at the Geophysical Service International's digital processing center in St. Leonards, N.S.W. Final sections were processed using the optimum parameters determined through processing experimentation and data analysis.

Field data recorded on S.I.E. analogue tapes were transcribed to two millisecond sample rate in T.I.A.C. digital format, then processed at four millisecond sample with corrections for near surface statics, amplitude equilization, six fold stack, and time varying deconvolution after stack.

Final sections were plotted as variable density film with time varying filter.

Near surface static corrections were adjusted for surface elevations and shot elevations from uphole times. Reflection times were corrected to sealevel datum using a sub-weathering velocity of 6000 feet/second. Part of line 069A-3 was recorded and processed single fold due to irregular surface terrain.

Computer automated velocity gathers were extracted from the six fold data at intervals of approximately five miles. Velocity functions input for normal moveout correctionswere derived from the gathers and distributed over the line on the basis of single fold section. The velocity functions are identified on the section.

Quality of the final sections graded from fair to good.

BIBLIOGRAPHY

1. Geological Interpretation of Seismic Time Sections in the Gambier Embayment.
K. Rochow, Department of Mines, South Australia.

2. Final Subsidy Report, EU-68 Marine Seismic Survey,
Esso Exploration & Production, Australia, Inc.

3. Final Subsidy Report, EV-68 Land Gravity Survey,
Esso Exploration & Production, Australia, Inc.

FIELD OPERATIONS AND STATISTICAL REPORT

0012

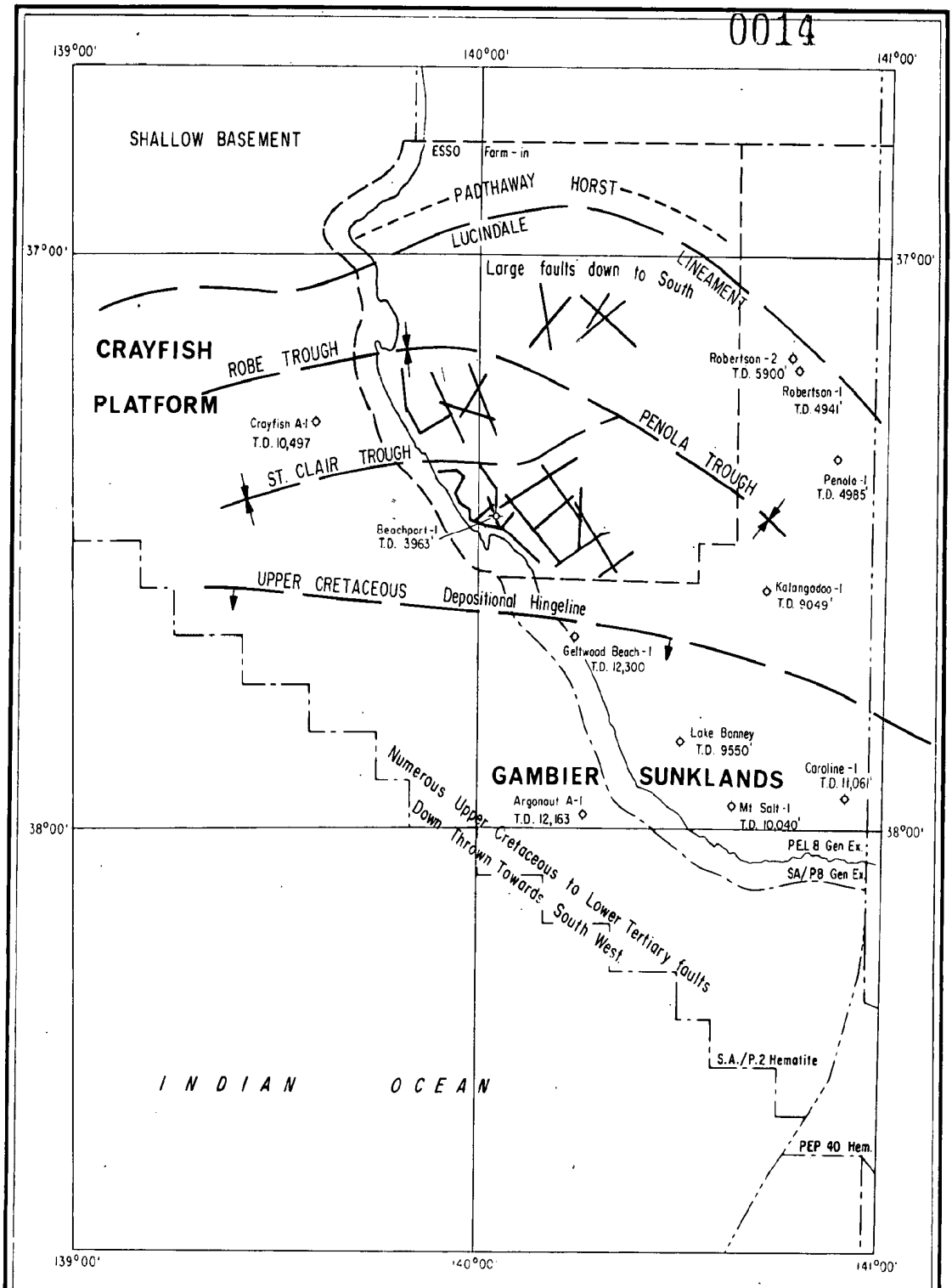
Geophysical Associates Pty. Ltd. has prepared a statistical summary of the field operations which is attached as appendix 1 to this report. An experimental shooting programme was conducted at the start of the survey. The results of these field tests are included in the attached appendix 2.

The following is a list of Line numbers and shot points included in the 069A survey:

Line	From	To
1	1	168
2	169	289
	393	438
3	439	521
	573	601
	385	388
4	290	316
	332	359, 470
5	317	322, 332
	522	572
6	392, 602	634
7	950	978
	979	1024
8	681	773
9	845	899
10	775	844
11	635	679
12	900	949
13	not shot	
14	1189	1239
15	1025	1106
16	1107	1188
17	1534	1635
18	1449	1518
19	1636	1702
20	1395	1448
	1519	1533
21	1240	1308
21A	1309	1394
22	390,504,362	384,550,389
23	1703	1770
24	1953	2037

By R. W. Wiggin
R. L. Graham

R. McWiggin
R. Graham



0 69 A Survey Lines

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

OTWAY BASIN
SOUTH AUSTRALIA

MAJOR STRUCTURAL FEATURES & LOCATION OF 0 69 A LAND SEISMIC SURVEY

TO ACCOMPANY: FINAL SUBSIDY REPORT, 0 69 A

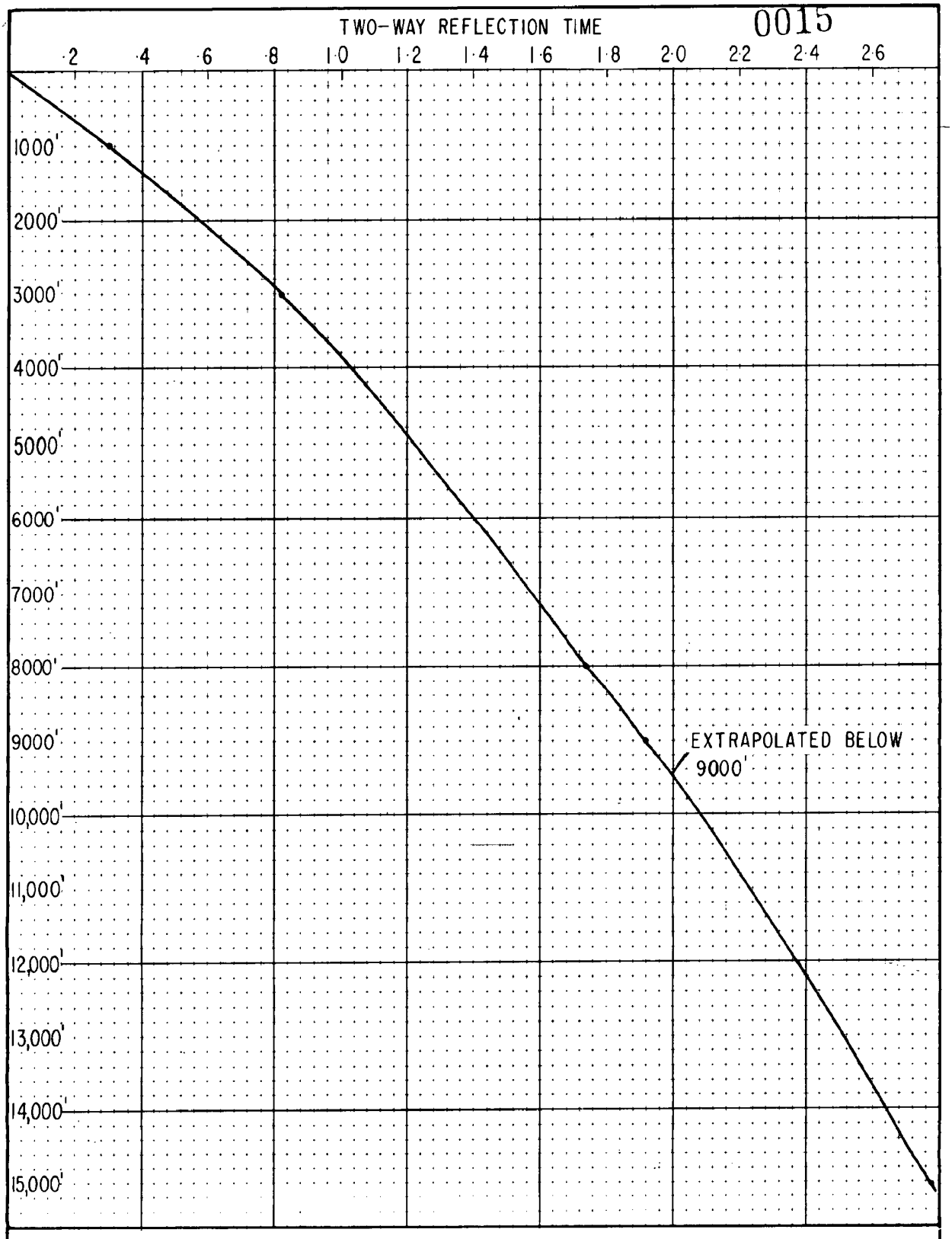
Scale 1:1,000,000

20 10 0 20

Miles

FIG. 1

DWG. 1178/G/1



ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

OTWAY BASIN

TIME DEPTH CURVE

BASED ON VELOCITY SCANS FROM THE 069A LAND SEISMIC SURVEY IN P.E.L.8 & S.A./8 SOUTH AUSTRALIA

TO ACCOMPANY: FINAL SUBSIDY REPORT
069A LAND SEISMIC SURVEY

FIG. 2

DWG.1178/G/2

DIGITAL BAND PASS FILTERING
FREQUENCY (Hz)
RECORD
TIME
GSI DIGITAL PROCESSING CENTRE
SYDNEY, N.S.W., AUSTRALIA
1. SAMPLE PERIOD 4 ms. 2. TAR: B= db., α= db./sec.
3a. AUTOMATED RESIDUAL STATICS Gate= to ms.
3. NMO Equalization gate 1000 to 3000 ms.
4. DECON 30 pts. 4 ms. dec., Design Gate 400 — 1950 ms.
" " 1750 — 2725 "
" " 1980 — 3500 "
No. of gates/trace 3
5. DIGITAL FILTER 35 pts. 4 ms. dec., — Hz.
6. DPS ■, OWBS □, TVD ■, DCN □, ARD □, AR2 □, DGF □, TVF ■, M-4 □
7. TIAC Req. 1121 8. Hold Tape 4032 9. P/B Gain 8 db.
GSI Input Crew 851 Date APR '69
ESSO STANDARD OIL (AUST) PTY. LTD.
SYDNEY, N.S.W., AUSTRALIA
AREA OTWAY LAND LINE 069A-5
RECORDING PARAMETERS S.P. off GPI
Source DYNAMITE Charge Size 5 lbs./Hole
5 Holes Inline Int., Hole Depth 40 ft
Cable Length 4600 ft., Group Interval 200 ft
S.P. Interval 400 ft
24 Seises 10 ft Interval
Recording Filters 16 - 78
G.A.I. Field Crew 6 Date MAR'69
DESIGN GATE FOR AUTO. RES. STATICS
AV. TOTAL CORRECTION
HOLE DEPTH
ELEVATION PLOTTED
LINE 069A - 5
VEL. 069-2A
069A-4
069A-3
AUTO RES STATICS
6 FOLD STACK
TVF
15-55 Hz 400 ms
10-30 " 1000 "
10-30 " 2000 "
Dwg 1178/G/3
FIG. 3

ENV 990.

Appendix 1

0016

OTWAY 069A LAND SEISMIC SURVEY

OEL 22 SOUTH AUSTRALIA

ESSO STANDARD OIL (AUSTRALIA) LTD

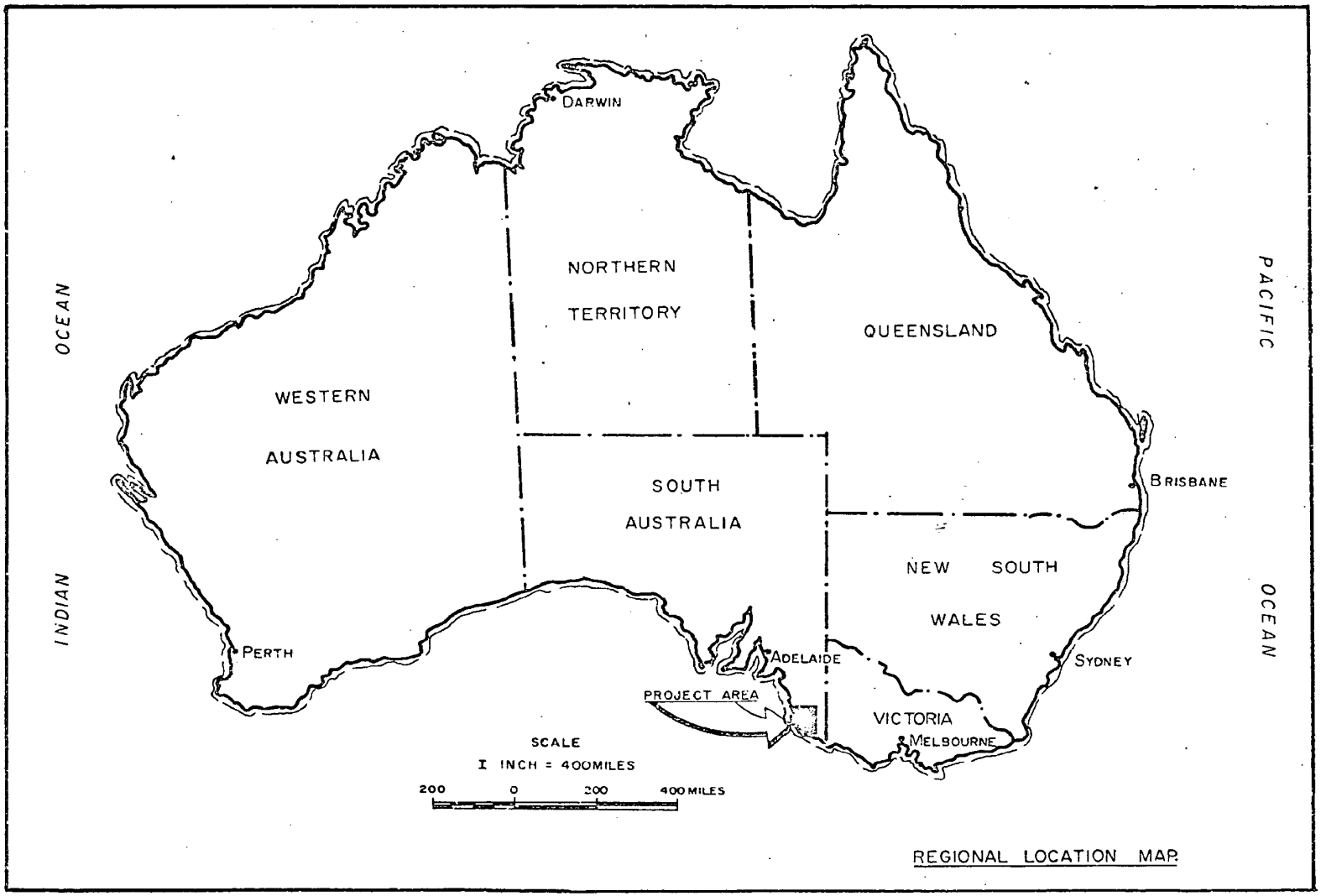
BOX 4047 G.P.O. SYDNEY, N.S.W.

GEOPHYSICAL ASSOCIATES PTY. LTD.

399 HONOUR AVENUE, GRACEVILLE, QUEENSLAND.

July, 1969

0017



REGIONAL LOCATION MAP

Figure 1

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ILLUSTRATIONS

I OPERATIONAL REPORT

0020

(a) Location and Date

Esso Exploration (Australia) Ltd., Box 4047 G.P.O. Sydney, N.S.W. selected Geophysical Associates Pty. Ltd., 399 Honour Avenue, Graceville, to conduct land seismic survey 069A in Oil Exploration Lease 22, South Australia.

The GAPL crew departed Brisbane January 16, 1969 field operations commenced January 22. The programme was completed May 12, 1969, the crew returning to Brisbane May 17. Recording totalled 1113 hours during which time 1855 locations were shot yielding a subsurface coverage of 182.39 miles. (Figure 2)

Area 069A is located between 139°45' to 140°30' east longitude, 37°00' to 37°35' south latitude. A completely self contained camp was positioned on the "Woakwine" property of Mr. A. McCourt some four miles north of Beachport. The camp and the entire operation were supplied from Millicent (22 miles) and Mt. Gambier (55 miles) on good paved roads.

(b) Access and Clearing

The area is cut diagonally by the Prince's Highway, this, together with a grid of good sealed or gravel roads provided easy access to all parts of the project. The camp was not shifted during the survey thus drives of almost 40 miles were necessary to the distant portions of the project.

A Caterpillar D7 tractor supplied by Mr. A. McCourt was utilized for line clearing. This machine worked a total of 233 hours and was held in standby for 129 hours. In addition, a grader was used for 12½ hours in March for levelling on lines 2 and 5. Dozing was necessary on lines 3, 7, 8, 10, 15, 16 and 24.

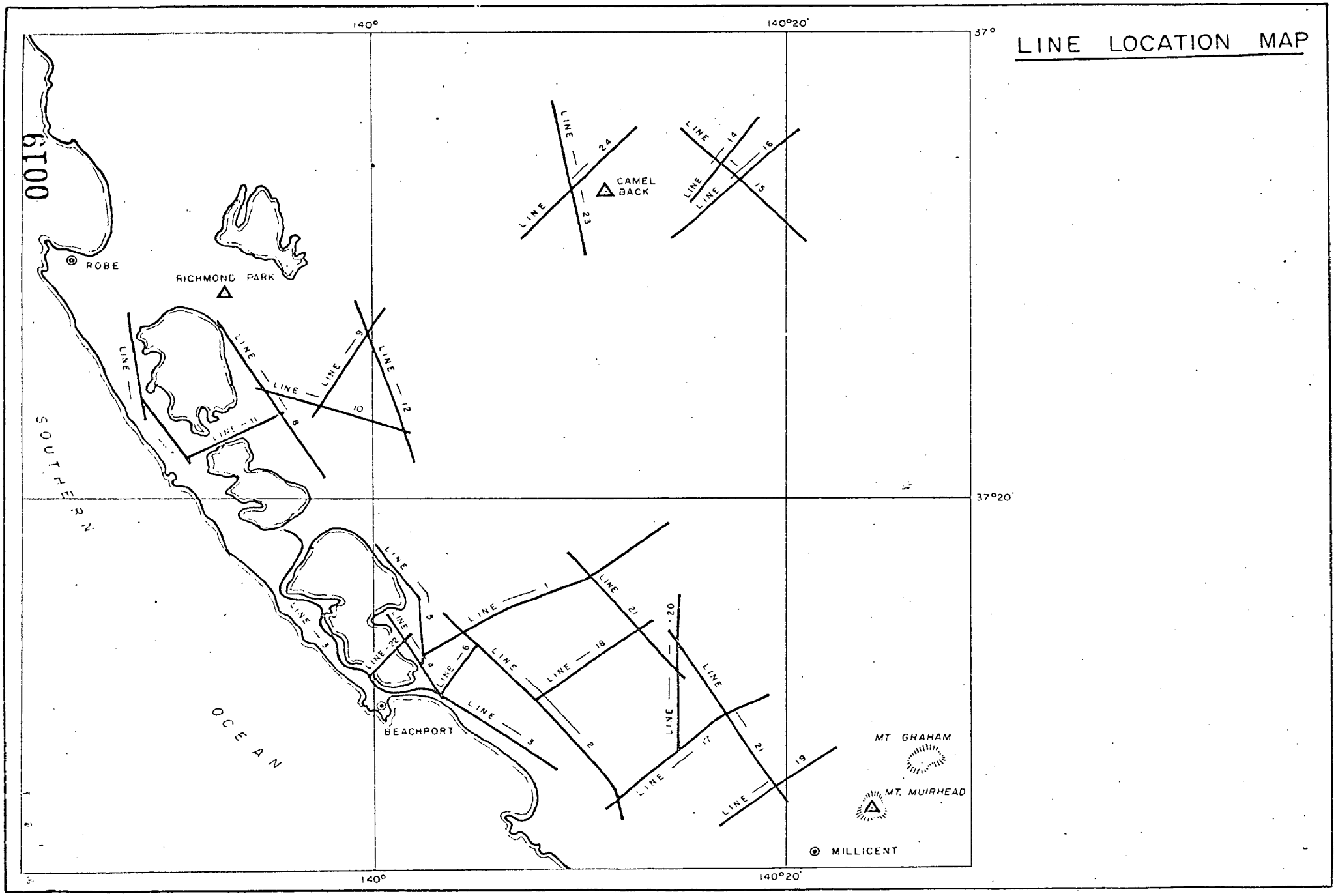

LINE LOCATION MAP
140°
140°20'
37°
37°20'
6100
ROBE
RICHMOND PARK
CAMEL BACK
SOUTHERN OCEAN
BEACHPORT
MT GRAHAM
MT. MUIRHEAD
MILLICENT
LINE 1
LINE 2
LINE 3
LINE 4
LINE 5
LINE 6
LINE 7
LINE 8
LINE 9
LINE 10
LINE 11
LINE 12
LINE 13
LINE 14
LINE 15
LINE 16
LINE 17
LINE 18
LINE 19
LINE 20
LINE 21
LINE 22
LINE 23
LINE 24

Figure 2

(c) Surveying

All lines were surveyed with a Topcon AG-2 theodolite. Surveying was greatly facilitated by bench marks established during the EV68 Land Gravity Survey (Esso April, 1969) which had been tied vertically to the South Australia Land Department third order survey and horizontally to trigonometrical stations at Mt. Muirhead, Camelback, Richmond Park, Mt. Benson, Elgin, Furner and Bradleys Hill. Accuracy was held to better than $\pm$ 1 ft vertically and 300 ft horizontally. All intersections, line-ends and at five mile intervals along traverses were permanently marked with a five foot steel picket and aluminium tag.

A final shot point map, 1:100,000 scale showing shot point and permanent mark locations was submitted to Esso on completion of the survey.

(d) Drilling

Soon after the start of the seismic survey it became obvious that the three drills contracted for in the original agreement would be totally inadequate. Five hole patterns were found necessary. Drilling was slow and difficult with hard limestone stringers, shell beds, layers of sand and strong flows of underground water that dictated the use of large amounts of drilling mud, bran and other additives. Early in February four extra drills (three from GAPL in Brisbane and one from Thompson Drilling, Millicent) were added to the drilling complement. In addition, two water trucks were hired locally.

No trouble was experienced moving the drills in the area with the possible exception in the sand hills along the beach front and on line 2 where a deep bog caused the abandonment of the line.

A line by line description of the drilling encountered follows:

Line 1 - Mainly hard limestone stringers accompanied by unconsolidated sands. Occasional

layers of hard sandstone were also encountered. Holes were drilled to a depth of 50 ft. Solid surface conditions at the beginning of the line deteriorated westerly.

Line 2. Hard limestone, unconsolidated sand and clay were encountered. The presence of loose rocks near the surface aggravated drilling conditions in the central section of the line. The average drilling depth was 50 ft. A reasonably level hard surface presented no difficulties.

Line 3. Beach sand, shell beds and limestone stringers prevailed. Sand hills around Lake George hampered severely the mobility of the rigs. Drilling depth was increased in the sand hills to place charges on a level plane.

Line 4. Strata consisted of limestone, shell beds and sand, with occasional cavities being encountered. The holes were drilled to a depth of 50 ft. No mobility difficulties arose.

Line 5. Limestone, clay and sand strata with occasional cavities were the main features. Drilling depth remained at 50 ft, and a hard level surface was favourable.

Line 6. Poor drilling conditions persisted with the presence of numerous cavities in hard limestone stringers, shell beds, sand and clay. Hole depths were mainly 50 ft but a few were left shallower as a result of the adverse conditions. Surface conditions were good.

Line 7. Limestone, sand and clay with occasional shell beds. The hilly terrain made drilling difficult although mobility was unaffected. The hole depths were increased with elevation increases in hilly areas.

Line 8. Drilling conditions slightly better, but reasonable quantities of bran and mud still required, in sand and limestone encountered.

Line 9. Some hard drilling was experienced. Bran and mud was consistently used, holes drilled to 50 ft. Fairly level terrain and reasonable surface was encountered.

Line 10. Fair drilling conditions, mainly limestone, sand and clay. No surface difficulties were experienced, with holes at 50 ft depth.

Line 11. Hilly terrain with some very soft areas in the west hampered operations. Drilling through shell beds, limestone and numerous cavities coupled with the presence of underground water further contributed to the poor drilling conditions. Holes were drilled to 50 ft, with a few shallower exceptions.

Line 12. Drilling conditions similar to line 9. Hole depths were 50 ft. Some surface undulations but no difficulty in moving was experienced.

Line 14. Fair drilling on this line. On the sand hills five hole patterns to 50ft depth were drilled with single holes on the level portions to depths of 100-120 ft.

Line 15. Sand dunes still encountered, mainly in central and south eastern sections. Drilling conditions varied from poor to fair. Five hole patterns at 50 ft depth in sand dune areas and single holes of 80-100 ft in level areas were utilized.

Line 16. Similar conditions to line 14. Fair drilling conditions experienced. Sand dunes in north eastern sections necessitated 5 hole patterns at 50 ft. The remainder of the line being shot using single holes of 80-100 ft.

Line 17. Consisted mainly of limestone, sandstone and sand strata. Hole depths remained at 50 ft.

Line 18. Limestone, clay and shell beds persisted. Holes remained at 50 ft depths. The surface was mainly level with some rolling hills in the central and western areas.

Line 19. Limestone, clay and some sand continued to be present. Hole depths were 50 ft.

Line 20. Drilling conditions were fair on this line. Still chiefly limestone and sand, with hole depths of 50 ft. Surface conditions were hard and level presenting no difficulties.

Line 21. Fair drilling encountered, stratigraphically similar to line 20 with the presence of occasional shell beds. Hole depths still 50ft and the surface hard and fairly level.

Line 22. Poor drilling was experienced here. Cemented shell beds and sand coupled with the soft surface of Lake George were contributing factors. Patterns were 5 holes at 50 ft depth. Mobility was restricted and a bulldozer was required to pull drills from bogs.

Line 23. Poor drilling conditions existed. Hard limestone lenses and numerous cavities necessitated the use of large quantities of mud and bran to maintain circulation. The five hole patterns were drilled to a depth of 50 ft. Hilly but hard surfaced terrain was experienced.

Line 24. Poor drilling conditions continued. Five holes at 50 ft depth, except for S.P.'s 2000-2020 where 20 hole patterns at 20 ft depths were used.

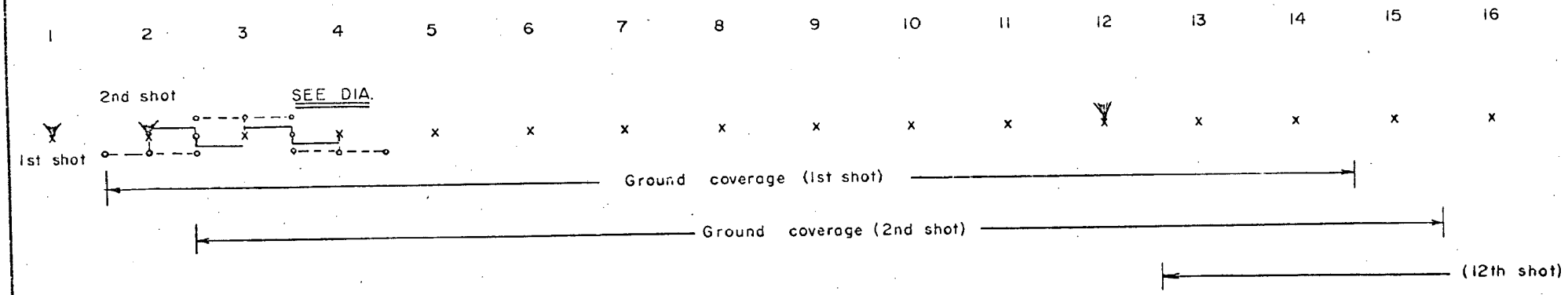
(e) Shooting

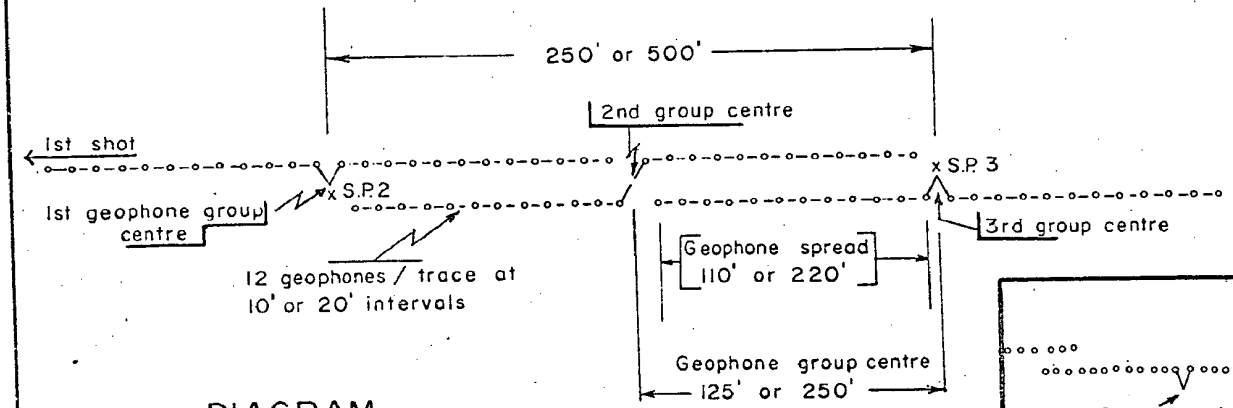
Holes were extremely difficult to load throughout the area. The use of a preloader was mandatory as holes left for only a few minutes after drilling tended to block off. Two additional shooters were employed in this capacity from February 1 to the end of the contract.

Early in February, following several misfires in deeper holes where the powder burnt rather than detonated, the crew was visited by explosives experts from I.C.I. Melbourne. Their advice, which became the general practise was that all charges be doubly primed with RDX boosters. This reduced the misfire rate but added appreciably to the loading time and the explosives cost.

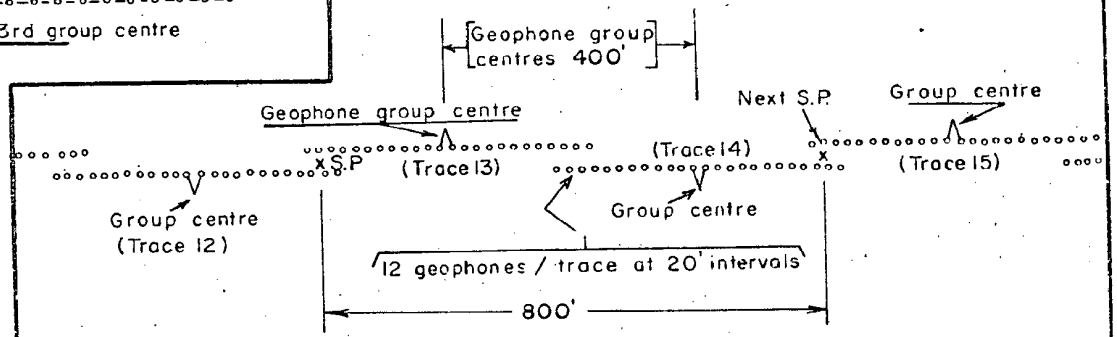
The average charge was five pounds per hole to the total drilled depth. After shooting,

SHOT POINT AND SPREAD DIAGRAMS





DIAGRAM



SPLIT SPREAD

Figure 3

all holes were sealed at the surface with Dresser 8" aluminium hole plugs. Subsequent to the completion of the survey, an investigation by Esso personnel disclosed that many of the hole plugs had failed in the soft near surface sand; others had been removed by local scavengers in an attempt to recover detonator wires. GAPL personnel required almost two weeks to remedy the situation.

(f) Recording and Record Quality

A test programme was initiated on January 23 and concluded on January 24. This programme commenced with a standard noise spread, and continued on through various shot hole patterns, shot depths, charge sizes, geophone arrays and spread lengths.

A shot point configuration of five 40 ft holes with 50 ft separation and 5 pounds of powder per hole was selected as the optimum shooting method.

Spread configuration (Figure 3), was standardised at 200 ft intervals between geophone centres with 24 series-parallel geophones per trace at 10 ft intervals. End on shooting techniques were utilized with 400 ft spacing between shot points, each shot point coinciding with alternate geophone centres, the shot point 400 ft offend.

The instruments used during the survey were manufactured by Dresser Industries, Houston, Texas. They comprised one 24 channel SIE PT-100 portable transistorized seismic amplifier system,a SIE model VRO-6 camera and a SIE PMR 20 magnetic recording system. The monitor seismogram and FM tape were recorded simultaneously at each shot point with filter settings of out-out and later 16-78. A quality control playback record was made with filter settings of 16-78.

Record quality ranged from poor to good and was dependant largely on the subsurface conditions. It was generally found that where sand hills were encountered quality deteriorated.

Line by line recording techniques and record quality were;

Line 1. Record quality was fair to good using an out-out filter setting and 400 ft spacing between shot points and 200 ft between group centres.

Line 2. Quality remained fair to good using the same spread configuration. The northern end of the line was deleted due to boggy surface conditions.

Line 3. Here, record quality and production were good. The line was shot using 500 ft spacing between shot points and 250 ft between geophone centres until shot point 394. Shot point 395 to 601 was recorded using a split spread configuration of 800 ft between shot points and 400 ft between geophone centres. A lay down filter setting of 16-78 was used to reduce noise level. Record quality was poor to fair over sand hills. Three profiles of 4600 ft - 4800 ft in length were recorded at the north end of the line. Shots were taken from each end of the cable for two way coverage.

Line 4. Record quality was fair to good. Shot point spacing of 500 ft was used.

Line 5. Record quality was good using a 400 ft spacing between shot points with a filter setting of 16-78 cps.

Line 6. Record quality was fair to good using a 500 ft shot point spacing and filter settings of 16-78 cps.

Line 7. Parts of line 7 produced records of very poor quality. The poor character of these records was presumably due to the large depth of sand encountered, limestone caverns and the possibility of the presence of faulting in this area. Four holes were drilled at S.P. 950 to test record quality. These holes were fired at 40/42 ft and 150/158 ft and yielded poor results in both cases. The line was shot using a shot point spacing of 500 ft.

Line 8. The record quality varied from very poor to fair. The reason for the very poor quality could be explained by the fact that for most of its length the line runs at the base of a long low range of hills where there is a possibility of faulting. This line was shot using 500 ft spacing between shot points.

Line 9. The quality of seismograms for the entire line were of very poor quality. Like line 8 this could possibly be contributed to limestone caverns and poor near surface conditions.

Line 10. Record quality was fair to poor, the line being shot at shot point spacing of 500 ft.

Line 11. Seismogram quality ranged from poor to fair. Unconsolidated near surface conditions contributing to weak signal return. This line was shot using 500 ft shot point spacing.

Line 12. The line which intersects line 9 at the north end produced records of the same poor quality. Again it is presumed that poor returns were due to the presence of limestone caverns and poor near surface conditions. This line was recorded using 500 ft shot point spacing.

Line 14. Part of the line was shot using the 500 ft spacing between shot points and the remainder was shot using a spacing of 250 ft between shot points. This was used in an attempt to enhance shallower recorded data. Data was greatly affected by topography and near surface conditions. Seismograms recorded over consolidated sand dunes were of very poor quality due to poor energy returns. In the level areas single holes with 20 pound charges were used with fair results.

Line 15. Record quality ranged from fair to very poor. The reasons being the same mentioned for line 14. 500 ft spacing between shot points was used with five hole patterns on the sand dunes and single holes on level areas.

Line 16. Again the record quality was affected by topography and near surface conditions. The quality was fair to the south west but

gradually deteriorating as the recording progressed north east. The same spread configuration was used as on lines 14 and 15.

Line 17. Record quality was fair to poor. The line was shot using a three hole pattern at 100 ft spacing and 10 ft geophone spacing and 500 ft between shot points.

Line 18. Record quality was fair to poor. Spread configuration was the same as line 17.

Line 19. Record quality varied from fair to poor. Spread configuration remained at 3 hole patterns at 100 ft spacing and 10 ft geophone spacing, shot points located 500 ft apart.

Line 20. Record quality was fair to poor. The line being shot using a 3 hole pattern at 100 ft spacing with shot points located 500 ft apart.

Line 21. Record quality varied from poor to fair, part of the line was shot using 5 hole patterns at 50 ft separation. The remainder was shot using 3 hole patterns at 100 ft separation. Shot points were located at 500 ft intervals.

Line 22. Record quality varied from fair to good. Shot points located at 500 ft intervals.

Line 23. Record quality was fair to good with horizons continuous throughout. This line was recorded using 125 ft group separation and shot points located at 500 ft intervals.

Line 24. Record quality was fair to poor and recorded events semi-continuous. The south west portion of the line was recorded using 125 ft group spacing and shot points located every 500 ft. The remainder of the line being shot using 125 ft group separation with 20 hole patterns 20 ft deep located every 500 ft.

(g) Computation

The observed reflection times were corrected to a reference datum plane of sea level by

the standard uphole method employing the formula:-

$$Tc = 2\left(\frac{Es - Ds - Ed}{Vd}\right) + Tuh \quad \text{where,}$$

Tc = Total correction to datum
Es = Shot point elevation
Ds = Depth to top of charge
Ed = Datum plane elevation
Vd = Datum correction velocity (6000'/sec)
Tuh = Uphole time

Shallower shots when taken were corrected to the deepest recording in each hole by a factor equal to the difference in uphole times.

First breaks were plotted for all shot points and where necessary corrections for weathering were applied. Total corrections obtained from the above formula were used to correct traces and correction for alternate traces averaged. Data was then forwarded to Esso for further reduction.

Weekly statistical reports were phoned to Esso, Sydney each Thursday morning. Monthly progress reports with a completed statistical sheet and shot point location map were forwarded to the Bureau of Mineral Resources, Canberra and to Esso Sydney.

GEOPHYSICAL ASSOCIATES PTY.LTD.

J. L. Lackey

II EQUIPMENT

Recording

1 Toyota Land Cruiser truck with stainless steel recording cabin

1 set 24 channel Southwestern Industrial Electronics PT-100 transistorized seismic instruments

1 SIE model VRO-6 oscillograph

1 SIE PMR-20 FM magnetic recording system

2 SIE SCD-2000 BA multicap blasters

14 Portable CDP reflection cables, 1260 ft long 3 take-outs per cable, 420 ft between take-outs

996 HSJ 14 cps reflection geophone series mounted 12 per string with end take-out and 20 ft geophone intervals

3 Communication radios

1 CDP rollalong switch

1 Shooting truck Toyota Land Cruiser FJ-45, four wheel drive, with 350 pound dynamite storage and 100 ft hole loading poles

6 1200 ft shooting cables

2 Cable and geophone trucks, Toyota Land Cruiser equipped with cable and geophone storage

1 Portable powder magazine, 4000 pound capacity

1 Detonator storage box

Preloading

1 Preloading vehicle Ford F-750 4 X 4, with 800 gallon water tank, 2000 pound dynamite storage and 100 ft hole loading poles

1 Preloading vehicle - Toyota FJ-45 short wheel base four wheel drive with dynamite and cap storage and 100 ft hole loading poles

Surveying

1 Toyota Land Cruiser FJ-45, four wheel drive equipped with auxiliary fuel tanks, and instrument storage

1 K&E transit and tripod

1 Topcon AG-2 transit and tripod

2 Survey rods

1 Survey chain

Auxiliary survey equipment

Drilling

4 Ford T-750, 6 wheel drive trucks each mounted with Mayhew 1000 heavy duty drill, WCQ air compressor, 5" x 6" Gardner Denver mud pump, 300 ft Mayhew regular drill stem, water injection piping

2 Ford F-800 4 wheel drive trucks, each mounted with Mayhew 1000 heavy duty drill, WCQ air compressor, 5" x 6" Gardner Denver mud pump, 300 ft Mayhew regular drill stem, water injection piping

1 Chevrolet Army Blitz, 6 wheel drive, mounted with Mayhew 1000 heavy duty drill, WCQ air compressor, 5" x 6" Gardner Denver mud pump, 300 ft Mayhew regular drill stem, water injection piping

1 Water truck - Bedford with 1000 gallon tank

6 Water trucks, F-750 4 wheel drive with 1000 gallon flatbed tanks and auxiliary 2" centrifugal water pumps

1 spare water truck - Bedford with 1000 gallon tank

1 spare water truck - Bedford with 1200 gallon tank

1 Tool Push vehicle FJ-45 Toyota, 4 wheel drive with auxiliary maintenance equipment

Supply

1 Toyota Hi-Ace supply truck

Office

0033

1 Toyota Crown station sedan, party chief vehicle

1 Toyota Hi-Ace party manager - permit vehicle

Camp

1 Kitchen-utility caravan with dining and storage annexes, completely equipped

1 Office caravan, fully equipped with Rotolite printer, light table, all drafting and computing gear

1 Executive trailer for supervisory and client use

1 workshop trailer fully equipped with spare parts, tools, welding gear

1 set of sleeping tents (8) fully equipped

1 600 gallon water storage tank

1 500 gallon trailer-mounted water tank

1 Lister HA-3 18 KVA trailer- mounted lighting plant

1 Lister 8 KVA standby power plant.

III PERSONNEL

Party Chief	T.A. Magub
Party Manager	B.M. Warr
Chief Computer	A. Gell
Computers	P. Baxter
	A. Koger
Instrument Supervisor	H. Holm
Observer	L. Kruk
Junior Observer	P. Wade
Shooters	A. Norris
	M. Edginton
	A. Bencsevich
Surveyor	J. Baxter
Drill Supervisor	N. Griffin
Drillers	B. Handley
	T. Brady
	R. Desjardines
	F. Ward
	D. McKenna
	C. Cunningham
	D. Herbert
	B. Harvey
	R. Thompson
Mechanic	C. Ogden
	G. Bashford
Cook	E. Hoare

In addition to the key personnel listed above the following helpers were employed -

Rodmen	2
Recording helpers	6
Cable truck drivers	2
Supply truck driver	1
Drill helpers	7
Cook's helper	1
Camp Attendant	1

Administrative and field supervision GAPL - J.H.B. Campbell

Geophysical supervisor Esso - W.R. Stone

IV STATISTICS

Profiles recorded	1,759
Number of shot points	1,855
Test shots	15
Number of shots	1,810
Field recording hours	878.5
Field travel time	130
Other hours -	
Weather time	10
Equipment time	20
Camp moves	0
Holidays	0
Standby	71.5
Total recording hours	1,113
Number of days worked	97
Holes per day (average)	19.12
Holes per recording hour	2.11

Miles traversed (subsurface) -

Line #1 = 13.00 mi	Line #9 = 5.65 mi	Line #17 = 10.10 mi
2 = 12.93 mi	10 = 7.17 mi	18 = 7.07 mi
3 = 15.57 mi	11 = 4.61 mi	19 = 6.79 mi
4 = 5.84 mi	12 = 5.18 mi	20 = 6.98 mi
5 = 5.43 mi	14 = 5.05 mi	21 = 15.48 mi
6 = 3.76 mi	15 = 8.21 mi	22 = 3.00 mi
7 = 7.99 mi	16 = 8.21 mi	23 = 6.66 mi
8 = 9.44 mi		24 = 8.27 mi
		Total =182.39 mi

Miles per day (average)	1.88
Explosives - pounds (Anzite and Geophex)	45,150
Pounds per shot (average)	25.02
Detonators	15,340
RDX Boosters	9,256

Cordtex (feet)	3,000
Magnetic tapes	1,923
Bulldozing-work hours	233
standby hours	129
Grader work hours	12.5

Drill # 1

Holes	1,255
Footage	61,527
Drilling hours	1,002.5
Travelling hours	154.75
Standby	25.0
Penetration ft/hr average	61.37

Drill # 2

Holes	1,589
Footage	75,490
Drilling hours	1,043
Travelling hours	156
Standby	32.5
Penetration ft/hr average	72.38

Drill # 3

Holes	1,270
Footage	66,225
Drilling hours	997
Travelling hours	128.75
Standby	41.5
Penetration ft/hr average	66.42

Drill # 4	
Holes	1,003
Footage	52,158
Drilling hours	923
Travelling hours	138.75
Standby	0
Penetration ft/hr average	56.51
Drill # 5	
Holes	999
Footage	51,175
Drilling hours	813.25
Travelling hours	117.05
Standby	20
Breakdown	8.75
Penetration ft/hr average	62.93
Drill # 6	
Holes	875
Footage	46,820
Drilling hours	694.25
Travelling hours	125.25
Standby	10
Penetration ft/hr average	67.44
Drill # 7 Thompson Drilling	
Holes	1,228
Footage	65,810
Drilling hours	911.75
Travelling hours	144.25
Standby	0
Penetration ft/hr average	72.18

Drilling Supplies

Bran (bags)	1,853
Mud (bags)	3,349
Starter bits $5\frac{5}{8}$"	12
Blades $4\frac{1}{2}$"	343
Blades $4\frac{3}{4}$"	429
Blades $5\frac{1}{8}$"	186
Blades $5\frac{5}{8}$"	42
Insert bit $5\frac{1}{8}$"	5
Rock bits $4\frac{1}{2}$"	34

FINAL SUBSIDY REPORT, 069A SURVEY, P.E.L. 8, SOUTH AUSTRALIA

Appendix 2

069A EXPERIMENTAL SHOOTING

On January 22 and 23, 1969, an experimental program was conducted in O.E.L. 22 South Australia in the 069A land seismic survey. This program consisted of four individual tests, and the following outline presents the information desired, tests carried out, and the results obtained.

Test #1 This test consisted of a noise analysis to determine the different types of noises present in the area, and also the optimum shooting depth.

Tb accomplish this, an L spread was laid out with 18 geophones in line and 6 broadside to the shot holes, and a geophone spacing of 40 feet. The shot holes were drilled at such spacings to give continuous sub-surface coverage with a depth point every 20 feet until a maximum surface offset of 5040 feet was attained.

The shot holes were drilled to a depth of 90 feet, and shot at depths of 90 feet, 70 feet, 50 feet and 30 feet.

The results of this noise analysis showed that the noises present were all in line, and consisted of a ground roll with a velocity of approximately 3400 Fps and a wavelength of 310 feet, plus a range of noises with wavelengths varying from 85 feet to 390 feet.

The results of the optimum shooting depth tests indicated that the 50 foot to 30 foot shot depths gave much cleaner signals.

Test #2 and #3 The purpose of these tests were to determine the amount of noise attenuation obtained with three different in line geophone arrays.

This was done by laying out four parallel 12 channel spreads with a configuration of 400 foot group intervals and an in line offset of 400' - 4800'. The four individual cables had the geophone laid out as follows:-

Cable #1 -- 24 phones clustered

Cable #2 -- 24 phones inline, 115' array, 5' interval

Cable #3 -- 24 phones inline, 230' array, 10' interval

Cable #4 -- 24 phones inline, 460' array, 20' interval.

The 230' array gave the best results in noise attenuation, indicating that the noise wavelength spectrum was composed predominantly of wavelengths between 50 and 230 feet.

Test #4 The purpose of this test was to determine the optimum shot hole pattern that would give the greatest noise cancellation.

This was done by laying out two parallel 12 channel cables with the same spread configuration as was used in Tests #2 and 3. The geophone configuration consisted of a 24 phone cluster on one cable and a 24 phone - 230 foot inline array on the second cable.

The shot hole patterns attempted were as follows:-

1 3 inline holes, 50' apart, 40' deep, 5# per hole

2 5 inline holes, 50' apart, 40' deep, 5# per hole

3 3 inline holes, 100' apart, 40' deep, 5# per hole

The results of this test indicated that the 5 hole pattern gave the best noise cancellation, particularly with respect to the ground roll noise.

This experimental program consumed a total of two days, and the following configurations were decided upon to give the best quality results:-

1. Geophone Configuration

   24 - 14 cycle 70% damped geophones laid out inline with a 10 foot phone interval and covering 230 feet on the ground.

2. Spread Configuration

   An inline offset of 400' - 4800'. This is a geophone station spacing of 200 feet.

3. Shot Point Configuration

   A 5 hole inline shot pattern with 50 foot hole interval, 40 feet deep, and loaded with 5# per hole.

It should be pointed out that these recording parameters were adjusted from area to area depending upon the local noise and sub-surface conditions that were present, but that the greatest percentage of the program was recorded with the parameters determined from this experimental program.

139° 45'
140° 00'
140° 15'
140° 30'
36° 45'
37° 00'
37° 15'
37° 30'
280,000
300,000
320,000
340,000
360,000
460,000
440,000
420,000
400,000
380,000

P.E.L. 2 Planet

S O U T H

A U S T R A L I A

CAMELBACK

LUCINDALE

LAKE ELIZA

BEACHPORT

MT. HOPE

Robe - 1
T.D. 4376

Bowaka - 95

Bowaka - 167

Lake George

Beachport 1
T.D. 3965

Beachport 2
T.D. 2300

ESSO Farm - In

MILLICENT

Mount Barr

Mount McIntyre

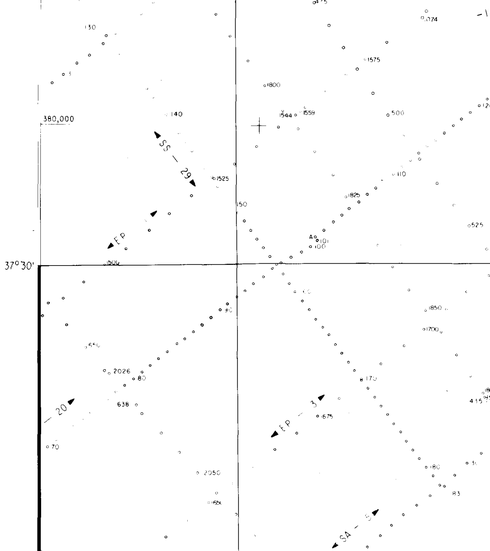
Kalangadoo
T.D. 9049

E.P.P. 2 Hematite

SA/P8 General Exploration

P.E.L. 8 General Exploration

MAP INDEX



LEGEND

EU - 6	ESSO EU SURVEY
EP - 6	ESSO EP SURVEY
069 A - 6	ESSO 0.69 A SURVEY
M - SB	S.A. MINES DEPT. SB LINE
B	ALLIANCE B LINE
○	Drilling Location
☼	*Dry and abandoned with a show of gas.*
☼	Dry and abandoned well
◦	Seismic shot point
U / D	Fault - "D" - Downthrown side
——	Petroleum Tenement boundary

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

THE OTWAY BASIN

SOUTH AUSTRALIA

STRUCTURE CONTOURS ON ECONOMIC BASEMENT (Pre-Cretaceous Surface)

CONTOUR INTERVAL : 400 FEET

DATUM: SEA LEVEL

Scale 1:100,000

2 1 0 2 4

MILES

AUTHOR R.W. WIGGIN

DRAFTED BY M.R. CHÂTENAY

TO ACCOMPANY FINAL SUBSIDY REPORT

DATE: SEPTEMBER 1969

SHEET 6 — 0.69 A SEISMIC SURVEY

PLATE I

Dwg 1178/G/4

ENV 990-1

139° 45' 140° 00' 140° 15' 140° 30'

36° 45'

37° 00'

37° 15'

37° 30'

PEL 2 Planet

SOUTH AUSTRALIA

SUGAR LOAF

CAMEL BACK

LUCINDALE

LAKE ELIZA

KONETTA

BEACHPORT

MT. HOPE

MILLICENT

Robe - 1 T.D. 4376

Bowaka - 95

Bowaka - 167

Lake George

Beachport - 1 T.D. 3681

Beachport - 1 T.D. 2300

Kalangadoo T.D. 9049

Mount Mcintyre - 1

Mount Burr

Cheese Factory - 1

ESSO Farm - In

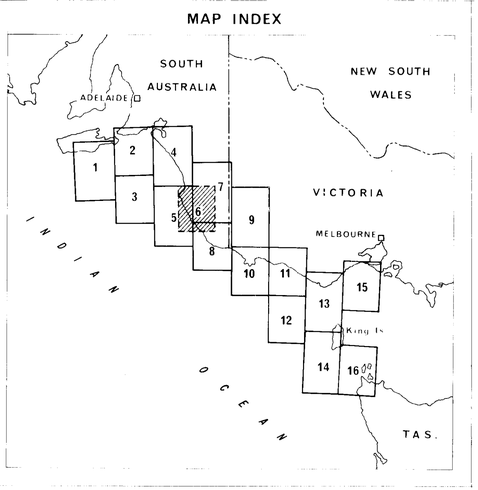
SA/P8 Alliance

EPP 2 Hematite

SA/P8 General Exploration

P.E.L. 8 General Exploration

MAP INDEX



LEGEND

EU - 6	ESSO EU SURVEY
EP - 6	ESSO EP SURVEY
069 A - 6	ESSO 0 69 A SURVEY
M - SB	S.A. MINES DEPT. SB LINE
B	ALLIANCE B LINE
○	Drilling Location
☼	Dry and abandoned with a show of gas.
☼	Dry and abandoned well
◦	Seismic shot point
U / D	Fault - "D" - Downthrown side
— — —	Petroleum Tenement boundary

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

THE OTWAY BASIN

SOUTH AUSTRALIA

RECEIVED 23 SEP 1969 DEPT. OF MINES REGISTRY

STRUCTURE MAP ON TOP OF PRETTY HILLS SS. MBR. (Crayfish Sand)

CONTOUR INTERVAL : 200 FEET

DATUM: SEA LEVEL

Scale 1:100,000

2 1 0 2 4

MILES

AUTHOR R.W.WIGGIN

DRAFTED BY: M.R.CHÂTENAY

TO ACCOMPANY: FINAL SUBSIDY REPORT

DATE: SEPTEMBER 1969

SHEET 6 0 69 A SEISMIC SURVEY

PLATE II

ENV 990-2

Dwg 1178/G/5

139° 45'
140° 00'
140° 15'
140° 30'
36° 45'
37° 00'
37° 15'
37° 30'
280,000
300,000
320,000
340,000
360,000
460,000
440,000
420,000
400,000
380,000
360,000

PEL 2 Planet

S O U T H

A U S T R A L I A

Bowaka - 95

Bowaka - 167

Robe - 1
T.D. 4376

Lake George

SEOS Beachport 1
T.D. 2963

BEACHPORT

ESSO Farm-In

MILLICENT

Mount Burr

Mount McIntyre - 1

Kalangadoo
T.D. 9049

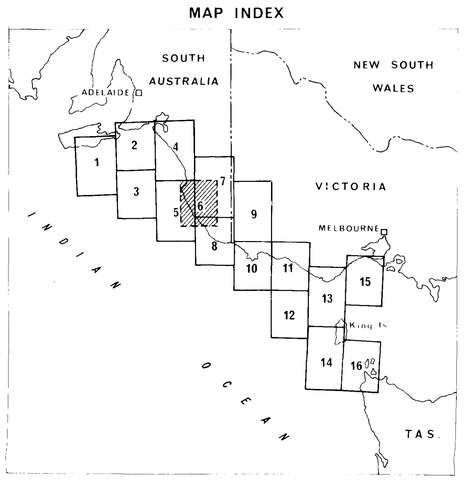
BEACH Gelrose Beach - 1
T.D. 12,300

EPP 2 Hematite

SA/P8 General Exploration

P.E.L. 8 General Exploration

MAP INDEX



LEGEND

EU - 6	ESSO EU SURVEY
EP - 6	ESSO EP SURVEY
069 A - 6	ESSO 0 69 A SURVEY
M - SB	S.A. MINES DEPT. SB LINE
B	ALLIANCE B LINE
○	Drilling Location
☼	Dry and abandoned with a show of gas.
✧	Dry and abandoned well
◦	Seismic shot point
U / D	Fault - "D" - Downthrown side
— — —	Petroleum Tenement boundary

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

THE OTWAY BASIN

SOUTH AUSTRALIA

STRUCTURE MAP ON BASE OF TERTIARY

CONTOUR INTERVAL : 200 FEET

DATUM: SEA LEVEL

Scale 1:100,000

2 1 0 2 4

MILES

AUTHOR: R.W. WIGGIN

DRAFTED BY: M.R. CHATENAY

TO ACCOMPANY: FINAL SUBSIDY REPORT

0 69 A SEISMIC SURVEY

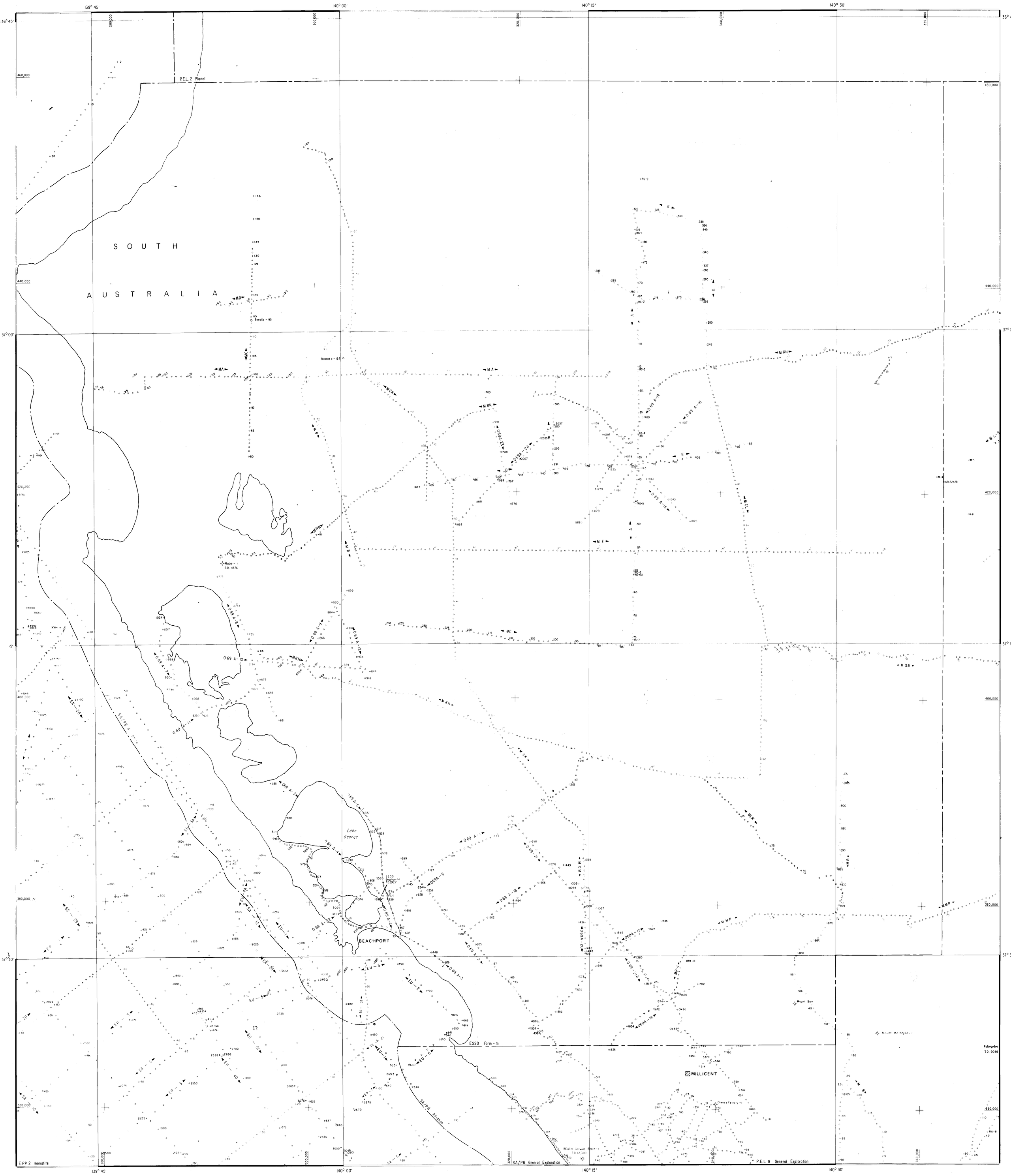
DATE: SEPTEMBER 1969

SHEET 6

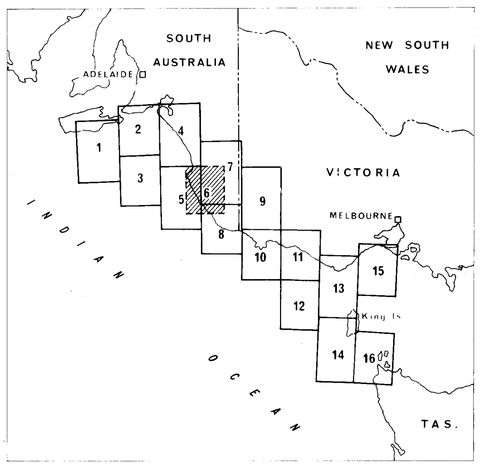
PLATE III

Dwg 1178/15/6

ENV 990-3



MAP INDEX



LEGEND

EU - 6	ESSO EU SURVEY
EP - 6	ESSO EP SURVEY
069 A - 6	ESSO 0 69 A SURVEY
M - SB	S.A. MINES DEPT. SB LINE
B	ALLIANCE B LINE
○	Drilling Location
✲	Dry and abandoned with a show of gas
✲	Dry and abandoned well
○	Seismic shot point
U / D	Fault - "D" - Downthrown side
— — —	Petroleum Tenement boundary

VELOCITY SCANS

069 A LINE NO.	SHOT POINT NO.
1	26, 61, 100, 121, 156
2	187, 265, 432
3	466, 503
5	326
7	1023
8	695, 726, 756
10	806, 838
11	665
15	1041
16	1116, 1152
19	1643, 1684
20	1528
21A	1342
23	1709
24	1692, 2034

PERMANENT MARKERS

069 A LINE NO.	SHOT POINT NO.	069 A LINE NO.	SHOT POINT NO.
1	1	10	839
1	56	14	1189
2	262	14	1239
2	209	15	1025
2	438	15	1070
3	439	15	1106
3	469	16	1107
3	385	16	1188
3	388	17	1534
4	290	17	1579
5	522	19	1636
5	572	19	1702
7	952	20	1395
7	978	21	1308
7	979	21	1309
7	1024	21	1394
8	681	23	1703
8	712	23	1752
8	773	23	1770
9	886	24	1953
10	805	24	2037

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

THE OTWAY BASIN

VICTORIA - SOUTH AUSTRALIA

SHOT POINT MAP

CONTOUR INTERVAL : 200 FEET

DATUM : SEA LEVEL

Scale 1:100,000

2 1 0 2 4

MILES

AUTHOR R.W. WIGGIN

DRAFTED BY : M.R. CHÂTENAY

TO ACCOMPANY : FINAL SUBSIDY REPORT

DATE : SEPTEMBER 1969

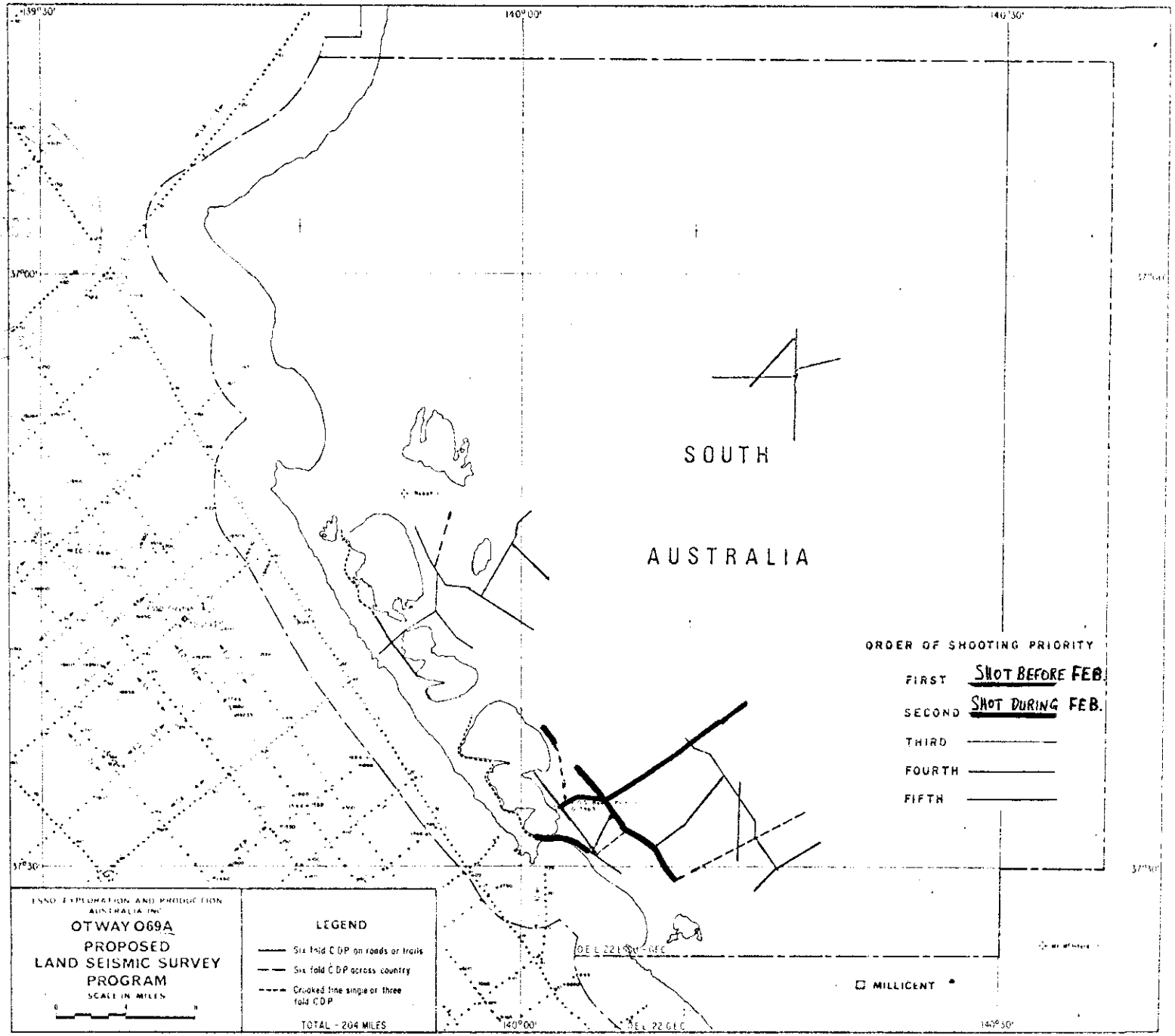
069 A SEISMIC SURVEY

SHEET 6

PLATE IV

Dwg 1178/G/

ENV 990



JAN. 1969

DWG 85C/OP/14

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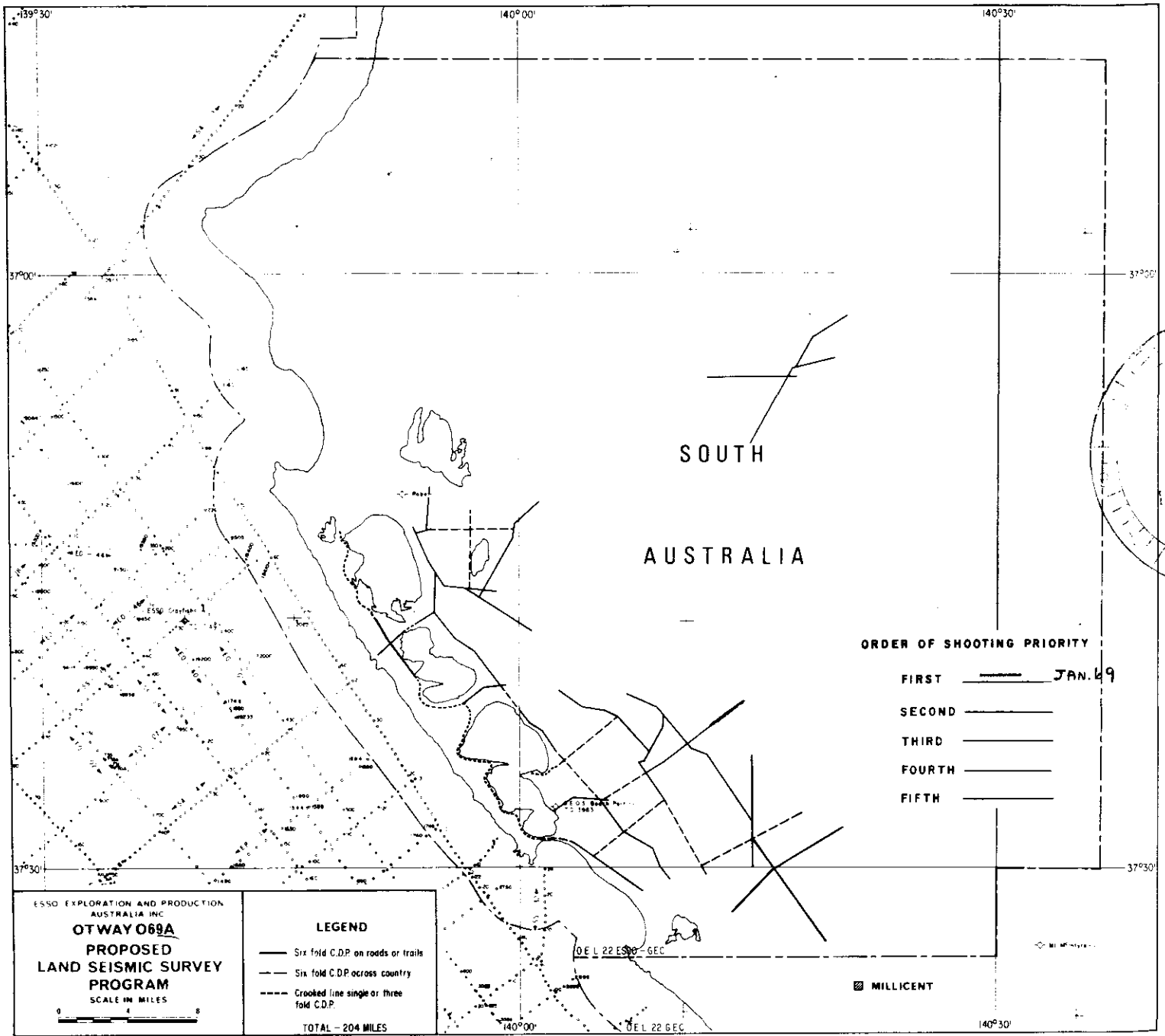


ENV 990

ENV 990-6

— GEOPHYSICAL ASSOCIATES INTERNATIONAL —
SEISMIC PRODUCTION REPORT

NOTES

* Denotes check totals which should appear on print in RED INK

☐ Denotes refraction statistics.

BASIC CREW TIME: Carry Over ____ Current ____ Total Hours ____ Contract ____ Carry Over ____

PROFILES

Item	ON HAND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1		LINE 1	LINE 1	LINE 1	LINE 2	LINE 2		LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-2	LINE-3	LINE-3			
		51	56	60	65	68	79 88	96 105	113 122	131		129 139	142 151	153 162	169 178	186 199		No Shooting	207 216 225	226 235 245	248 257	No Shooting	No Shooting	267 276	285 328 27	393 94 405	413 422	432 437	443 455	466 480 81			
		52	57	61	66	69	80 89	97 106	114 123			130 140	143 152	154 163	170 179	187 200			08 17	27 36 46	49 58			68 77	86 26 25	95 96 06	14 23	33 438	44 56	67 82 83			
		53	58	62	67	74	81 90	98 107	115 124			132 141	144	155 164	171 180	188 189 201			09 18	28 37 247	50 –			69 78	81 24	97 07	15 24	34	45 46 57	68 69 84 85			
		54	59	63	–	75	82 91	99 108	116 125			133	145	156 165	172 181	190 191 202			10 19	29 39	51 66			70 79	88 23 22	98 08	16 25	35	47 58	70 71 86 87			
		55		64	–	76	83 92	100 109	117 126			134	146	157 166	173 182	192 203			11 20	30 40	52 61			71 80	289 21	399 400 09	17 26	436	48 49 59	72 73 88			
					70	77	84 93	101 110	118 127			135	147	158 167	174 183	193 194 204			12 21	31 41	53 62			72 81	Lines 4,5 332 20	01 10	18 27	Line-3	50 60 61	74 89 90			
					71	78	85 94	102 111	119 128			136	148	159	175 184	195 205			13 22	32 42	54 63			73 82	331 19	02 03 11	19 29	439 442	51 62	75 76 91 92			
					72		86 95	103 112	120			137	149	160	176 185	196 197 206			14 23	33 43	55 64			74 83	330 18	404 412	20 431	40	52 53 63 64	77 78 93			
					73		87	104	121			138	150	161	177	198			215 224	234 244	256 265 266			275 284	329 317		421	441	464 465	479 494			

RECORDER

Item	ON HAND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	REFLECTION	REFRACTION	TOTALS
No. of shot points		5	4	5	7	7	17	17	16	1	–	12	11	15	17	21	155		19	22	19	–	–	18	21	20	19	11	23	29	352		
Profiles recorded *		5	4	5	7	7	17	17	16	1	–	12	11	15	17	21	155	–	19	21	18	–	–	18	21	20	17	11	23	29	348		
To date		5	9	14	21	28	45	62	78	79	79	91	102	117	134	155	155	155	174	195	213	213	213	231	252	272	289	300	323	352	352		
Miles sub surface coverage		.3785	.3028	.3785	.5299	.5299	1.2869	1.2869	1.2112	.0757	–	.9084	.8327	1.1365	1.2869	1.5897	11.7335	–	1.4383	1.6654	1.4383	–	–	1.3626	1.5897	1.5140	1.4383	1.2617	2.1781	2.7463	28.3722		
Total depth shots		6	4	5	10	7	17	17	16	2	–	12	11	15	17	21	160	–	19	23	19	–	–	18	21	20	17	11	24	29	381		
Wx and other																		–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Miles to field		5	5	5	5	5	5	4	3	½	–	1	1½	2	15	15		–	9	7	4	–	–	4	4	5	15	13	10	5	–		
Miles sub-surface coverage to date		0.3785	0.6813	1.0598	1.5897	2.1196	3.4065	4.6934	5.9046	5.9803	5.9803	6.8887	7.7214	8.8569	10.1438	11.7335	11.7335	11.7335	13.1718	14.8372	16.2755	16.2755	16.2755	17.6381	19.2278	20.7418	22.1801	23.4478	25.6259	28.3722	28.3722		
Hours travel		½	½	½	½	½	½	½	½	½		½	½	½	1	1½	8½	–	1½	1	½	–	–	1	1	1½	1	½	½	½	17½		
Hours field		9½	9½	9½	9½	9½	9½	9½	9½	9½	10	9½	9½	9½	9	8½	141½	–	8½	9	9½	–	–	9	9	8½	9	9½	9½	9½	232½		
Hours lost – Weather																		–	–	–	–	–	–	–	–	–	–	–	–	–			
Hours lost – Equipment																		–	–	–	–	–	–	–	–	–	–	–	–	–			
Hours ~~moving camp~~ STAND BY																		10	–	–	–	10	10	–	–	–	–	–	–	–	30		
Hours holidays																		–	–	–	–	–	–	–	–	–	–	–	–	–			
Total hours/day *		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	150	10	10	10	10	10	10	10	10	10	10	10	10	10	280		
To date		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	150	160	170	180	190	200	210	220	230	240	250	260	270	280	280		

DRILLS

Driller	Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	REFLECTION
No. 1 DRILLER	Holes drilled	17	4	11	12	2	21	10	12	9	9	12	21	12	3	11	168	9	18	10	7	5	9	10	8	13	20	18	22	7	324
	Holes washed out	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	5
	Footage drilled *	850	200	550	600	100	1050	500	800	720	735	600	1050	600	150	550	9055	450	900	500	350	250	450	500	565	1040	1000	900	1100	350	17,410
	To date	850	1050	1600	2200	2300	3350	3850	4650	5370	6105	6705	7755	8355	8506	9055	9055	9505	10,405	10,905	11,255	11,505	11,955	12,455	13,020	14,060	15,060	15,960	17,060	17,410	17,410
	Miles to field	5	5	5	5	5	5	2	1	½	½	15	15	15	14	5	–	6	7	20	20	20	7	15	15	15	15	10	3	7	–
	Hours travel	½	½	½	½	½	½	½	½	½	½	1	1	1½	1¼	1	10¾	1	¾	1½	1¾	1	1¼	1	1	1	1	¾	¼	1	24
	Hours drilling	9½	9½	9½	9½	9½	9½	9½	11	11½	10½	10½	10	9½	9¼	10	149	10	10¼	9¼	9¼	9	9¼	10	10	11	10	10¾	9¾	9½	277
	Total hours/day *	10	10	10	10	10	10	10	11½	12	11	11½	11	11	10¾	11	159¾	11	11	10¾	11	10	10½	11	11	12	11	11½	10	10½	301
	To date	10	20	30	40	50	60	70	81½	93½	104½	116	127	138	148¾	159¾	159¾	170¾	181¾	192½	203½	213½	224	235	246	258	269	280½	290½	301	301
	Footage/drilling hour (under total only)	89	21.05	57.89	63.15	10.52	110.52	52.63	72.72	62.60	70.00	57.14	105.00	63.15	15.78	55.00	60.77	45.00	87.80	54.05	37.83	27.77	224	50.00	56.50	94.54	100.00	78.0	112.82	36.84	
No.2 DRILLER	Holes drilled	9	9	13	10	10	14	12	10	13	7	10	20	14	8	4	163	11	22	17	6	3	15	13	12	17	18	28	16	11	352
	Holes washed out	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2
	Footage drilled *	450	450	650	500	500	700	600	500	780	555	500	1000	700	400	200	8485	550	1100	850	300	150	750	725	900	1165	975	1400	800	550	18700
	To date	450	900	1550	2050	2550	3250	3850	4350	5130	5685	6185	7185	7885	8285	8485	8485	9035	10,135	10,985	11,285	11,435	12,185	12,910	13,810	14,975	15,950	17,350	18,150	18,700	18700
	Miles to field	5	5	5	5	5	5	2	1	½	½	15	15	15	14	5		4	4	2	2		5	15	15	15	10	5	4	7	
	Hours travel	½	½	½	½	½	½	½	½	½	½	1½	1½	2	2	1	13	½	½	¼	½	½	1	1	1	1	1	¾	¾	1¼	23
	Hours drilling	9½	9½	9½	9½	9½	9½	9½	11½	12	11½	10½	10½	10	9½	11	153	11½	11½	11¾	11½	5½	11	11	11	11	11	11¼	11¼	9	291¼
	Total hours/day *	10	10	10	10	10	10	10	12	12½	12	12	12	12	11½	12	166	12	12	12	12	6	12	12	12	12	12	12	12	10¼	314¼
	To date	10	20	30	40	50	60	70	82	94½	106½	118½	130½	142½	154	166	166	178	190	202	214	220	232	244	256	268	280	292	304	314¼	314¼
	Footage/drilling hour (under total only)	47.00	47.00	68.42	52.63	52.63	73.68	63.15	43.47	65.00	48.26	47.61	95.23	70.00	46.84	18.18	55.45	47.82	95.65	72.34	26.08	25.00	68.18	65.90	81.81	105.90	88.63	124.44	71.11	61.11	
No.3 DRILLER	Holes drilled	8	10	13	9	10	15	13	10	22	6	14	16	10	7	3	166	9	9	13	4	1	10	7	13	9	10	15	15	19	300
	Holes washed out	–	–	2	–	2	1	–	3	1	–	2	–	–	–	–	11	–	–	1	–	–	–	–	–	–	–	–	–	–	12
	Footage drilled *	400	500	650	450	500	750	650	500	960	600	700	800	500	350	150	8460	450	450	650	200	35	500	490	650	555	500	750	750	950	15390
	To date	400	900	1550	2000	2500	3250	3900	4400	5360	5960	6660	7460	7960	8310	8460	8460	8910	9360	10,010	10,210	10,245	10,745	11,235	11,885	12,440	12,940	13,690	14,440	15,390	15390
	Miles to field	5	5	5	5	5	5	2	1	1	1	15	15	15	12	5		4	3	2	2	3	5	15	15	15	15	10	5	7	
	Hours travel	½	½	½	½	½	½	½	½	½	½	1¾	1½	1½	2	1	12¾	1	½	½	½	1	1	1	1	1	1	¾	¾	1½	24¼
	Hours drilling	9½	9½	9½	9½	9½	9½	9½	10½	12	11½	11	10	10½	10	9	151	11½	10	11½	5½	3	12	7½	11	10¾	11	11½	11	10½	277¾
	Total hours/day *	10	10	10	10	10	10	10	11	12½	12	12¾	11½	12	12	10	163¾	12½	10½	12	6	4	13	8½	12	11¾	12	12¼	11¾	12	302
	To date	10	20	30	40	50	60	70	81	93½	105½	118¼	129¾	141¾	153¾	163¾	163¾	176¼	186¾	198¾	204¾	208¾	221¾	230¼	242¼	254	266	278¼	290	302	302
	Footage/drilling hour (under total only)	42.10	52.63	68.42	47.36	52.63	78.94	68.42	47.61	80.00	52.17	63.63	80.00	47.61	35.00	16.66	52.03	39.13	45.00	56.52	36.36	11.66	41.66	66.33	59.09	51.62	45.45	61.22	68.18	90.47	
No.4 DRILLER	Holes drilled			[illegible]	11	11	7	9	14	14	15	10	12	15	5	2	[illegible]	8	17	8	20	6	0	15	10	15	20	25	19	[illegible]	321
	Holes washed out			–	–	–	–	–	–	1	–	–	–	–	–	–	1	1	–	3	–	–	–	1	3	–	–	–	–	–	9
	Footage drilled *			300	550	550	350	450	700	700	750	500	850	750	250	600	7300	400	750	360	1000	300	0	825	830	1050	1000	1250	950	600	16615
	To date			300	850	1400	1750	2200	2900	3600	4350	4850	5700	6450	6700	7300	7300	7700	8450	8810	9810	10,110	10,110	10,935	11,765	12,815	13,815	15,065	16,015	16,615	16615
	Miles to field			5	5	5	5	2	1	1	2	15	15	15	14	5		4	3	2	2	3	5	15	15	15	15	10	5	7	
	Hours travel			½	½	½	½	½	½	½	½	1	1½	2	2	1	11½	1	½	½	[illegible]	½	1	1	1	1	1	1	1	1	22½
	Hours drilling			9½	9½	9½	9½	9½	11	12	11½	11	10½	10	9	11	133½	11	11½	11½	11½	5½	9	11	11½	11½	11½	11¼	11	11½	272¾
	Total hours/day *			10	10	10	10	10	11½	12½	12	12	12	12	11	12	145	12	12	12	12	6	10	12	12½	12½	12½	12¼	12	12½	295¼
	To date			10	20	30	40	50	61½	74	86	98	110	122	133	145	145	157	169	181	193	199	209	221	233½	246	258½	270¾	282¾	295¼	295¼
	Footage/drilling hour (under total only)			31.52	57.89	57.89	36.84	47	68.63	58.33	65.21	45.45	80.95	75.00	27.77	54.54	54.68	36.36	65.21	31.30	86.95	54.54	0	75.00	72.01	91.30	86.95	111.11	86.35	52.17	
No.5 DRILLER	Holes drilled								2	5	7	10	8	12	2	6	52	9	7	12	10	3	8	5	6	7	12	13	9	14	167
	Holes washed out								–	–	1	–	1	–	–	–	2	–	–	–	–	–	–	3	2	1	–	–	–	–	8
	Footage drilled *								100	250	350	500	400	600	90	300	2590	450	290	525	500	150	400	250	345	455	600	650	450	700	8355
	To date								100	350	700	1200	1600	2200	2290	2590	2590	3040	3330	3855	4355	4505	4906	5155	5500	5955	6,555	7,205	7,655	8,355	8355
	Miles to field								1	1	2	15	15	15	14	5		4	3	2	2	3	4	15	15	15	15	10	5	7	
	Hours travel								½	½	½	1	1½	1½	1¼	1	7¾	1	1	1	¾	¾	1	1	1¼	1	1	¾	¾	1	20
	Hours drilling								12½	11½	10½	11	11	11	5	10	82½	9½	7	11½	11¼	6¼	11	11	10¼	9¾	10	11¼	11¼	10½	213
	Total hours/day *								13	12	11	12	12½	12½	6¼	11	90¼	10½	8	12½	12	7	12	12	11½	10¾	11	12	12	11½	233
	To date								13	25	36	48	60½	73	79¼	90¼	90¼	100¾	108¾	121¼	133¼	140¼	152¼	164¼	175¾	186½	197½	209½	221½	233	233
	Footage/drilling hour (under total only)								8.00	21.73	33.33	45.45	36.36	54.54	18.00	30.00	31.39	47.36	41.42	45.65	44.44	24.00	36.36	22.72	33.90	46.66	60.00	57.77	40.90	66.66	
No.6 DRILLER	Holes drilled																				11	4	11	10	5	6	11	17	12	6	93
	Holes washed out																				–	–	–	–	1	3	3	2	–	–	9
	Footage drilled *																				550	200	550	575	400	465	550	850	600	300	4940
	To date																				550	750	1200	1775	2175	2640	3,190	4,040	4,640	4,940	4940
	Miles to field																				2	2	7	15	15	15	15	10	5	7	
	Hours travel																				½	½	1	1	1	1	1	¾	¾	¾	8¼
	Hours drilling																				11½	5½	11	11	11	11	11	11¼	11½	9¼	104
	Total hours/day *																				12	6	12	12	12	12	12	12	12¼	10	112¼
	To date																				12	18	30	42	54	66	78	90	102¼	112¼	112¼
	Footage/drilling hour (under total only)																				47.82	38.36	50.00	52.27	36.36	42.27	55.00	75.55	54.00	32.43	
No.3 DRILLER (R. Thompson)	Holes drilled			12	12	14	16	17	13	–	13	18	12	18	5	7	157	10	16	12	11	1	17	8	9	15	25	29	24	11	345
	Holes washed out			–	–	–	–	–	1		–	–	–	–	–	–	1	3	–	–	–	–	–	–	–	–	3	–	–	–	7
	Footage drilled *			600	600	700	800	850	650		650	900	600	900	250	350	78 50	500	800	600	550	25	850	505	720	1200	1400	1450	1200	550	18200
	To date			600	1200	1900	2700	3550	4200		4850	5750	6350	7250	7500	7850	78 50	8350	9150	9750	10,300	10,325	11,175	11,680	12,400	13,600	15,000	16,450	17,650	18,200	18200
	Miles to field			5	5	5	5	2	2		2	15	15	15	14	5		4	3	2	3	3	7	5	15	15	15	10	5	8	
	Hours travel			½	½	½	½	½	½		½	1	1	1	2	1¾	10¼	¾	¼	½	¼	½	1	¾	2	1	1	1	1	1½	22½
	Hours drilling			9½	9½	9½	9½	9½	10½		10	11	11	11	10	10¼	121¼	11¼	11	11½	11¾	6½	11	11¾	10	11	11	11	11	10½	260½
	Total hours/day *			10	10	10	10	10	11		10½	12	12	12	12	12	131½	12	12	12	12	7	12	12½	12	12	12	12	12	12	283
	To date			10	20	30	40	50	61		71½	83½	95½	107½	119½	131½	131½	143½	155½	167½	179½	186½	198½	211	223	235	247	259	271	283	283
	Footage/drilling hour (under total only)			63.15	63.15	73.68	84.21	89.47	61.90		65.00	81.81	54.54	81.81	25.00	34.14	64.74	44.44	72.72	52.17	46.60	3.84	77.27	42.97	72	109.00	127.27	131.81	109.09	52.38	
LOST TIME	Time lost-equipment														3¾		3¾		2										3		8¾
	Drill No. (see remarks)														5		5		5										5		

DOZERS

Dozer	Item	1–15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	REFLECTION
No.1 CAT-D7	~~Miles line cut~~ HOURS WORKED			3	8	8			11	11	8	9	9	10	9	9	95
	Hours (work & travel) *																
	~~To date~~ HOURS STAND BY						10	10									20
No.2 GRADER	Miles line cut																
	Hours (work & travel) *																
	To date																

INVENTORIES

Item	Row	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	REFLECTION
1. PRE-LOAD	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK								12	12	12	12	12	12	12	12	96	12	12	12	12	6	12	12	12	12	12	12	12	12	246
	~~On hand~~ TO DATE								12	24	36	48	60	72	84	96	96	108	120	132	144	150	162	174	186	198	210	222	234	246	246
2. PRE-LOAD	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	6	12	12	12	12	12	12	12	12	126
	~~On hand~~ TO DATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	24	30	42	54	66	78	90	102	114	126	126
1. W-TANKER	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK	0	0	10	10	10	10	10	11	12	12	12	12	12	12	12	145	12	12	12	12	6	12	12	12	12	12	12	12	12	295
	~~On hand~~ TO DATE	0	0	10	20	30	40	50	61	73	85	97	109	121	133	145	145	157	169	181	193	199	211	223	235	247	259	271	283	295	295
2. W-TANKER	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	12	12	12	12	12	2¼	12	12	146¼
	~~On hand~~ TO DATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	24	36	48	60	72	84	96	108	120	122¼	134¼	146¼	146¼
3. W-TANKER G.A.I.	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	24	12	12	12	0	0	0	0	0	0	0	0	0	0	60
	~~On hand~~ TO DATE	0	0	0	0	0	0	0	0	0	0	0	0	0	12	24	24	36	48	60	60	60	60	60	60	60	60	60	60	60	60
1. TOOL-PUSH	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK																								12	12	12	12	12	12	72
	~~On hand~~ TO DATE																								12	24	36	48	60	72	72
1. SURVEYOR	~~Received~~ ~~Type~~																														
	~~Used~~ HOURS WORK	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	150	10	10	10	10	10	10	10	10	10	10	10	10	10	280
	~~On hand~~ TO DATE	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	150	160	170	180	190	200	210	220	230	240	250	260	270	280	280
	Received Type																														
	Used																														
	On hand																														
	Received Type																														
	Used																														
	On hand																														
	Received Type																														
	Used																														
	On hand																														
	Received Type																														
	Used																														
	On hand																														

INVENTORIES (explosives and supplies)

Item	ON HAND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	REFLECTION
Received GEOPHS Type 5/10 x 2½"																							4000								
Used		220	100	140	245	175	425	426	405	50	0	300	250	400	425	525	4085	0	525	560	475	0	0	455	610	495	420	275	600	1450	9850
On hand	7855	7635	7535	7395	7150	6995	6550	6125	5720	5670	5670	5370	5120	4720	4295	3770	3770	3770	3245	2685	2210	2210	6210	5755	5245	4750	4330	4055	3455	2005	2005
Received DETS. Type 125'																															
Used		14	15	15	12	0	6	3	0	0	0	0	0	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	65
On hand	65	51	36	21	9	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–
Received DETS. Type 100'			560														560						200				240		1120		
Used		18	5	11	33	35	78	50	7	2	–	55	0	2	2	62	360	0	0	12	0	0	0	129	32	0	0	54	12	0	599
On hand	41	23	578	567	534	499	421	371	364	362	362	307	307	305	303	241	241	241	241	229	229	229	429	300	268	268	508	454	1562	1562	1562
Received DETS. Type 80'																							400								
Used		0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	154	144	102	0	0	0	402
On hand	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400	400	246	102	0	0	0	0	–
Received DETS. Type 60'					1040								480				1520						1040				480				
Used		0	0	0	0	0	2	37	125	22	0	56	102	158	168	171	841	0	205	231	190	0	0	52	0	0	0	49	223	588	2379
On hand	0	0	0	0	1040	1040	1038	1001	876	854	854	798	1176	1018	850	679	679	679	471	250	60	60	1100	1048	1048	1048	1528	1479	1256	668	668
Received BOOSTER Type													1500				1500							350			4000				
Used		28	20	25	44	35	85	80	87	20	0	63	52	85	81	62	767	0	205	231	190	0	0	181	186	104	75	56	115	289	2398
On hand	722	694	674	649	605	570	485	405	318	298	298	235	1683	1598	1517	1455	1455	1455	1250	1019	829	829	829	998	812	708	4633	4578	4463	4174	4174
Received CORDTEX Type		1000															1000														
Used		0	0	0	0	0	0	210	0	0	0	210	0	0	0	0	420	0	0	0	0	0	0	0	0	0	240	0	0	0	660'
On hand	800'	1800	1800	1800	1800	1800	1800	1590	1590	1590	1590	1380	1380	1380	1880	1880	1880	1380	1380	1380	1380	1380	1380	1380	1380	1380	1140	1140	1140	1140	1140
Received BRAN Type		6		50	30		224						100				410	68	330												
Used		10	16	6	28	25	29	23	30	29	16	23½	11	11	65	91	413½	69	23	29	35	9	6	11	15½	6½	8	3½	2½	12	643½
On hand	26½	22½	6½	50½	52½	27½	222½	199½	169½	140½	124½	201	190	179	114	23	23	22	329	300	265	256	250	239	223½	217	209	205½	203	191	191
Received MUD Type		100			400								400				900							400	400						
Used		13	22	52	37	37	60	37	50	38	36	38	10	8	50	66	554	41½	25	37	37	18	32	39	42	57	78	56	20	44	1080½
On hand	9½	96½	74½	22½	385½	348½	288½	251½	201½	163½	127½	89½	479½	471½	421½	355½	355½	314	289	252	215	197	165	536	884	827	749	693	673	629	629
Received W.M. Type ROCK 4½"																															
Used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–
On hand	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Received W.M. Type STARTERS 5⅝"																															
Used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–
On hand	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–
Received W.M. Type BLADES 4½"																				48	48										
Used		6	0	9	6	3	6	3	9	0	9	3	9	7	3	3	76	6	3	6	3	0	7	3	3	6	3	3	0	0	119
On hand	138	132	132	123	117	114	108	105	96	96	87	84	75	68	65	62	62	56	53	47	92	92	85	82	79	73	70	67	67	67	67
Received W.M. Type BLADES H.D. 4¾"							48										48			48	48										
Used		0	0	0	0	3	0	0	3	3	15	3	6	3	0	12	48	6	3	0	0	0	9	3	3	0	6	0	0	6	85
On hand	45	45	45	45	45	42	90	90	87	84	69	66	60	57	57	45	45	39	36	84	132	132	123	120	117	117	111	111	111	105	105
Received VAREL Type BLADES STEP 5⅝"																															
Used		0	0	6	0	0	0	0	0	0	0	0	3	0	0	0	9	0	0	0	0	0	0	0	0	0	3	0	0	0	12
On hand	35	35	35	29	29	29	29	29	29	29	29	29	26	26	26	26	26	26	26	26	26	26	26	26	26	26	23	23	23	23	23
Received VAREL Type BLADES STEP 5⅞"							36						36				72														
Used		3	0	3	3	3	3	0	3	0	3	0	0	0	3	6	30	0	3	3	6	0	0	0	[illegible]	0	0	3	0	6	51
On hand	30	27	27	24	21	18	51	51	48	48	45	45	81	81	78	72	72	72	69	66	60	60	60	60	[illegible]	60	60	57	57	51	51
Received WALMAC Type INSERT 5⅞"																															
Used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
On hand	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Received Type																															
Used																															
On hand																															
Received Type																															
Used																															
On hand																															
Received TAPES Type																															
Used		6	5	6	10	8	18	18	17	3	0	12	11	15	17	21	167	0	20	24	20	0	0	18	21	21	18	12	24	30	375
On hand	903	897	892	886	876	868	850	832	815	812	812	800	789	774	757	736	736	736	716	692	672	672	672	654	633	612	594	582	558	528	528
No. OF EMPLOYEES		41	40	43	43	43	42	41	44	43	43	43	43	43	43	43		43	43	43	43	43	44	43	43	43	43	43	43	43	

REMARKS

Day	Remarks
1	1000' Primacord added to stock - missed last report. Drilling extremely poor. Received 190 bags drilling mud. Record quality fair.
2	Received 560 x 100' caps. Drilling very poor.
3	Received 50 bags bran. Drilling poor.
4	Drill No.3 accident to helper. 3 hours to hospital. Received 1040 x 60' caps. Drilling on drain very poor. Received 16 tons drilling mud.
5	Rig No.1 drilled 10 holes to make 5 hole redrill.
6	Production increased; due better drilling conditions encountered. Received 224 bags bran. Received 48 x 4¾" & 36 x 5⅞" bits.
8	Drills commenced 12 hour shifts. Pre-loading vehicle #1 commenced 12 hour shifts.
9	Recorder waiting on holes.
10	Recorder waiting on holes.
11	Received 100 bags bran.
12	Received 16 tons drilling mud. — " — 480 x 60' caps & 1500 boosters.
13	Line #1 completed. Shot point near Beachport No.1 not shot.
14	Drill No.5 breakdown 3¾ hours. Line #2 commenced (recording).
16	Recording crew waiting on holes. Received 68 bags bran.
17	Received 330 bags bran.
18	Received 48 x 4½" bits (W.M.) — " — 48 x 4¾" — " — (W.M.)
19	Received 48 x 4½" bits (W.M.) — " — 48 x 4¾" — " — (W.M.) Sawdust carted from sawmill for use with bran.
20	Recording crew waiting on holes. Drills only worked part of day - I.C.I. slow on delivery of caps.
21	Received 200 x 100', 400 x 80', 1040 x 60' caps. Recorder waiting on holes. Drills bogging in peat along line #2. Received 4000 lb. powder.
22	Received 350 boosters and 400 bags spat gell.
23	S.P. (285–289) shot NW. S.P. (290–316) skipped due boggy conditions. S.P. (332–317) shot south east. Received 400 bags (fresh water mud).
24	Southern extension line #2 commenced. This extension being shot NW to keep direction same.
25	Received 240 x 100' caps and 480 x 60' caps and 4000 boosters. Dozer clearing line #3 along Lake George. Drilling excellent. S.P. (421 to 430) skipped (well & bridge).
26	Line #2 completed and line #3 being shot commenced. Line #3 spacing with 300/20. Drilling good.
27	Drilling excellent. Record quality fair. Received 1120 x 100' caps. Surveyors chaining 800'/440' split spread.
28	Dozer clearing '3 mile' sand hill.

GEOPHYSICAL ASSOCIATES INTERNATIONAL

Party 6 Period Ending 28TH FEBRUARY 1969

Client ESSO EXPLORATION AUST. LTD.

Area O.E.L.-22 Tenement 069.A

State SOUTH AUSTRALIA Country AUSTRALIA

Locations (Prospect or Camp)	From	To	Headquarters
1 BEACHPORT	1.2.1969	THRU 28.2.1969	
2			
3			
4			

ENV 990-8

— GEOPHYSICAL ASSOCIATES INTERNATIONAL —
SEISMIC PRODUCTION REPORT

NOTES

✱ Denotes check totals which should appear on print in RED INK

☐ Denotes refraction statistics.

BASIC CREW TIME

Carry Over NIL
Current 103
Total Hours 103
Contract 900'
Carry Over 103

	21	22	23	24	25	26	27	28	29	30	31		REFLECTION	REFRACTION	TOTALS
PROFILES						LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1				
		NOISE TEST SHOTS	TEST SHOTS			1	9 18	19	27 36	38	43				
						2	10	20	28 37	39	44				
						3	11	21	29	40	45				
						4	12	22	30	41	46				
						5	13	23	31	42	47				
						6	14	24	32		48				
						7	15	25	33		49				
						8	16	26	34		50				
							17		35						
RECORDER		7	8			8	9	9	11	5	8	No. of shot points	65		65
						8	9	9	11	5	8	Profiles recorded ✱	50		50
						8	17	26	37	42	50	To date	50		50
						.6056	.6813	.6056	.8327	.3787	.6056	Miles surface coverage	2.095		2.095
						8	10	9	11	5	8	Total depth shots	51		51
		7	8									W_x and other	–		–
		7	7			9	8	7	5	5	5	Miles to field	–		–
		½	½			1	1	1	1	½	½	Hours travel	6		6
		11½	10½			8½	8½	8½	9	9½	9½	Hours field	75½		75½
												Hours lost – Weather	–		–
												Hours lost – Equipment	–		–
		–	–	10	10	½	½	½	–		–	Hours ~~moving camp~~ STAND BY	21½		21½
												Hours holidays	10		10
		12	11	10	10	10	10	10	10	10	10	Total hours/day ✱	103		103
		12	23	33	43	53	63	73	83	93	103	To date	103		103
DRILLS – No. 1 DRILLER		3	6	11	11	8	12	16	13	12	20	Holes drilled	111		111
									4			Holes washed out	4		4
		240	300	550	550	400	600	800	850	600	1000	Footage drilled ✱	5890		5890
		240	540	1090	1640	2040	2640	3440	4290	4890	5890	To date	5890		5890
		7	9	9	8	8	7	6	5	6	6	Miles to field	–		–
		½	1	1	1	1	1	1	1	1	1	Hours travel	9½		9½
		6	8	9½	9	9	9	9	9	9	9	Hours drilling	86½		86½
		10½	9	10½	10	10	10	10	10	10	10	Total hours/day ✱	100		100
		10½	19½	30	40	50	60	70	80	90	100	To date	100		100
		40	37½	58	61	44½	66½	89	94½	67	111	Footage/drilling hour	58.90		58.90
		4										(~~under total only~~) STAND BY	4		4
No. 2 DRILLER		4	7	10	11	12	10	14	17	13	9	Holes drilled	107		107
								2				Holes washed out	2		2
		330	350	500	560	600	500	800	850	650	450	Footage drilled ✱	5580		5580
		330	680	1180	1730	2330	2830	3630	4480	5130	5580	To date	5580		5580
		7	9	9	8	8	7	6	5	5	5	Miles to field	–		–
		1	1	1	1	1	1	1	½	1	1	Hours travel	9½		9½
		10½	8½	9	9	9	9	9	9½	9	9	Hours drilling	91½		91½
		11½	9½	10	10	10	10	10	10	10	10	Total hours/day ✱	101		101
		11½	21	31	41	51	61	71	81	91	101	To date	101		101
		31½	41	55½	61	66½	55½	89	89½	72	50	Footage/drilling hour	55.24		55.24
												(~~under total only~~) STAND BY	0		0
No. 3 DRILLER			8	10	12	12	15	15	15	12	10	Holes drilled	114		114
									2	1	2	Holes washed out	4		4
			390	500	600	600	750	750	850	600	600	Footage drilled ✱	5960		5960
			710	1210	1810	2410	3160	3910	4760	5360	5960	To date	5960		5960
			9	9	8	8	7	6	5	5	5	Miles to field	–		–
			1	1	1	1	1	1	1	1	½	Hours travel	9½		9½
			9	10½	9	10	9	9	9	9	9½	Hours drilling	94½		94½
			10	11½	10	11	10	10	10	10	10	Total hours/day ✱	104		104
			21½	33	43	54	64	74	84	94	104	To date	104		104
			43⅓	48	66⅔	60	83	83	94½	67	63	Footage/drilling hour	57.30		57.30
												(~~under total only~~) STAND BY	0		0
DIST USE												Time lost-equipment			
												Drill No. (see remarks)			
DOZERS No. 1												Miles line cut			
												Hours (work & travel) ✱			
												To date			
DOZERS No. 2												Miles line cut			
												Hours (work & travel) ✱			
												To date			
INVENTORIES	9500											Received Type 5 lbs			
		290	140			200	195	225	275	130	190	Used GEOPHEX	1645		
		9210	9070	9070	9070	8870	8675	8450	8175	8045	7855	On hand	7855		
	80											Received Type 125'			
		8									7	Used CAPS	15		
		72	72	72	72	72	72	72	72	72	65	On hand	65		
	120											Received Type 100'			
		12				4		1	19	17	26	Used CAPS.	79		
		108	108	108	108	104	104	103	84	67	41	On hand	41		
	200											Received Type 80'			
		12	22			36	39	44	36	9	0	Used CAPS	198		
		188	166	166	166	130	91	47	11	2	2	On hand	2		
		970										Received Type BOOSTER			
			19			40	36	40	55	26	32	Used CAPS	248		
			951	951	951	911	875	835	780	754	722	On hand	970		
	1000'											Received Type CORDTEX			
											200	Used	200		
		1000'	1000'	1000'	1000'	1000'	1000'	1000'	1000'	1000'	800'	On hand	800		
												Received Type			
												Used			
												On hand			
												Received Type			
												Used			
												On hand			
												Received Type			
												Used			
												On hand			
	20						20		12	18		Received Type BRAN	70		70
				5	7	5	4	6	6	5½	5	Used	43½		43½
		20	20	15	8	3	19	13	19	31½	26½	On hand	26½		26½
	40			56								Received Type MUD	96		96
		6	3	9	12	10	6	19	4	8½	9	Used	86½		86½
		34	31	78	66	56	50	31	27	18½	9½	On hand	9½		9½
INVENTORIES												Received Type			
												Used			
												On hand			
	12											Received W/M Type ROCK 4½	12		12
												Used	0		0
		12	12	12	12	12	12	12	12	12	12	On hand	12		12
	12											Received W/M Type STARTERS	12		12
		3	3	2	2	1	1					Used 5⅝	12		12
		9	6	4	2	1	0	0	0	0	0	On hand	0		0
	192											Received W/M Type BLADES	192		192
		3	6	9	3	3	12	6	6	3	3	Used 4½	54		54
		189	183	174	171	168	156	150	144	141	138	On hand	138		138
									26			Received W/M Type BLADES	26		26
										–	3	Used H.D. 4¾	3		3
										26	23	On hand	23		23
							36					Received SK Type BLADES	36		36
								3	3	–	–	Used STEP 5⅛	6		6
								33	30	30	30	On hand	30		30
							36					Received VAREL Type BLADES	36		36
									1	–	–	Used STEP 5⅝	1		1
								36	35	35	35	On hand	35		35
									6			Received WALMAC Type INSERT	6		6
										–	–	Used 5⅛	–		
										6	6	On hand	6		6
												Received Type			
												Used			
												On hand			
												Received Type			
												Used			
												On hand			
	500											Received Type TAPES	500		500
		30	9			8	13	10	12	6	9	Used	97		97
		470	461	461	461	453	440	430	418	412	403	On hand	403		403
No. OF EMPLOYEES	23	26	26	27	27	28	30	30	31	32	32				
REMARKS	[illegible] TEST SHOTS FIRED [illegible] [illegible] CLIENT ARRIVED	NOISE TESTS, SHOT DIFFERENT PATTERNS, WITH VARYING CHARGE SIZES, [illegible] DEPTHS, SPREAD LENGTHS ETC.	TESTING CONTINUED. DRILLING POOR	RECORDER WAITING ON DRILLS DRILLING CONDITIONS POOR	RECORDER WAITING ON DRILLS DRILLING POOR	RECORD QUALITY FAIR. DRILLING POOR.	DRILLING POOR.	DRILLING POOR.	DRILLING POOR.	DRILLING POOR:	TEST SHOT # FIVE HOLE PATTERN AGAINST THREE HOLE PATTERN.				

GEOPHYSICAL ASSOCIATES INTERNATIONAL

Party 6 Period Ending 31ST JANUARY 1969

Client ESSO EXPLORATION AUST. LTD.
Area OEL 22 Tenement 069A
State SOUTH AUSTRALIA Country AUSTRALIA.

Locations (Prospect or Camp)	From	To	Headquarters
1 BEACHPORT WORKWINE STATION	19-1-69	31-1-69	WORKWINE STN.
2			
3			
4			

ENV. 990 - 5

— GEOPHYSICAL ASSOCIATES INTERNATIONAL —
SEISMIC PRODUCTION REPORT

NOTES

* Denotes check totals which should appear on print in RED INK

☐ Denotes refraction statistics.

BASIC CREW TIME

Carry Over NIL
Current 103
Total Hours 103
Contract 900
Carry Over 103

	ON HAND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		REFLECTION	REFRACTION	TOTALS
PROFILES																								NOISE TEST SHOTS	TEST SHOTS			LINE 1	LINE 1	LINE 1	LINE 1	LINE 1	LINE 1				
																												1	9 18	19	27 36	38	43				
																												2	10	20	28 37	39	44				
																												3	11	21	29	40	45				
																												4	12	22	30	41	46				
																												5	13	23	31	42	47				
																												6	14	24	32		48				
																												7	15	25	33		49				
																												8	16	26	34		50				
																													17		35						
RECORDER																								7	8			8	9	9	11	5	8	No. of shot points	65		65
																												8	9	9	11	5	8	Profiles recorded *	50		50
																												8	17	26	37	42	50	To date	50		50
																												.6056	.6813	.6813	.8327	.3787	.6056	Miles surface coverage	3.7852		3.7852
																												8	10	9	11	5	8	Total depth shots	51		51
																								7	8									W_x and other	-		-
																								7	7			9	8	7	5	5	5	Miles to field	-		-
																								½	½			1	1	1	1	½	½	Hours travel	6		6
																								11½	10½			8½	8½	8½	9	9½	9½	Hours field	75½		75½
																																		Hours lost - Weather	-		-
																																		Hours lost - Equipment	-		-
																								-	-	10	10	½	½	½	-		-	Hours ~~moving camp~~ STAND BY	21½		21½
																																		Hours holidays			
																								12	11	10	10	10	10	10	10	10	10	Total hours/day *	103		103
																								12	23	33	43	53	63	73	83	93	103	To date	103		103
DRILLS No. 1 DRILLER																								3	6	11	11	8	12	16	13	12	20	Holes drilled	111		111
																															4			Holes washed out	4		4
																								240	300	550	550	400	600	800	850	600	1000	Footage drilled *	5890		5890
																								240	540	1090	1640	2040	2640	3440	4290	4890	5890	To date	5890		5890
																								7	9	9	8	8	7	6	5	6	6	Miles to field	-		-
																								½	1	1	1	1	1	1	1	1	1	Hours travel	9½		9½
																								11	10	9½	9	9	9	9	9	9	9	Hours drilling	93½		93½
																								11½	11	10½	10	10	10	10	10	10	10	Total hours/day *	103		103
																								11½	22½	33	43	53	63	73	83	93	103	To date	103		103
																								22	30	58	61	44½	66½	89	94½	67	111	Footage/drilling hour	64.35		64.35
																																		~~(under total only)~~ STAND BY	4		4
DRILLS No. 2 DRILLER																								4	7	10	11	12	10	14	17	13	9	Holes drilled	107		107
																														2				Holes washed out	2		2
																								330	350	500	550	600	500	800	850	650	450	Footage drilled *	5580		5580
																								330	680	1180	1730	2330	2830	3630	4480	5130	5580	To date	5580		5580
																								7	9	9	8	8	7	6	5	5	5	Miles to field	-		-
																								1	1	1	1	1	1	1	½	1	1	Hours travel	9½		9½
																								10½	9½	9	10	9	9	9	9½	9	9	Hours drilling	91½		91½
																								11½	10½	10	11	10	10	10	10	10	10	Total hours/day *	103		103
																								11½	22	32	43	53	63	73	83	93	103	To date	103		103
																								31½	37	55½	61	66½	55½	89	89½	72	50	Footage/drilling hour	60.98		60.98
																																		~~(under total only)~~ STAND BY	0		0
DRILLS No. 3 DRILLER																									8	10	12	12	15	15	15	12	10	Holes drilled	114		114
																															2	1	2	Holes washed out	4		4
																									390	500	600	600	750	750	850	600	600	Footage drilled *	5960		5960
																									710	1210	1810	2410	3160	3910	4760	5360	5960	To date	5960		5960
																									9	9	8	8	7	6	5	5	5	Miles to field	-		-
																									1	1	1	1	1	1	1	1	½	Hours travel	9½		9½
																									9	9½	9	10	9	9	9	9	9½	Hours drilling	93½		93½
																									10	10½	10	11	10	10	10	10	10	Total hours/day *	103		103
																									21½	32	42	53	63	73	83	93	103	To date	103		103
																									43⅓	52½	66⅔	60	83	83	94½	67	63	Footage/drilling hour	63.74		63.74
																																		~~(under total only)~~ STAND BY	0		0
LOST TIME																																		Time lost-equipment			
																																		Drill No. (see remarks)			
DOZERS No. 1 SURVEYORS																																		Miles line cut			
																								12	11	10	10	10	10	10	10	10	10	Hours (work & travel) *	10		10
																								12	23	33	43	53	63	73	83	93	103	To date	103		103
DOZERS No. 2																																		Miles line cut			
																																		Hours (work & travel) *			
																																		To date			
INVENTORIES																							9500											Received Type 5 lbs			
																								290	140			200	195	225	275	130	190	Used GEOPHEX	1645		
																								9210	9070	9070	9070	8870	8675	8450	8175	8045	7855	On hand	7855		
																							80											Received Type 125'			
																								8									7	Used CAPS	15		
																								72	72	72	72	72	72	72	72	72	65	On hand	65		
																							120											Received Type 100'			
																								12				4		1	19	17	26	Used CAPS.	79		
																								108	108	108	108	104	104	103	84	67	41	On hand	41		
																							200											Received Type 80'			
																								12	22			36	39	44	36	9	0	Used CAPS	198		
																								188	166	166	166	130	91	47	11	2	2	On hand	2		
																								970										Received Type BOOSTER			
																									19			40	36	40	55	26	32	Used CAPS	248		
																									951	951	951	911	875	835	780	754	722	On hand	970		
																							1000'											Received Type CORDTEX			
																																	200	Used	200		
																								1000'	1000'	1000'	1000'	1000'	1000'	1000'	1000'	1000'	800'	On hand	800		
																																		Received Type			
																																		Used			
																																		On hand			
																																		Received Type			
																																		Used			
																																		On hand			
																																		Received Type			
																																		Used			
																																		On hand			
																							20						20		12	18		Received Type BRAN	70		70
																										5	7	5	4	6	6	5½	5	Used	43½		43½
																								20	20	15	8	3	19	13	19	31½	26½	On hand	26½		26½
																							40			56								Received Type MUD	96		96
																								6	3	9	12	10	6	19	4	8½	9	Used	86½		86½
																								34	31	78	66	56	50	31	27	18½	9½	On hand	9½		9½
INVENTORIES																																		Received Type			
																																		Used			
																																		On hand			
																							12											Received W/M Type ROCK 4½	12		12
																																		Used	0		0
																								12	12	12	12	12	12	12	12	12	12	On hand	12		12
																							12											Received W/M Type STARTERS	12		12
																								3	3	2	2	1	1					Used 5⅝	12		12
																								9	6	4	2	1	0	0	0	0	0	On hand	0		0
																							192											Received W/M Type BLADES	192		192
																								3	6	9	3	3	12	6	6	3	3	Used 4½	54		54
																								189	183	174	171	168	156	150	144	141	138	On hand	138		138
																																22		Received W/M Type BLADES	26		26
																																-	3	Used H.D. 4¾	3		3
																																48	45	On hand	23		23
																													36					Received SK Type BLADES	36		36
																														3	3	-	-	Used STEP 5⅛	6		6
																														33	30	30	30	On hand	30		30
																													36					Received VAREL Type BLADES	36		36
																															1	-	-	Used STEP 5⅝	1		1
																														36	35	35	35	On hand	35		35
																															6			Received WALMAC Type INSERT	6		6
																																-	-	Used 5⅛	-		
																																6	6	On hand	6		6
																																		Received Type			
																																		Used			
																																		On hand			
																																		Received Type			
																																		Used			
																																		On hand			
																							1000											Received Type TAPES	1000		1000
																								30	9			8	13	10	12	6	9	Used	97		97
																								970	961	961	961	953	940	930	918	912	903	On hand	903		903
No. OF EMPLOYEES																							23	26	26	27	27	28	30	30	31	32	32				
REMARKS																							TWO TEST SHOTS FIRED TO CHECK CABLES. CLIENT ARRIVED.	NOISE TESTS; SHOT DIFFERENT PATTERNS, WITH VARYING CHARGE SIZES, HOLE DEPTHS; SPREAD LENGTHS ETC.	TESTING CONTINUED. DRILLING POOR	RECORDER WAITING ON DRILLS DRILLING CONDITIONS POOR	RECORDER WAITING ON DRILLS DRILLING POOR.	RECORD QUALITY FAIR. DRILLING POOR.	DRILLING POOR.	DRILLING POOR.	DRILLING POOR.	DRILLING POOR.	TEST SHOT # FIVE HOLE PATTERN AGAINST THREE HOLE PATTERN.				

GEOPHYSICAL ASSOCIATES INTERNATIONAL

Party 6 Period Ending 31 JANUARY 1969
Client ESSO EXPLORATION AUST. Tenement 069A
Area OEL 22
State SOUTH AUSTRALIA Country AUSTRALIA.

Locations (Prospect or Camp)	From	To	Headquarters
1 BEACH PORT WORKWINE STATION	19-1-69	31-1-69	WORKWINE STN
2			
3			
4			

RECEIVED
3 MAR 1969
DEPT. OF MINES
REGISTRY

ENV 990 - 10

— GEOPHYSICAL ASSOCIATES INTERNATIONAL —
SEISMIC PRODUCTION REPORT

ENV 990-11

NOTES

* Denotes check totals which should appear on print in RED INK

☐ Denotes refraction statistics

RECEIVED 11 APR 1969 DEPT. OF MINES REGISTRY

BASIC CREW TIME

Carry Over	383
Current	310
Total Hours	693
Contract	393
Carry Over	300

PROFILES

Day	Profiles
1	LINE 3: 495–509, 510–521
2	No Shooting
3	LINE 5: 522–533, 534–545
4	LINE 5: 543–556, 551–570
5	LINE 3: 573–585, 586–591
6	LINE 3: 592–600, 601
7	LINE 3: 388–386
8	LINE 4: 490–375, 376–389, 504
9	LINE 3: 386, 385; LINE 4: 290–294
10	LINE 4: 295–304, 305–311
11	LINE 4: 313–342, 343–352
12	LINE 4: 353–410; LINE 6: 391–605, 606–609
13	LINE 6: 610–625, 626
14	LINE 11: 635–648, 649–654
15	LINE 11: 655–669, 670–678
16	No Shooting
17	LINE 8: 681–697, 698–711
18	LINE 8: 712–728, 729–744
19	LINE 8: 745–761
20	LINE 8: 762–772; LINE 10: 774, 775
21	LINE 10: 776–791, 792–797
22	No Shooting
23	No Shooting
24	LINE 10: 798–813
25	LINE 10: 814–824
26	LINE 10: 825–836, 837–844
27	LINE 9: 845–855, 856–858
28	LINE 9: 859–870, 871–878
29	LINE 7: 950–953
30	LINE 12: 937–945, 946–949
31	LINE 12: 936–922, 921–916

Days 1–15

Section	Item	On hand	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
RECORDER	No. of shot points		27	0	21	29	19	11	4	27	7	17	25	19	25	20	24	275
RECORDER	Profiles recorded *		27	0	21	27	19	11	4	27	7	17	25	19	25	20	23	
RECORDER	To date		27	27	48	75	94	105	109	136	143	160	185	204	229	249	272	272
RECORDER	Miles surface coverage		4.0909	0	1.6897	2.5940	3.4468	1.9507	1.7802	2.5569	1.3447	1.6099	2.3675	2.3675	2.9351	1.8940	2.5569	
RECORDER	Total depth shots		27	0	21	27	19	11	4	27	7	18	25	19	25	20	23	273
RECORDER	Wx and other		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
RECORDER	Miles to field		7	–	5	7	10	15	20	5	20	5	5	6	3	25	22	
RECORDER	Miles sub-surface to date		4.0909	4.0909	5.6806	8.2746	11.7214	13.6721	15.4523	18.0092	19.3539	20.9638	23.3313	25.6988	28.6345	30.5285	33.0854	33.0854
RECORDER	Hours travel		1	0	1	½	2	2	1½	1½	1½	1	½	½	½	1½	1½	16½
RECORDER	Hours field		9	0	9	9½	8	8	8½	8½	8½	9	9½	9½	9½	8½	8½	123½
RECORDER	Hours lost – Weather		–		–	–	–	–	–	–	–	–	–	–	–	–	–	
RECORDER	Hours lost – Equipment		–		–	–	–	–	–	–	–	–	–	–	–	–	–	
RECORDER	~~Hours moving camp~~ STANDBY			10	–	–	–	–	–	–	–	–	–	–	–	–	–	10
RECORDER	Hours holidays				–	–	–	–	–	–	–	–	–	–	–	–	–	
RECORDER	Total hours/day *		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
RECORDER	To date		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	150
No.1 DRILLER	Holes drilled		13	2	8	10	13	15	15	15	26	10	10	12	7	11	17	184
No.1 DRILLER	Holes washed out		7	–	–	–	–	–	1	–	–	–	–	–	1	–	–	
No.1 DRILLER	Footage drilled *		650	100	400	585	650	750	750	750	1300	500	500	600	350	550	850	
No.1 DRILLER	To date		650	750	1150	1735	2385	3135	3885	4635	5935	6435	6935	7535	7885	8435	9285	9285'
No.1 DRILLER	Miles to field		7	7	10	12	20	7	5	5	5	7	3	25	25	22	20	
No.1 DRILLER	Hours travel		½	¾	¾	¾	1	1	1	1	1	1	¾	1¾	2	1¾	1½	16½
No.1 DRILLER	Hours drilling		9¾	9¼	9¾	9¾	9	11½	10	9	11½	9	10½	10¼	10	10¼	10¾	150¼
No.1 DRILLER	Total hours/day *		10¼	10	10½	10½	10	12½	11	10	12½	10	11¼	12	12	12	12¼	
No.1 DRILLER	To date		10¼	20¼	30¾	41¼	51¼	63¾	74¾	84¾	97¼	107¼	118½	130½	142½	154½	166¾	166¾
No.1 DRILLER	Footage/drilling hour		66.66	10.81	41.02	60.00	72.22	65.21	75.00	83.33	113.04	55.55	47.61	58.53	35.00	53.65	79.06	
No.2 DRILLER	Holes drilled		12	20	15	19	17	21	20	23	0	17	18	10	6	14	11	223
No.2 DRILLER	Holes washed out		1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	
No.2 DRILLER	Footage drilled *		600	1000	750	1055	850	1145	1100	1265	0	935	900	500	400	700	550	
No.2 DRILLER	To date		600	1600	2350	3405	4255	5400	6500	7765	7765	8700	9600	10,100	10,500	11,200	11,750	11,750'
No.2 DRILLER	Miles to field		7	5	10	12	12	7	5	5	5	7	4	25	25	22	20	
No.2 DRILLER	Hours travel		½	1	1½	2	1½	1½	½	1	1	1½	1	2	2½	1¾	2	21¼
No.2 DRILLER	Hours drilling		11¼	12	11½	10½	11	11	12	11	9	10¾	11	10	7½	10¼	9¾	158½
No.2 DRILLER	Total hours/day *		11¾	13	13	12½	12½	12½	12½	12	10	12¼	12	12	10	12	11¾	
No.2 DRILLER	To date		11¾	24¾	37¾	50¼	62¾	75¼	87¾	99¾	109¾	122	134	146	156	168	179¾	179¾
No.2 DRILLER	Footage/drilling hour		53.33	83.33	65.21	100.47	77.27	104.09	91.66	105.41	0	86.97	81.81	50.00	53.33	68.29	56.41	
No.3 DRILLER	Holes drilled		20	15	20	12	15	26	20	20	17	26	3	15	18	5	10	242
No.3 DRILLER	Holes washed out		–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	
No.3 DRILLER	Footage drilled *		1000	750	1000	600	750	1300	1000	1000	850	1300	150	750	900	750	500	
No.3 DRILLER	To date		1000	1750	2750	3350	4100	5400	6400	7400	8250	9550	9700	10,450	11,350	11,600	12,100	12,100'
No.3 DRILLER	Miles to field		5	5	10	12	12	7	5	5	5	7	2	25	25	22	20	
No.3 DRILLER	Hours travel		1	1	1½	1½	1	1	1	2	1	1	½	1¾	2	2	1½	19¾
No.3 DRILLER	Hours drilling		10	10½	10	9½	9	11	10	9½	11	10¾	9½	10¼	10	8	10¼	149¼
No.3 DRILLER	Total hours/day *		11	11½	11½	11	10	12	11	11½	12	11¾	10	12	12	10	11¾	
No.3 DRILLER	To date		11	22½	34	45	55	67	78	89½	101½	113¼	123¼	135¼	147¼	157¼	169	169
No.3 DRILLER	Footage/drilling hour		100.00	71.42	100.00	63.15	83.33	118.18	100.00	105.26	77.27	120.93	15.78	69.76	90.00	31.25	48.78	
No.4 DRILLER	Holes drilled		9	8	9	10	7	4	15	18	13	7	7	14	10	16	8	155
No.4 DRILLER	Holes washed out		–	–	–	–	–	–	–	–	–	–	3	3	7	3	–	
No.4 DRILLER	Footage drilled *		450	400	560	645	350	200	750	900	650	350	350	700	500	800	400	
No.4 DRILLER	To date		450	850	1400	2045	2395	2595	3345	4245	4895	5245	5595	6295	6795	7595	7995	7995
No.4 DRILLER	Miles to field		5	4	10	12	12	7	5	7	7	5	3	25	25	22	20	
No.4 DRILLER	Hours travel		1	1	1	1¾	1½	1	1¼	1	1	1	1	1½	1¼	1¼	1½	18
No.4 DRILLER	Hours drilling		10½	11	11½	10¼	9½	10½	10¾	10½	11	11	11	10	10½	11	10½	159½
No.4 DRILLER	Total hours/day *		11½	12	12½	12	11	11½	12	11½	12	12	12	11½	11¾	12¼	12	
No.4 DRILLER	To date		11½	23½	36	48	59	70½	82½	94	106	118	130	141½	153¼	165½	177½	177½
No.4 DRILLER	Footage/drilling hour		42.85	36.36	47.82	62.92	36.84	19.04	69.76	85.71	59.09	31.81	31.81	70.00	47.61	72.72	38.09	
No.5 DRILLER	Holes drilled		12	10	3	0	1	10	15	4	8	10	5	5	15	15	20	133
No.5 DRILLER	Holes washed out		–	–	1	–	1	–	–	–	–	–	2	4	–	–	–	
No.5 DRILLER	Footage drilled *		600	500	195	0	50	500	750	200	400	500	250	250	750	750	1000	
No.5 DRILLER	To date		600	1100	1295	1295	1345	1845	2595	2795	3195	3695	3945	4195	4945	5795	6195	6,795
No.5 DRILLER	Miles to field		7	[illegible]	10	12	12	[illegible]	5	4	7	8	[illegible]	25	25	22	20	
No.5 DRILLER	Hours travel		[illegible]	½	1	½	1	[illegible]	½	½	½	1	[illegible]	2	2	1¾	1½	14¾
No.5 DRILLER	Hours drilling		10½	11½	11	9½	11	[illegible]	12	12	10	11	[illegible]	10	10½	10¼	11	160¾
No.5 DRILLER	Total hours/day *		[illegible]	12	11	10	12	12	12½	12½	10½	12	[illegible]	12	12½	12	12½	
No.5 DRILLER	To date		[illegible]	23	35	45	57	69	81½	94	104½	116½	126½	138½	151	163	175½	175½
No.5 DRILLER	Footage/drilling hour		[illegible]	43.47	17.72	0.00	4.54	45.45	62.50	16.66	40.00	45.45	26.31	25.00	71.42	73.17	90.90	
No.6 DRILLER	Holes drilled		13	15	15	20	0	0	15	25	9	0	0	0	0	5	11	128
No.6 DRILLER	Holes washed out		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
No.6 DRILLER	Footage drilled *		650	750	800	1050	0	0	750	1375	495	0	0	0	0	250	550	
No.6 DRILLER	To date		650	1400	2200	3250	3250	3250	4000	5375	5870	5870	5870	5870	5870	6120	6670	6,670
No.6 DRILLER	Miles to field		7	5	10	10	12	0	5	4	6	7	0	0	0	22	20	
No.6 DRILLER	Hours travel		½	1	1½	2	1½	0	¾	1	¾	¾	0	0	0	1½	1½	12¾
No.6 DRILLER	Hours drilling		9½	12	11½	10½	8½	0	11½	11	11½	9¼	0	0	0	4¼	11	110½
No.6 DRILLER	Total hours/day *		10	13	13	12½	10	0	12¼	12	12¼	10	0	0	0	5¾	12½	
No.6 DRILLER	To date		10	23	36	48½	58½	58½	70¾	82¾	95	105	105	105	105	110¾	123¼	123¼
No.6 DRILLER	Footage/drilling hour		68.42	62.50	69.56	100.00	0.00	0.00	65.21	125.00	43.04	0.00	0.00	0.00	0.00	58.82	50.00	
No.7 DRILLER	Holes drilled		20	19	13	12	9	18	19	15	18	20	17	15	15	16	13	239
No.7 DRILLER	Holes washed out		–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	
No.7 DRILLER	Footage drilled *		1000	950	650	600	450	900	950	750	900	1000	850	750	750	800	650	239
No.7 DRILLER	To date		1000	1950	2600	3200	3650	4550	5500	6250	7150	8150	9000	9750	10,500	11,300	11,950	11,950
No.7 DRILLER	Miles to field		7	6	10	10	10	7	5	7	7	7	4	25	25	22	20	
No.7 DRILLER	Hours travel		1	1	1½	2	1½	2	1	½	1	1	¾	2	2	1½	1	19¾
No.7 DRILLER	Hours drilling		11	11	10½	10	10½	10	11	11½	11	11	11¼	10	10	10½	11	160¼
No.7 DRILLER	Total hours/day *		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	180
No.7 DRILLER	To date		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	180
No.7 DRILLER	Footage/drilling hour		90.90	86.36	61.90	60.00	42.85	90.00	86.56	65.21	81.81	90.90	75.55	75.00	75.00	76.19	59.09	
LOST TIME	Time lost-equipment																	
LOST TIME	Drill No. (see remarks)																	
DOZERS No.1	~~Miles line out~~ Hours Worked		8½	7	0	0	0	5	0	0	4	5	8	0	4	8½	7	57
DOZERS No.1	~~Hours (work & travel)~~ Stand-by				10	10	10	6	10	10		5		10	6	0	0	84
DOZERS No.1	To date																	
DOZERS No.2	~~Miles line out~~ Hours work *		11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
DOZERS No.2	To date																	
WATER TANKS No.1	Hours work		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
WATER TANKS No.1	To date		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	180
WATER TANKS No.2	Hours work		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
WATER TANKS No.2	To date		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	180
PRE-LOADERS No.1	Hours work		13½	13	13½	12½	12½	13	13	12½	12¾	12¾	12½	12½	12½	12	12	
PRE-LOADERS No.1	To date		13½	26½	40	52½	65	78	91	113½	116¼	129	141½	154	166½	178½	190½	190½
PRE-LOADERS No.2	Hours work		12	13	12	12	12	12	12	12	12	12	12	12	12	12	12	
PRE-LOADERS No.2	To date		12	25	37	49	61	73	85	97	109	121	133	145	157	169	181	181
Tool push	Hours work		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Tool push	To date		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	180
Surveyors	Hours work		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
Surveyors	To date		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	150
INVENTORIES	Received POWDER Type 2½" x 5 lb					2000		8000										
INVENTORIES	Used		400	450	480	415	225	520	590	605	620	465	340	380	340	420	470	
INVENTORIES	On hand	2005	1605	1155	675	2200	1975	9455	8865	8260	7640	7175	6835	6455	6115	5695	5225	5,225
INVENTORIES	Received DETS Type 100'																	
INVENTORIES	Used		0	2	0	96	60	192	230	242	134	2	0	4	0	0	0	
INVENTORIES	On hand	1562	1562	1560	1560	1464	1404	1212	982	740	606	604	604	600	600	600	600	600
INVENTORIES	Received DETS Type 80'									360								
INVENTORIES	Used		0	0	0	0	0	0	0	0	0	8	0	0	0	107	152	
INVENTORIES	On hand	0	0	0	0	0	0	0	0	360	360	352	352	352	952	845	693	693
INVENTORIES	Received DETS Type 60'									800								
INVENTORIES	Used		161	118	187	94	24	11	0	0	114	179	136	146	126	51	32	
INVENTORIES	On hand	661	500	382	135	41	17	0	0	800	686	507	371	225	99	48	16	16
INVENTORIES	Received BOOSTERS Type PTN.																	
INVENTORIES	Used		80	90	31	35	48	209	234	136	185	112	82	92	79	105	178	
INVENTORIES	On hand	4160	4080	[illegible]	3833	3804	3156	3541	3313	3177	2992	2880	2798	2706	2627	2522	2344	2344
INVENTORIES	Received CORDTEX Type PTN.																	
INVENTORIES	Used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INVENTORIES	On hand	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'
INVENTORIES	Received BRAN Type												80				80	
INVENTORIES	Used		15½	15½	11	6	5	13	17	11½	15	17½	14	27	34	30	59	
INVENTORIES	On hand	201	185½	170	159	153	148	135	118	106½	91½	74	140	113	79	49	70	70
INVENTORIES	Received MUD Type SALT/FRESH GEL							400										
INVENTORIES	Used		30	29	37½	18	24½	19	22	28	23	35	34	34	57	55	60	
INVENTORIES	On hand	623	599	570	532½	514½	490	871	849	821	798	763	729	695	638	583	523	523
INVENTORIES	Received BITS Type 4½" ROLLER W.M.																	
INVENTORIES	Used		0	0	1	0	0	0	0	1	0	0	0	1	3	2	2	
INVENTORIES	On hand	12	12	12	11	11	11	11	11	10	10	10	10	9	6	4	2	2
INVENTORIES	Received BITS Type 4½" BLADE W.M.							48					48					
INVENTORIES	Used		0	3	6	0	0	0	9	9	9	12	3	9	3	0	0	
INVENTORIES	On hand	115	115	112	106	106	106	154	145	136	127	163	160	151	148	148	148	148
INVENTORIES	Received BITS Type 4¾" BLADE W.M.							48					48					
INVENTORIES	Used		6	9	3	0	3	0	6	12	6	9	6	3	3	7	0	
INVENTORIES	On hand	105	99	90	87	87	84	132	126	114	108	147	141	138	135	128	128	128
INVENTORIES	Received BITS Type 5⅞" VAREL								36									
INVENTORIES	Used		6	6	0	3	0	0	6	3	0	3	0	3	3	0	0	
INVENTORIES	On hand	51	45	39	39	36	36	36	66	63	63	60	60	57	54	54	54	54
INVENTORIES	Received BITS Type 5⅝" VAREL								18									
INVENTORIES	Used		0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	
INVENTORIES	On hand	23	23	23	23	23	23	23	41	41	41	41	41	38	38	38	38	38
INVENTORIES	Received BITS Type WILMAC 5⅞" INSERT																	
INVENTORIES	Used		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INVENTORIES	On hand	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
INVENTORIES	Received TAPES Type DAVIS 4.015" MT.IDC								500									
INVENTORIES	Used		29	0	22	30	19	12	5	28	8	17	26	23	25	21	24	
INVENTORIES	On hand	528	499	499	477	447	428	416	911	883	875	858	832	809	784	763	739	739
INVENTORIES	Received BITS Type VAREL 4¾" BLADES														3			
INVENTORIES	Used														3	0	0	3
INVENTORIES	On hand														0	0	0	0
	No. OF EMPLOYEES		38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	

Days 16–31

Section	Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Reflection	Refraction	Totals
RECORDER	No. of shot points	0	31	33	21	9	22	0	0	16	11	20	14	20	4	13	21	511		
RECORDER	Profiles recorded *	0	31	30	19	9	21	0	0	16	10	20	14	18	4	13	21	499		
RECORDER	To date	272	303	333	352	361	382	382	382	398	408	428	442	461	465	478	499	499		
RECORDER	Miles surface coverage	0	2.9357	3.1251	1.9887	1.4205	2.0834	0	0	1.5152	1.0417	2.4622	1.3258	1.8940	0.3788	1.2311	1.9887	56.4763		
RECORDER	Total depth shots	0	31	30	19	9	21	0	0	16	10	20	14	18	5	13	21	501		
RECORDER	Wx and other	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
RECORDER	Miles to field	–	20	20	20	20	20		0	22	25	25	25	25	25	25	25	—		
RECORDER	MILES SUB-SURFACE TO DATE	33.0854	36.0211	39.1462	41.1349	42.5554	44.6388	44.6388	44.6388	46.1540	47.1957	49.6579	50.9837	52.8777	53.2565	54.4876	56.4763	56.4763		
RECORDER	Hours travel	0	1	1½	1	2	2	0	0	1½	2	2	2	2	2	2	2	39½		
RECORDER	Hours field	0	9	8½	9	8	8	0	0	8½	8	8	8	8	8	8	8	230½		
RECORDER	Hours lost – Weather	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
RECORDER	Hours lost – Equipment	–	–	–	–	–	–	10	10	–	–	–	–	–	–	–	–	20		
RECORDER	~~Hours moving camp~~ STANDBY	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20		
RECORDER	Hours holidays	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
RECORDER	Total hours/day *	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	310		
RECORDER	To date	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	310		
No.1 DRILLER	Holes drilled	15	23	20	8	9	4	11	15	10	15	0	0	0	1	11	11	337		
No.1 DRILLER	Holes washed out	1	–	–	3	2	–	3	2	1	–	–	–	–	–	–	–	21		
No.1 DRILLER	Footage drilled *	750	1150'	1000	400	450	200	550'	750	500	750	0	0	0	170	550	550	17,055'		
No.1 DRILLER	To date	10,035	11,185	12,185	12,585	13,035	13,235'	13,785	14,535	15,035	15,785	15,785	15,785	15,785	15,955	16,505	17,055	17,055'		
No.1 DRILLER	Miles to field	20	22	23	20	21	21	21	25	25	25	25	0	0	25	25	25	—		
No.1 DRILLER	Hours travel	1½	2	2	2	1½	1½	1½	1½	1½	1½	2	0	0	3	2	2	42		
No.1 DRILLER	Hours drilling	10½	10½	10¼	10½	10½	10½	10½	10½	10½	10½	8	0	0	3	10	8¼	284¼		
No.1 DRILLER	Total hours/day *	12	12½	12¼	12½	12	12	12	12	12	12	10	0	0	6	12	10¼	326¼		
No.1 DRILLER	To date	178¾	191¼	203½	216	228	240	252	264	276	288	298	298	298	304	316	326¼	326¼		
No.1 DRILLER	Footage/drilling hour (under total only)	71.42	109.52	97.56	38.09	42.85	19.04	52.38	71.42	47.61	71.42	0.00	0.00	0.00	56.66	55.00	66.66	61.30		
No.2 DRILLER	Holes drilled	20	15	17	19	14	9	15	16	25	10	21	10	20	10	25	4	473		
No.2 DRILLER	Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	4		
No.2 DRILLER	Footage drilled *	1000	750	895	1,190	700	450	750	800	1,250	500	1,050	500	1000	500	1,250	380	24,715'		
No.2 DRILLER	To date	12,750	13,500	14,395	15,585	16,285	16,735	17,485	18,285	19,535	20,035	21,085	21,585	22,585	23,085	24,335	24,715	24,715'		
No.2 DRILLER	Miles to field	20	22	23	20	21	21	21	25	25	25	25	25	25	25	25	35	—		
No.2 DRILLER	Hours travel	2	2	2	2	1½	1½	1½	2	2	2	2	2	2	2	2	2½	52¼		
No.2 DRILLER	Hours drilling	9	10	10	10	10½	10½	10½	10	10	8	10	10	10	9½	10	9½	316		
No.2 DRILLER	Total hours/day *	11	12	12	12	12	12	12	12	12	10	12	12	12	11½	12	12	368¼		
No.2 DRILLER	To date	190¾	202¾	214¾	226¾	238¾	250¾	262¾	274¾	286¾	296¾	308¾	320¾	332¾	349¼	356¼	368¼	368¼		
No.2 DRILLER	Footage/drilling hour (under total only)	111.11	75.00	89.50	119.00	66.66	42.85	71.42	80.00	125.00	62.50	105.00	50.00	100.00	52.63	125.00	40.00	79.78		
No.3 DRILLER	Holes drilled	25	15	12	19	18	15	10	9	16	18	20	20	27	17	9	7	499		
No.3 DRILLER	Holes washed out	–	–	–	3	–	–	–	–	–	–	–	–	–	–	2	–	10		
No.3 DRILLER	Footage drilled *	1,250	750	600	950	900	750	500	450	800	900	1,000	1,000	1,350	1,090	675	560	25,625		
No.3 DRILLER	To date	13,350	14,100	14,700	15,650	16,550	17,300	17,800	18,250	19,050	19,950	20,950	21,950	23,300	24,390	25,065	25,625	25,625		
No.3 DRILLER	Miles to field	20	22	23	20	21	21	21	25	25	25	25	25	25	25	25	35	—		
No.3 DRILLER	Hours travel	1	2	2	1¾	1½	1½	1½	1¾	2	1¾	2	2	2	2	3	2½	50		
No.3 DRILLER	Hours drilling	11¼	10	10	10	10½	10½	8½	8½	10	10¼	10	10	10	9	8¾	9½	306		
No.3 DRILLER	Total hours/day *	12¼	12	12	11¾	12	12	10	10¼	12	12	12	12	12	11	11¾	12	356		
No.3 DRILLER	To date	181¼	193¼	205¼	217	229	241	251	261¼	273¼	285¼	297¼	309¼	321¼	332¼	344	356	356		
No.3 DRILLER	Footage/drilling hour (under total only)	111.11	75.00	60.00	95.00	85.71	71.42	58.82	52.94	80.00	87.80	100.00	100.00	135.00	121.11	77.14	58.99	82.76		
No.4 DRILLER	Holes drilled	12	20	7	12	9	9	13	15	20	10	15	15	25	10	10	0	357		
No.4 DRILLER	Holes washed out	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	18		
No.4 DRILLER	Footage drilled *	600	1,000	350	660	450	450	650	750	1,000	500	750	750	1250	500	500	0	18,155		
No.4 DRILLER	To date	8595	9,595	9,945	10,605	11,055	11,505	12,155	12,905	13,905	14,405	15,155	15,905	17,155	17,655	18,155	18,155	18,155		
No.4 DRILLER	Miles to field	20	22	20	20	21	21	21	25	25	25	25	25	25	25	25	35	—		
No.4 DRILLER	Hours travel	1½	1½	1¾	2	2	2	2	2	2	2	2	2	2	2	2	0	46¾		
No.4 DRILLER	Hours drilling	10½	10½	9¼	10	10	10	10	10	10	10	10	10	10	10	10¼	10	320		
No.4 DRILLER	Total hours/day *	12	12	11	12	12	12	12	12	12	12	12	12	12	12	12¼	10	366¾		
No.4 DRILLER	To date	189½	201½	212½	224½	236½	248½	260½	272½	284½	296½	308½	320½	332½	344½	356¾	366¾	366¾		
No.4 DRILLER	Footage/drilling hour (under total only)	57.14	95.23	37.83	66.00	45.00	45.00	65.00	75.00	100.00	50.00	75.00	75.00	125.00	50.00	48.78	0.00	58.75		
No.5 DRILLER	Holes drilled	20	20	10	10	15	0	15	20	24	15	20	14	20	7	7	8	358		
No.5 DRILLER	Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8		
No.5 DRILLER	Footage drilled *	1,000	1,000	500	650	750	0	750	1,000	1,200	750	1000	700	1,000	350	350	400	18,195		
No.5 DRILLER	To date	7,295	8,795	9,295	9,945	10,695	10,695	11,445	12,445	13,645	14,395	15,395	16,095	17,095	17,445	17,795	18,195	18,195		
No.5 DRILLER	Miles to field	20	22	23	20	21	0	21	25	25	25	25	25	25	25	25	25	—		
No.5 DRILLER	Hours travel	2	2	2	2	2	0	2	1½	1½	1½	2	2	2	1¾	2	2	43		
No.5 DRILLER	Hours drilling	10½	10½	10½	10	10	10	9½	11	11	10½	9¾	10	9¾	9¼	10	8	321		
No.5 DRILLER	Total hours/day *	12½	12½	12½	12	12	10	11½	12½	12½	12	11¼	12	11¾	11	12	10	364		
No.5 DRILLER	To date	188	200½	213	225	237	247	258½	271	283½	295½	307¼	319¼	331	342	354	364	364		
No.5 DRILLER	Footage/drilling hour (under total only)	95.23	95.23	47.61	65.00	75.00	0.00	78.94	90.90	109.09	71.42	102.56	70.00	102.56	37.83	35.00	50.00	60.21		
No.6 DRILLER	Holes drilled	20	20	15	12	11	7	15	13	3	20	10	10	20	11	20	6	341		
No.6 DRILLER	Holes washed out	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3		
No.6 DRILLER	Footage drilled *	1,000	1,000	750	600	550	350	750	650	150	1,000	500	500	1,000	660	1,200	505	17,835		
No.6 DRILLER	To date	7670	8,670	9,420	10,020	10,570	10,920	11,670	12,320	12,470	13,470	13,970	14,470	15,470	16,130	17,330	17,835	17,835		
No.6 DRILLER	Miles to field	20	22	23	20	21	21	21	25	25	25	25	25	25	25	25	35	—		
No.6 DRILLER	Hours travel	2	2	2	1¾	2	1¾	1¾	1½	1½	1½	6½	2	2	1¾	2	4½	49¼		
No.6 DRILLER	Hours drilling	11	11	11	11	10½	10½	9¾	11	8½	10½	5	10	10	10	10¼	8	268½		
No.6 DRILLER	Total hours/day *	13	13	13	12¾	12½	12¼	11½	12½	10	12	11½	12	12	11¾	12¼	12½	317¾		
No.6 DRILLER	To date	136¼	149¼	162¼	175	187½	199¾	211¼	223¾	233¾	245¾	257¼	269¼	281¼	293	305¼	317¾	317¾		
No.6 DRILLER	Footage/drilling hour (under total only)	90.90	90.90	68.18	54.54	52.38	33.33	76.92	59.09	17.64	95.23	100.00	50.00	100.00	66.00	117.07	63.12	66.16		
No.7 DRILLER	Holes drilled	22	17	19	19	19	11	15	10	26	14	25	15	20	11	21	3	506		
No.7 DRILLER	Holes washed out	3	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	6		
No.7 DRILLER	Footage drilled *	1100	850	980	1,220	950	550	750	500	1,300	700	1,250	750	1,000	660	1,050	420	25,980		
No.7 DRILLER	To date	13,050	13,900	14,880	16,100	17,050	17,600	18,350	18,850	20,150	20,850	22,100	22,850	23,850	24,510	25,560	25,980	25,980		
No.7 DRILLER	Miles to field	20	22	23	20	21	21	21	25	25	25	25	25	25	25	25	25	—		
No.7 DRILLER	Hours travel	1½	1½	2	2	1½	2	2	2	2	2	2	2	2	1	2	2	49¼		
No.7 DRILLER	Hours drilling	10½	10½	10	10	10½	10	10	10	10	10	10	14	10	11	10	10	326¾		
No.7 DRILLER	Total hours/day *	12	12	12	12	12	12	12	12	12	12	12	16	12	12	12	12	376		
No.7 DRILLER	To date	192	204	216	228	240	252	264	276	288	300	312	328	340	352	364	376	376		
No.7 DRILLER	Footage/drilling hour (under total only)	104.76	80.95	98.00	122.00	90.47	55.00	75.00	50.00	130.00	70.00	125.00	53.57	100.00	60.00	105.00	42.00	79.97		
LOST TIME	Time lost-equipment																			
LOST TIME	Drill No. (see remarks)																			
DOZERS No.1	~~Miles line out~~ Hours Worked													8½	9½	9½	8½	93		
DOZERS No.1	~~Hours (work & travel)~~ Stand-by													0	0	0	0	84		
DOZERS No.1	To date																			
DOZERS No.2	~~Miles line out~~ Hours work *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1½	12½		
DOZERS No.2	To date																			
WATER TANKS No.1	Hours work	12	12	12	12	12	12	12	10	12	12	12	16	12	12	12	12	374		
WATER TANKS No.1	To date	192	204	216	228	240	252	264	274	286	298	310	326	338	350	362	374	374		
WATER TANKS No.2	Hours work	12	12	12	12	12	12	12	12	12	12	12	16	12	12	12	12	376		
WATER TANKS No.2	To date	192	204	216	228	240	252	264	276	288	300	312	328	340	352	364	376	376		
PRE-LOADERS No.1	Hours work	12½	13	12½	12½	12½	12	12	12	12	11½	12	12	12	12	12	12½	385½		
PRE-LOADERS No.1	To date	203	216	228½	241	253½	265½	277½	289½	301½	313	325	337	349	361	373	385½	385½		
PRE-LOADERS No.2	Hours work	12	12	12	12	12	12	12	12	12	11	12	12	12	12	10	10	368		
PRE-LOADERS No.2	To date	193	205	217	229	241	253	265	277	289	300	312	324	336	348	358	368	368		
Tool push	Hours work	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	372		
Tool push	To date	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	372		
Surveyors	Hours work	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	310		
Surveyors	To date	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	310		
INVENTORIES	Received POWDER Type 2½" x 5 lb	4000					4000											18,000		
INVENTORIES	Used	670	650	520	470	475	280	480	525	625	520	570	460	635	450	570	170	14,850		
INVENTORIES	On hand	8555	7905	7385	6915	6440	10,160	9680	9155	8530	8010	7440	6980	6345	5895	5325	5155	5155		
INVENTORIES	Received DETS Type 100'		600			200												800		
INVENTORIES	Used	0	0	0	54		2	0	5	0	0	0	0	0	20	67	46	1156		
INVENTORIES	On hand	600	1,200	1,200	1146	1,346	1,344	1344	1339	1339	1339	1339	1339	1339	1319	1252	1206	1206		
INVENTORIES	Received DETS Type 80'		1,000			400												2360		
INVENTORIES	Used	265	260	32	16	82	0	0	0	3	0	0	90	0	6	85	34	1140		
INVENTORIES	On hand	428	1168	1136	1120	1438	1438	1438	1438	1435	1435	1435	1345	1345	1339	1254	1220	1220		
INVENTORIES	Received DETS Type 60'		540			1600												2940		
INVENTORIES	Used	9	0	176	121	108	112	192	194	238	205	228	76	258	140	68	20	3,590		
INVENTORIES	On hand	7	547	371	250	1742	1630	1438	1244	1006	801	573	497	239	99	31	11	11		
INVENTORIES	Received BOOSTERS Type PTN.	2,000						2000										4000		
INVENTORIES	Used	268	135	104	94	95	56	96	113	119	93	114	81	131	76	106	34	3,531		
INVENTORIES	On hand	4076	3941	3837	3743	3648	3592	5,496	5,383	5264	5171	5057	4976	4845	4769	4663	4629	4629		
INVENTORIES	Received CORDTEX Type PTN.																	0		
INVENTORIES	Used	0	0	0	0	0	0	0	0	0	0	0	225'	0	0	0	0	225'		
INVENTORIES	On hand	1140'	1190'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	1140'	915'	915'	915'	915'	915'	915'		
INVENTORIES	Received BRAN Type			20	300													480		
INVENTORIES	Used	39	15	24	16	26	38	16	25	14	15	7	3½	4	20	26	28	607½		
INVENTORIES	On hand	31	16	12	296	270	232	216	191	177	162	155	151½	147½	127½	101½	73½	73½		
INVENTORIES	Received MUD Type SALT/FRESH GEL			369													400	1169		
INVENTORIES	Used	49	34	37	24	57	55	27	42	34	23	14	9	23	27	23	28	1012		
INVENTORIES	On hand	474	440	772	748	691	636	609	567	533	510	496	487	464	437	414	786	786		
INVENTORIES	Received BITS Type 4½" ROLLER W.M.			12														12		
INVENTORIES	Used	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	12		
INVENTORIES	On hand	1	1	13	13	13	13	13	13	13	13	13	13	12	12	12	12	12		
INVENTORIES	Received BITS Type 4½" BLADE W.M.																	96		
INVENTORIES	Used	3	0	0	0	3	0	3	0	3	0	0	3	0	0	0	0	78		
INVENTORIES	On hand	145	145	145	145	142	142	139	139	136	136	136	133	133	133	133	133	133		
INVENTORIES	Received BITS Type 4¾" BLADE W.M.															48		144		
INVENTORIES	Used	7	0	3	0	3	3	3	6	3	0	0	12	3	0	0	6	122		
INVENTORIES	On hand	121	121	118	118	115	112	109	103	100	100	100	88	85	85	133	127	127		
INVENTORIES	Received BITS Type 5⅞" VAREL					36												72		
INVENTORIES	Used	0	0	0	0	0	0	3	3	0	0	0	0	3	0	3	0	45		
INVENTORIES	On hand	54	54	54	54	90	90	87	84	84	84	84	84	81	81	78	78	78		
INVENTORIES	Received BITS Type 5⅝" VAREL					36												54		
INVENTORIES	Used	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
INVENTORIES	On hand	38	38	38	38	74	74	74	74	74	74	74	74	74	74	74	74	74		
INVENTORIES	Received BITS Type WILMAC 5⅞" INSERT																	0		
INVENTORIES	Used	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
INVENTORIES	On hand	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
INVENTORIES	Received TAPES Type DAVIS 4.015" MT.IDC																	500		
INVENTORIES	Used	0	32	31	20	10	22	0	0	17	10	21	15	19	6	14	22	528		
INVENTORIES	On hand	739	707	676	656	646	624	624	624	607	597	576	561	542	536	522	500	500		
INVENTORIES	Received BITS Type VAREL 4¾" BLADES																	3		
INVENTORIES	Used	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
INVENTORIES	On hand	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	No. OF EMPLOYEES	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38			

REMARKS

Day	Remarks
1	RECORDING CREW LINE #3. SHOOTING 800' SPLITS.
2	RECORDING CREW ON STANDBY WAITING ON HOLES. DRILLING CONDITIONS BAD. SURVEYORS ON LINE #3. CAT ON LINE #3.
3	DRILLING VERY SLOW DUE TO CAVITIES AND LIMESTONE. DRILL ON LINE #3. RECORDER ON LINE #5.
4	RECEIVED 2000 lb x 2½" GEOPHEX. RECORDING CREW ON LINE #5. SHOOTING 500' OFFEND. DRILLS ON LINE #4.
5	DRILL #6 BROKEN DOWN. RECORDER SHOOTING 800' SPLITS ON LINE #3. DRILLS ON LINE #4. BAD DRILLING AND BOGGED.
6	RECEIVED 400 BAGS 'SALT GEL' AND 48 x 4½" W.M. & 48 x 4¾" W.M. BLADES. RECEIVED 8000 lb x 2½" GEOPHEX. DRILL #6 BOGGED.
7	DRILLS ON LINE #22. RECORDER ON LINE #3 OFFSETS. DRILLING FAIR. RECEIVED 36 x 5⅞" & 18 x 5⅝" BLADES. 500 DAVIS TAPES.
8	RECEIVED 960 x 80' & 800 x 60' DETS. RECORDER SHOOTING LINE #22. DRILLS ON LINE #4. SURVEYORS ON LINE #6. RECORD QUALITY FAIR.
9	DRILLS ON LINES #4 & #6. RECORDER SHOOTING OFFENDERS LAKE GEORGE AND LINE #4. DOZER WALKING TO LAKE ELIZA.
10	RECEIVED 48 x 4½" & 48 x 4¾" BLADES. DRILLS ON LINE #6. RECORDER ON LINE #4. SURVEYORS ON LINE #11. DRILLING CONDITIONS BAD.
11	DRILL #6 REPLACING ENGINE. DRILLS ON LINE #6. RECORDER ON LINE #4. SURVEYORS & DOZER ON LINES #11 & #17.
12	DRILLS ON LINE #11. SURVEYORS ON LINE #8. RECORDER ON LINES #4 & #6. LINE #7 BOGGY. RECEIVED 80 BAGS BRAN. DRILL #6 ENGINE CHANGE.
13	RECORDING CREW ON LINE #6. DRILLS ON LINE #11. DRILLING BAD. SURVEYORS ON LINES #7 & #8. DRILL #6 ENGINE CHANGE.
14	RECORDING CREW LINE #11. DRILLING NOT VERY GOOD.
15	RECORDING CREW FINISHED LINE #11. RECEIVED 4000 lb x 2½" GEOPHEX & 2000 BOOSTERS. DRILLING BAD. START OF LINE #8. RECEIVED 80 BAGS BRAN.
16	RECORDING CREW ON STANDBY. DRILLING GOOD. BISCUIT VAN BROKEN DOWN.
17	RECORDING CREW & DRILLS ON LINE #8. DRILLING FAIR. RECEIVED 640 x 100'; 960 x 80'; 540 x 60' DETS.
18	RECEIVED 16 TONS 'SALT GEL', 12 x 4½" ROCK BITS.
19	RECEIVED 300 BAGS BRAN. DRILLS ON LINE #10. DRILLING POOR.
20	DRILLS ON LINE #10. DRILLING POOR. RECORDING CREW FINISHED LINE #8. MOVED TO LINE #10. RECEIVED 36 x 5⅝" BLADES. 25 lb GEOPHEX, 10 x 60' DETS, 5 BOOSTERS BOOKED OUT INCORRECTLY.
21	RECEIVED 4000 lb x 2½" GEOPHEX & 2000 BOOSTERS. DRILL #5 BROKEN DOWN.
22	DRILLS MOVED ON TO LINE #9. RECORDING INSTRUMENTS BROKEN DOWN DUE TO FAULTY WIRING.
23	INSTRUMENTS BROKEN DOWN. DRILLS ON LINE #9. DRILLING FAIR.
24	DRILLS FINISHED LINE #9, MOVED TO LINE #12. DRILLING FAIR. RECORDING CREW ON LINE #10.
25	ADJUSTMENTS TO CAPS CAUSED BY ERRORS IN SHOOTER'S REPORT. DRILL #2, 3 HRS. BREAKDOWN. DRILL #1 U/S AT 1645 HRS. RECEIVED 700 HOLE PLUGS.
26	SURVEYORS IN LUCINDALE AREA. DRILLS ON LINES #12 & #7. RECORDER ON LINE #9. RECORD QUALITY FAIR. DRILL #1 U/S.
27	DRILL #1 U/S. RECORD QUALITY POOR/FAIR. DRILLING CONDITIONS FAIR. RECORDER ON LINE #9. DOZER ON LINE #15.
28	DRILL #1 U/S. DRILLING CONDITIONS GOOD. RECORD QUALITY FAIR. DOZER LINE #15.
29	RECORDER TEST SHOOTING LINE #7. DRILLS ON LINE #7, SOME STANDBY. DOZER AND SURVEYORS ON LINE #15. RECEIVED 48 x 4¾" BLADES. POOR. DRILL #1 U/S.
30	DRILL #1 U/S. DRILLS ON LINE #12. DRILL #3 TEST DRILLING LUCINDALE AREA. DOZER AND SURVEYORS ON LINE #15. RECORD QUALITY FAIR.
31	RECEIVED 48 x 4¾" BLADES. RECEIVED 400 BAGS 'SALT GEL'. SURVEYORS AND DOZER LINE #15. RECORDERS – POOR RECORD QUALITY. DRILLING BAD.

GEOPHYSICAL ASSOCIATES INTERNATIONAL

Party 6 Period Ending 31ST MARCH 1969

Client ESSO STANDARD OIL (AUST.) N.L.

Area O.E.L.-22 Tenement 063A

State SOUTH AUSTRALIA Country AUSTRALIA

	Locations (Prospect or Camp)	From	To	Headquarters
1	"WOAKWINE"	1-3-69	THRU 31-3-69	BRISBANE, Q.
2				
3				
4				

ENV 990 II – 1

— GEOPHYSICAL ASSOCIATES INTERNATIONAL —
SEISMIC PRODUCTION REPORT

NOTES

* Denotes check totals which should appear on print in RED INK

☐ Denotes refraction statistics.

BASIC CREW TIME

Carry Over	693
Current	300
Total Hours	993
Contract	993
Carry Over	993

PROFILES

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Line	Line 12	Line 9	Line 7	Line 7	Line 15	Line 15	Line 7	Line 15	Line 15	Line 15	Line 16	Line 16	Line 16	Line 16	Line 14
Profiles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Day	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Line	Line 14	Line 21	Line 21	Line 21	Line 21	Line 18	Line 18	Line 18	Line 20	Line 20	Line 21	Line 21	Line 21	Line 23	Line 17	
Profiles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

RECORDER

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No. of shot points	16	22	25	28	20	1	18	19	16	26	22	24	21	16	23
Profiles recorded *	11	15	23	27	20	1	18	19	14	26	22	24	19	13	21
To date	11	26	49	76	96	97	115	134	148	174	196	220	239	252	273
Miles sub surface coverage	2.0834	2.6516	2.9357	2.6516	1.8940	0.0947	2.2728	1.7993	1.5152	3.0304	2.0834	2.2728	1.9887	2.0834	2.1781
Total depth shots	11	15	24	27	21	6	18	19	14	26	22	24	19	13	21
Wx and other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miles to field	25	25	25	25	35	35	25	35	35	35	35	35	35	35	35
Total miles sub-surface	2.0834	4.7350	7.6707	10.3223	12.2163	12.3110	14.5838	16.3831	17.8983	20.9287	23.0121	25.2849	27.2736	29.3570	31.5351
Hours travel	2	2	2	2	3	2	2	2½	2	2	3	2	2	2	2
Hours field	8	8	8	8	7	8	8	7½	8	8	7	8	8	8	8
Hours lost – Weather	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hours lost – Equipment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hours ~~moving camp~~ Standby	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hours holidays	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total hours/day *	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
To date	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
No. of shot points	28	14	0	32	24	19	27	25	35	34	28	25	32	1	26	647
Profiles recorded *	22	14	0	24	23	19	23	24	34	34	26	19	31	1	25	592
To date	295	309	309	333	356	375	398	422	456	490	516	535	566	567	592	592
Miles sub surface coverage	3.2198	1.3258	0	3.0304	2.8410	1.7993	2.5569	2.9357	3.3145	3.7880	2.6516	2.3675	3.5986	0.0947	2.4622	67.5211
Total depth shots	22	18	0	24	23	19	23	24	34	34	26	19	31	5	25	607
Wx and other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
Miles to field	35	10	0	15	15	15	15	10	10	10	12	14	20	20	20	—
Total miles sub-surface	34.7549	36.0807	36.0807	39.1111	41.9521	43.7514	46.3083	49.2440	52.5585	56.3465	58.9981	61.3656	64.9642	65.0589	67.5211	67.5211
Hours travel	2	1	0	1½	1½	1	1	1	1	1	1	1	1	1	1½	49
Hours field	8	9	0	8½	8½	9	9	9	9	9	9	9	9	9	8½	241
Hours lost – Weather	–	–	10	–	–	–	–	–	–	–	–	–	–	–	–	10
Hours lost – Equipment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
Hours ~~moving camp~~ Standby	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
Hours holidays	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
Total hours/day *	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	300
To date	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	300

DRILLS — No. 1 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	5	8	9	9	7	7	12	7	3	3	4	3	10	4	9
Holes washed out	–	–	–	–	–	1	–	–	–	–	–	2	–	–	–
Footage drilled *	395	680	607	545	260	470	780	455	210	240	320	240	500	320	510
To date	395	1075	1682	2227	2487	2957	3737	4192	4402	4642	4962	5202	5702	6022	6532
Miles to field	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Hours travel	2½	2½	2½	2½	2½	2½	2½	2¾	2½	2¾	2¼	2½	2½	2½	1½
Hours drilling	9¼	9¼	9½	9½	10	9½	9½	9½	9	10	9¾	10¼	9½	9½	10¾
Total hours/day *	11¾	11¾	12	12	12½	12	12	12¼	11½	12¾	12	12¾	12	12	12¼
To date	11¾	23½	35½	47½	60	72	84	96¼	107¾	120½	132½	145¼	157¼	169¼	181½
Footage/drilling hour (under total only)	42.70	73.51	63.89	57.36	26.00	49.47	82.10	47.89	23.33	24.00	32.82	23.41	52.63	33.68	46.30

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	20	25	0	17	11	8	11	18	16	12	16	8	7	5	6	280
Holes washed out	–	3	–	–	1	1	–	–	–	–	–	–	–	4	–	12
Footage drilled *	1000	1250	–	850	550	400	550	900	800	600	800	400	350	250	300	15,532'
To date	7532	8782	8782	9632	10182	10582	11132	12,032	12,832	13,432	14,232	14,632	14,982	15,232	15,532	15,532'
Miles to field	10	10	10	15	15	15	15	15	15	15	16	16	20	20	20	—
Hours travel	¾	1	1	1	1	1	1½	1	1¼	1½	1½	1½	1½	1	2½	55¾
Hours drilling	11¼	11½	9	9	9	9	8½	9	8¾	8½	8½	8½	8½	9	7½	280¼
Total hours/day *	12	12½	10	10	10	10	10	10	10	10	10	10	10	10	10	336
To date	193½	206	216	226	236	246	256	266	276	286	296	306	316	326	336	336
Footage/drilling hour (under total only)	88.88	108.69	0	94.44	61.11	44.44	64.70	100.00	88.88	65.00	94.11	47.06	41.18	28.66	40.00	56.69'

DRILLS — No. 2 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	6	9	6	12	10	5	10	13	5	4	4	2	5	7	5
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Footage drilled *	465	695	400	600	650	315	650	845	400	320	320	160	250	410	280
To date	465	1160	1560	2160	2810	3125	3775	4620	5020	5340	5660	5820	6070	6480	6760
Miles to field	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Hours travel	2½	2½	2½	2½	2½	2	2	2	2	2	2	2	2½	2	2
Hours drilling	9½	9½	9½	9½	9½	8	10	10	9	10	10	9	9½	9½	10
Total hours/day *	12	12	12	12	12	10	12	12	11	12	12	11	12	11½	12
To date	12	24	36	48	60	70	82	94	105	117	129	140	152	163½	175½
Footage/drilling hour (under total only)	48.95	73.15	42.10	63.15	68.42	39.37	65.00	84.50	44.44	32.00	32.00	17.77	26.31	43.15	28.00
Breakdown hours claimed [24 hours]															

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	17	30	12	15	9	9	16	21	19	18	21	0	11	9	3	313
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Footage drilled *	875	1500	600	750	450	450	800	1050	950	900	1050	0	550	450	200	17,335'
To date	7635	9135	9735	10485	10935	11385	12185	13,235	14,185	15,085	16,135	16,135	16,685	17,135	17,335	17,335'
Miles to field	10	10	10	15	15	15	15	15	15	15	17	17	20	20	20	—
Hours travel	1¼	1	1	1	1	1	1	1	1	1	1	0	1½	1½	2	49¼
Hours drilling	10¾	11	9	9	9	9	9	9	9	9	9	0	8½	8½	8	270¼
Total hours/day *	12	12	10	10	10	10	10	10	10	10	10	0	10	10	10	329½
To date	187½	199½	209½	219½	229½	239½	249½	259½	269½	279½	289½	299½	309½	319½	329½	329½
Footage/drilling hour (under total only)	81.39	136.36	66.66	83.33	50.00	50.00	88.88	116.66	105.55	100.00	116.66	0.00	64.70	52.94	25.00	63.67'
Breakdown hours claimed [24 hours]												10				10

DRILLS — No. 3 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	8	11	9	9	0	5	10	8	2	5	3	2	8	4	6
Holes washed out	–	–	1	–	–	–	–	2	1	–	–	–	–	–	–
Footage drilled *	825	840	685	660	–	340	570	530	160	400	240	160	430	230	330
To date	825	1665	2350	3010	3010	3350	3920	4450	4610	5010	5250	5410	5840	6070	6400
Miles to field	35	35	35	35	–	35	35	35	35	35	35	35	35	35	35
Hours travel	2½	2½	2½	2½	–	2½	2½	2½	2½	2½	2¼	2¼	2¼	2¼	1¼
Hours drilling	9	9¼	9¼	9½	–	9¼	9	9	8½	9½	9¼	9½	10	9¾	10
Total hours/day *	11½	11¾	11¾	12	–	11¾	11½	11½	11	12	11½	11¾	12¼	12	11¼
To date	11½	23¼	35	47	57	68¾	80¼	91¾	102¾	114¾	126¼	138	150¼	162¼	173½
Footage/drilling hour	91.66	90.81	74.05	69.47	0.00	36.75	63.33	58.88	18.82	42.10	25.94	16.84	43.00	23.59	33.00
Breakdown hours claimed [24 hours]					10										

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	20	17	7	11	11	6	12	12	18	21	18	16	0	0	0	269
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
Footage drilled *	1000	850	350	550	550	300	600	600	900	1050	900	800	0	0	0	14,850'
To date	7400	8250	8600	9150	9700	10000	10600	11,200	12,100	13,150	14,060	14,860	14,850	14,860	14,850	14,850'
Miles to field	10	10	10	15	15	15	15	15	15	15	17	20	–	–	–	—
Hours travel	¾	1	1	1	1	1	1	1	1½	1½	1½	1½	0	0	0	46½
Hours drilling	11¼	11¾	9	9	9	9	9	9	8½	8½	8½	8½	0	0	0	241¾
Total hours/day *	12	12¾	10	10	10	10	10	10	10	10	10	10	10	0	0	308¼
To date	185½	198¼	208¼	218¼	228¼	238¼	248¼	258¼	268¼	278¼	288¼	298¼	308¼	308¼	308¼	308¼
Footage/drilling hour (under total only)	88.88	72.34	38.88	61.11	61.11	33.33	66.66	66.66	105.88	123.52	105.88	94.11	0.00	0.00	0.00	61.79'
Breakdown hours claimed [24 hours]													10			20

DRILLS — No. 4 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	3	8	7	9	3	6	4	10	4	4	2	3	5	6	4
Holes washed out	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–
Footage drilled *	405	465	318	565	195	390	260	650	275	305	160	210	250	360	230
To date	405	870	1188	1753	1948	2338	2598	3248	3523	3828	3988	4198	4448	4808	5038
Miles to field	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Hours travel	2	2	2	2½	2	2	2	2	2	2	2½	2	2	2	1¼
Hours drilling	10	10	10	9½	8	10	8	10	9¼	10	9½	10	10	10	10¾
Total hours/day *	12	12	12	12	10	12	10	12	11¼	12	12	12	12	12	12
To date	12	24	36	48	58	70	80	92	103¼	115¼	127¼	139¼	151¼	163¼	175¼
Footage/drilling hour (under total only)	40.50	46.50	31.80	59.47	24.37	39.00	32.50	65.00	29.73	30.50	16.84	21.00	25.00	36.00	20.90

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	8	20	4	11	7	12	22	13	24	21	14	1	8	4	7	254
Holes washed out	–	1	–	–	–	–	–	–	–	–	–	4	–	1	–	8
Footage drilled *	400	1000	200	550	350	600	1100	650	1200	1050	700	50	400	200	350	13,838'
To date	5438	6438	6638	7188	7538	8138	9238	9888	11,088	12,138	12,838	12,888	13,288	13,488	13,838	13,838'
Miles to field	10	10	10	15	15	15	15	15	15	16	16	20	20	20	20	—
Hours travel	1	1¾	1¾	1	1	1	1	1¼	1	1½	1½	2	1½	3	2¾	53¼
Hours drilling	11	10¼	8¼	9	9	9	9	8¾	9	8½	8½	8	8½	7	7¼	276
Total hours/day *	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	329¼
To date	187¼	199¼	209¼	219¼	229¼	239¼	249¼	259¼	269¼	279¼	289¼	299¼	309¼	319¼	329¼	329¼
Footage/drilling hour (under total only)	36.36	97.56	24.24	61.11	38.88	66.66	122.22	72.20	133.33	116.66	82.35	6.25	47.06	28.55	48.27	67.43'

DRILLS — No. 5 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	5	7	3	8	10	8	0	0	0	0	0	7	12	9	12
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–
Footage drilled *	370	410	240	685	710	410	–	–	–	–	–	410	600	480	660
To date	370	780	1020	1705	2415	2825	2825	2825	2825	2825	2825	3235	3835	4315	4975
Miles to field	35	35	35	35	35	35	35	–	–	–	–	35	35	35	35
Hours travel	3	3	2½	2½	2½	2¾	0	–	–	–	–	2½	2½	2½	1¾
Hours drilling	10	10	9¼	9¼	9¼	10	0	–	–	–	–	9¾	9¼	10½	11
Total hours/day *	13	13	11¾	11¾	11¾	12¾	0	–	–	–	–	12¼	11¾	13	12¾
To date	13	26	37¾	49½	61¼	74	84	84	84	84	84	96¼	108	121	133¾
Footage/drilling hour	37.00	41.00	25.94	74.05	76.75	41.00	0	0	0	0	0	42.05	64.86	45.71	60.00
Breakdown hours claimed [24 hours]							10								

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	30	30	10	16	20	15	14	18	20	21	21	21	20	5	16	358
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Footage drilled *	1500	1500	500	800	1000	750	700	900	1000	1050	1050	1050	1000	250	800	18,825'
To date	6475	7975	8475	9275	10,275	11,025	11,725	12,625	13,625	14,675	15,725	16,775	17,775	18,025	18,825	18,825'
Miles to field	10	10	10	15	15	15	15	15	15	15	16	20	20	20	20	—
Hours travel	1	1½	1	1	1	1	1	1	1	1	1	1	1½	2¼	1¾	43½
Hours drilling	11	10½	9	9	9	9	9	9	9	9	9	9	8½	7¾	8¼	234¼
Total hours/day *	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	287¾
To date	145¾	157¾	167¾	177¾	187¾	197¾	207¾	217¾	227¾	237¾	247¾	257¾	267¾	277¾	287¾	287¾
Footage/drilling hour (under total only)	136.36	142.85	55.55	88.88	111.11	83.33	77.77	100.00	111.11	116.66	116.66	116.66	117.64	32.25	96.96	80.48
Breakdown hours claimed [24 hours]																10

DRILLS — No. 6 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	9	5	7	8	9	8	12	12	5	4	1	0	5	6	1
Holes washed out	–	–	–	–	–	–	1	–	1	2	–	2	–	–	3
Footage drilled *	835	325	610	515	565	520	780	780	325	480	80	0	250	480	50
To date	835	1160	1770	2285	2850	3370	4150	4930	5255	5735	5815	5815	6065	6545	6595
Miles to field	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Hours travel	2½	2¾	3	2½	2½	2½	2¾	2½	2½	2¾	2	3	2	2	1½
Hours drilling	9½	9	8½	9½	9	9	9¾	9½	9	9¼	10	7	9½	10	11
Total hours/day *	12	11¾	11½	12	11½	11½	12½	12	11½	12	12	10	11½	12	12½
To date	12	23¾	35¼	47¼	58¾	70¼	82¾	94¾	106¼	118¼	130¼	140¼	151¾	163¾	176¼
Footage/drilling hour	87.89	36.11	71.76	54.21	62.77	57.77	80.00	82.10	36.11	51.89	8.00	0.00	26.31	48.00	4.55

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	17	20	11	20	20	20	0	19	20	21	21	21	16	12	12	342
Holes washed out	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	16
Footage drilled *	850	1000	550	1000	1000	1000	0	950	1000	1050	1050	1050	800	600	600	19,095'
To date	7445	8445	8995	9995	10995	11995	11995	12,945	13,945	14,995	16,045	17,095	17,895	18,495	19,095	19,095'
Miles to field	10	10	10	15	15	15	15	15	15	15	16	20	20	20	20	—
Hours travel	1	1½	1	1	1	1	–	1¼	1	1	1	1	1½	2½	2	54½
Hours drilling	11	10½	9	9	9	9	–	8¾	9	9	9	9	8½	7½	8	265¾
Total hours/day *	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	330¼
To date	188¼	200¼	210¼	220¼	230¼	240¼	250¼	260¼	270¼	280¼	290¼	300¼	310¼	320¼	330¼	330¼
Footage/drilling hour	77.27	95.23	61.11	111.11	111.11	111.11	0.00	108.57	111.11	116.66	116.66	116.66	47.05	80.00	75.00	71.01
Breakdown hours claimed (24 hours)							10									10

DRILLS — No. 7 Driller

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Holes drilled	7	8	7	10	6	5	10	10	5	4	2	4	9	5	2
Holes washed out	–	1	1	–	–	–	–	–	–	–	–	2	–	2	–
Footage drilled *	810	790	560	650	480	325	650	650	325	320	160	290	450	370	160
To date	810	1600	2160	2810	3290	3615	4265	4915	5240	5560	5720	6010	6460	6830	6990
Miles to field	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Hours travel	2	2	2	3	3	3	3	3	3	3	2	2	3	3	2
Hours drilling	10	10	10	9	9	9	9	9	9	6½	10	10	9	9	9
Total hours/day *	12	12	12	12	12	12	12	12	12	9½	12	12	12	12	11
To date	12	24	36	48	60	72	84	96	108	117½	129½	141½	153½	165½	176½
Footage/drilling hour (under total only)	81.00	79.00	56.00	72.22	53.33	36.11	72.22	72.22	36.11	49.23	16.00	29.00	50.00	41.11	17.77

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Holes drilled	17	15	9	15	9	12	18	15	15	18	16	14	14	4	8	293
Holes washed out	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	9
Footage drilled *	1255	750	450	750	450	600	900	750	750	900	800	700	700	285	400	17,430'
To date	8245	8995	9445	10195	10645	11245	12145	12895	13,645	14,545	15,345	16,045	16,745	17,030	17,430	17,430'
Miles to field	10	10	10	15	15	15	15	15	16	15	16	20	20	20	20	—
Hours travel	1	1½	1	1	1	1	1	1	1	1	1	1	1	2½	3	58
Hours drilling	11	10½	7½	9	9	9	9	9	9	9	9	9	9	7½	7	271
Total hours/day *	12	12	8½	10	10	10	10	10	10	10	10	10	10	10	10	329
To date	188½	200½	209	219	229	239	249	259	269	279	289	299	309	319	329	329
Footage/drilling hour (under total only)	114.09	71.42	52.94	83.33	50.00	66.66	100.00	83.33	83.33	100.00	88.88	77.77	77.77	38.00	57.11	63.53'

Lost time: Time lost-equipment; Drill No. (see remarks)

DOZERS — No. 1

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
~~Miles line cut~~ Hours Work	8½	3	6½	0	0	0	0	0	0	0	0	0	0	0	0
Hours ~~(work & travel)~~ Standby	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
~~To date~~ To Date	8½	11½	18	18	18	18	18	18	18	18	18	18	18	18	18

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
~~Miles line cut~~ Hours Work	0	0	0	0	8½	6½	0	0	1	0	0	0	0	0	3	37
Hours ~~(work & travel)~~ Standby	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
~~To date~~ To Date	18	18	18	18	26½	33	33	33	34	34	34	34	34	34	37	37

DOZERS — No. 2: Miles line cut; Hours (work & travel) *; To date — no entries.

WATER TANKS, PRE-LOADERS, TOOL PUSH, SURVEYORS

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Water Tanks No. 1 – Hours work	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Water Tanks No. 1 – To date	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
Water Tanks No. 2 – Hours work	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Water Tanks No. 2 – To date	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
Pre-Loaders No. 1 – Hours work	12	11½	12¾	12	12½	12	12¾	14	12½	12	12	12½	11½	12	12
Pre-Loaders No. 1 – To date	12	23½	36¼	48¼	60¾	72¾	85½	99½	112	124	136	148½	160	172	184
Pre-Loaders No. 2 – Breakdown hours claimed (24)			10			10									
Pre-Loaders No. 2 – Hours work	10	10	0	10	12	0	0	12	12	12	12	12	12	10	10
Pre-Loaders No. 2 – To date	10	20	20	30	42	42	42	54	66	78	90	102	114	124	134
Tool push – Hours work	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Tool push – To date	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
Surveyors – Hours work	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Surveyors – To date	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Water Tanks No. 1 – Hours work	12	12	8½	10	10	10	10	10	10	10	10	10	10	10	10	332½
Water Tanks No. 1 – To date	192	204	212½	222½	232½	242½	252½	262½	272½	282½	292½	302½	312½	322½	332½	332½
Water Tanks No. 2 – Hours work	12	12	8½	6	10	10	10	10	10	10	10	10	10	10	10	328½
Water Tanks No. 2 – To date	192	204	212½	218½	228½	238½	248½	258½	268½	278½	288½	298½	308½	318½	328½	328½
Pre-Loaders No. 1 – Hours work	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	338
Pre-Loaders No. 1 – To date	196	208	218	228	238	248	258	268	278	288	298	308	318	328	338	338
Pre-Loaders No. 2 – Breakdown hours claimed (24)																20
Pre-Loaders No. 2 – Hours work	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	284
Pre-Loaders No. 2 – To date	144	154	164	174	184	194	204	214	224	234	244	254	264	274	284	284
Tool push – Hours work	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	334
Tool push – To date	192	204	214	224	234	244	254	264	274	284	294	304	314	324	334	334
Surveyors – Hours work	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	300
Surveyors – To date	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	300

INVENTORIES

Item	On hand	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Received Powder Type 2½" x 5 lb.				4000								6000				
Used Geophex – Anzite Blue		215	270	235	340	540	855	1135	1070	280	250	170	195	275	300	285
On hand	5180	4965	4695	8460	8120	7580	6725	5590	4520	4240	3990	9820	9625	9350	9050	8765
Received Dets Type 100'																
Used		112	116	102	26	4	2	0	11	36	22	8	16	61	1	0
On hand	1206	1094	978	876	850	846	844	844	833	797	775	767	751	690	689	689
Received Dets Type 80'																
Used		2	4	28	117	110	82	118	100	10	34	18	30	10	44	72
On hand	1220	1218	1214	1186	1069	959	877	759	659	649	615	597	567	557	513	441
Received Dets Type 60'				1200												
Used		6	0	0	17	0	0	0	0	0	0	0	0	50	39	14
On hand	11	5	5	1205	1188	1188	1188	1188	1188	1188	1188	1188	1188	1138	1099	1085
Received Boosters Type P.T.N.																
Used		47	54	47	66	50	44	59	58	23	25	13	22	54	40	43
On hand	4629	4582	4528	4481	4415	4365	4321	4262	4204	4181	4156	4143	4121	4067	4027	3984
Received Cordtex Type P.T.N.																
Used		0	0	0	0	0	0	0	0	0	0	280'	0	0	0	225
On hand	915'	915'	915'	915'	915'	915'	915'	915'	915'	915'	915'	635'	635'	635'	635'	410'
Received Bran Type 150 lb.				100	250											
Used		28	29	24½	14	7	12	6	1	5	4	25	26	15	45	24
On hand	93½	65½	36½	112	348	341	329	323	322	317	313	288	262	247	202	178
Received Mud Type 80 lb.																384
Used Salt Gell – Macgogel		30	37	31	52	37	52	30	25	48	45	61	53	24	67	36
On hand	786	756	719	688	636	599	547	517	492	444	399	338	285	261	194	542
Received Bits Type 4½"																
Used W.M. Chevron		3	12	9	4	6	3	0	4	0	0	0	0	6	0	0
On hand	133	130	118	109	105	99	96	96	92	92	92	92	92	86	86	86
Received Bits Type 4¾"																
Used W.M. Chevron		9	0	3	0	12	3	0	3	0	6	0	3	3	15	0
On hand	127	118	118	115	115	103	100	100	97	97	91	91	88	85	70	70
Received Bits Type 4½"																12
Used W.M. Rock		0	1	0	0	0	0	0	5	0	1	1	1	0	0	0
On hand	12	12	11	11	11	11	11	11	6	6	5	4	3	3	3	15
Received Bits Type 5⅛"																36
Used S.K. Blades		0	0	3	0	0	0	0	21	27	9	3	0	0	0	0
On hand	78	78	78	75	75	75	75	75	54	27	18	15	15	15	15	51
Received Bits Type 5⅝"																
Used S.K. Blades		0	0	3	0	0	0	0	3	0	15	0	0	7	0	0
On hand	74	74	74	71	71	71	71	71	68	68	53	53	53	46	46	46
Received Bits Type 5⅛"																
Used Insert		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On hand	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Received Tapes Type Magnetic																
Used Davis – [4.015"]		12	16	28	28	22	7	19	21	15	27	23	25	20	15	22
On hand	500	488	472	444	416	394	387	368	347	332	305	282	257	237	222	200

Item	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Reflection
Received Powder Type 2½" x 5 lb.									2500							12,500
Used Geophex – Anzite Blue	650	795	260	520	450	405	515	570	680	665	645	380	390	220	120	13,680
On hand	8115	7320	7060	6540	6090	5685	5170	4600	6420	5755	5110	4730	4340	4120	4000	4,000
Received Dets Type 100'																0
Used	0	0	0	0	0	9	0	74	137	0	0	0	2	18	0	757
On hand	689	689	689	689	689	680	680	606	469	469	469	469	467	449	449	449
Received Dets Type 80'																0
Used	2	0	0	0	38	38	184	150	10	0	0	0	0	0	0	1201
On hand	439	439	439	439	401	363	179	29	19	19	19	19	19	19	19	19
Received Dets Type 60'									2000							3200
Used	248	318	104	208	142	45	20	0	0	257	252	148	156	50	48	2122
On hand	837	519	415	207	65	20	0	0	2000	1743	1491	1343	1187	1137	1089	1089
Received Boosters Type P.T.N.																0
Used	126	154	52	104	90	83	103	114	136	133	126	73	78	35	23	2075
On hand	3858	3704	3652	3548	3458	3375	3272	3158	3022	2889	2763	2690	2612	2577	2554	2554
Received Cordtex Type P.T.N.									2000'							2000'
Used	0	0	0	0	0	0	0	90	0	0	130	130	0	0'	0'	855'
On hand	410'	410'	410'	410'	410'	410'	410'	320'	2320'	2320'	2190'	2060'	2060'	2060'	2060'	2060'
Received Bran Type 150 lb.						26	90									466
Used	12	7	5	6	13	32	22	12	5	8	5	4	6	9	10	421½
On hand	166	159	154	148	135	129	197	185	180	172	167	163	157	148	138	138
Received Mud Type 80 lb.																384
Used Salt Gell – Macgogel	11	4	8	12	14	52	31	16	16	13	24	21	11	32	35	928
On hand	531	527	519	507	493	441	410	394	378	365	341	320	309	277	242	242
Received Bits Type 4½"																0
Used W.M. Chevron	0	3	0	0	15	3	0	9	6	9	8	0	3	3	3	109
On hand	86	83	83	83	68	65	65	56	50	41	33	33	30	27	24	24
Received Bits Type 4¾"							48		48							48
Used W.M. Chevron	14	3	18	4	12	0	3	6	12	6	9	3	0	3	3	153
On hand	56	53	35	31	19	19	64	58	94	88	79	76	76	73	70	70
Received Bits Type 4½"																12
Used W.M. Rock	0	0	1	1	3	0	0	0	0	0	0	0	0	0	1	15
On hand	15	15	14	13	10	10	10	10	10	10	10	10	10	10	9	9
Received Bits Type 5⅛"																36
Used S.K. Blades	0	3	3	3	0	3	0	0	0	0	0	0	3	0	0	78
On hand	51	48	45	42	42	39	39	39	39	39	39	39	36	36	36	36
Received Bits Type 5⅝"																0
Used S.K. Blades	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	31
On hand	46	46	46	46	43	43	43	43	43	43	43	43	43	43	43	43
Received Bits Type 5⅛"																0
Used Insert	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	3
On hand	4	4	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Received Tapes Type Magnetic							500									500
Used Davis – [4.015"]	23	19	0	25	24	20	24	25	35	35	27	20	32	6	26	641
On hand	177	158	158	133	109	89	565	540	505	470	443	423	391	385	359	359

ENV 990 - 12

No. of employees	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38

REMARKS

Correction to carry over powder from March due to error having been over looked on shooters report. Correction to carry over bran invoicing error.

1. Recorders completed line #12. Drills & surveyors + dozer on line #15. Drilling conditions – extremely poor. Record quality poor.
2. Recorders completed line #9. Drills on line #15; surveyors on line #16. Drilling conditions poor. Record quality very poor.
3. Recorders completed southern section line #7. Drills line #15 – conditions poor for drilling. Dozer surveyors on line #15. Received 4000 lb powder, 1200 60' dets.
4. Recorders on line 7 (northern section). Drills #15; surveyors #13. Drilling conditions poor. Received 250 bags bran and 100 bags on 3-4-69.
5. Recorders on line #15. Record quality variant – necessitates test shooting. Drilling conditions bad.
6. Test programme on line #15. Will shoot single holes on flat areas with increased charge.
7. Recorders completed line #7 – drills on #15; surveyors on line #16. Dozer shut down. Drills #5 u/s.
8. Recorders on line #15. Drills on line #15 & #16. Surveyors on line #14. Very windy. Drills #5 u/s.
9. Recorders line #15. Drills on #16. Surveyors line #14. Record quality fair.
10. Drilling conditions difficult lines 15 & 16 [illegible] hard limestone & flint [illegible]. Record quality fair. Surveyors line #21.
11. Record quality fair – drilling poor. Surveyors line #14. Dozer shut down and returned to contractor. Received 6000 lb Geophex.
12. Record quality poor – fair. Drills on #16 & #14. Surveyors on #21.
13. Windy – wet. Drilling fair. Record quality fair – drilling poor. Surveyors on #14. Wet, windy.
14. Recorders completed line #16. Drilling slow. Line #21 all chained and half surveyed.
15. Recorders on line #14. Drilling slow. Line #21 all surveyed. Received 400 bags salt gell. Drills on line #21. Received 12 [illegible] rock & 36 5⅛ [illegible].
16. Drills on line #21 to drill test patterns for seismogram quality control and test line. Recorders on #14 @ 125' [illegible] spacing & 10,680 [illegible].
17. Recorders on #21. Drilling good. Rainy. Wet.
18. Rain – wet. Drilling good. Recorder crew repairing cables.
19. Recorders on line #21. Drilling good. Drills on #20.
20. Recording crew completed #21. Drilling good. Drills #18.
21. Recorders line #18. Drilling good.
22. Recorders #18. Received 48 4¾" WM. Received 90 bran. Drilling good.
23. Recorders completed line #18. Drills on #21. Surveyors line #20.
24. Recorders on line #20. Drills on #21; surveyors on #17. Received 2500 lb 2½ Geophex, 2000 60' dets, 2000 cordtex.
25. Recorders completed #20. Drills on #17. Surveyors on #17. Record quality fair/poor. Drilling good.
26. Recorders on #21. Drill on 17. Surveyors on 19.
27. Record quality – poor – fair. Drills on 17 & 19. Surveyors on 19.
28. Recorders completed #21. Drills on #17. Surveyors #23. Record quality fair – poor. Drilling good. Drill #3 u/s.
29. Recorders & drills on test programme line #23. Drills then on line #19 & #23. Drill #3 u/s.
30. Recorders on #17. Drills on #19 & #23. Drill #3 u/s.

GEOPHYSICAL ASSOCIATES INTERNATIONAL

Party: VI Period Ending: April 30th 1969

Client: Esso Standard Oil [Aust.] N.L.

Area: O.E.L.-22 Tenement: 069.A.

State: South Australia Country: Australia

Locations (Prospect or Camp)	From	To	Headquarters
1 "Workwine"	1.4.69	thru 30.4.69	Brisbane
2			
3			
4			

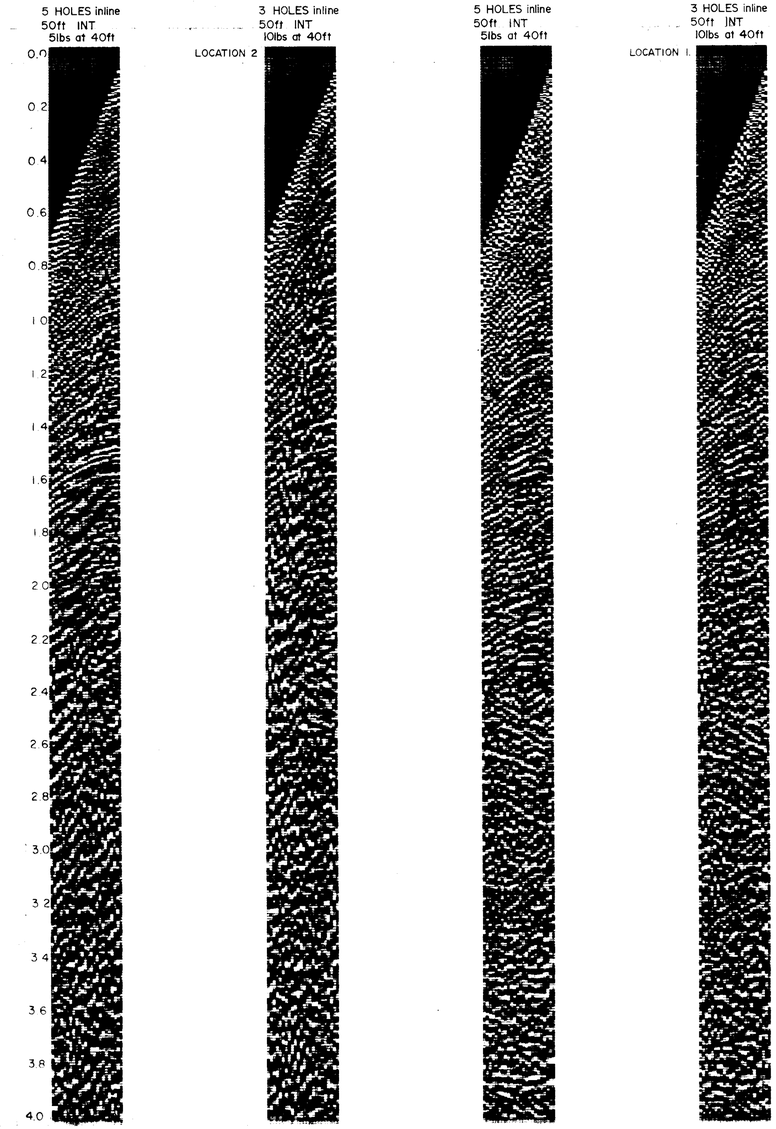
ENV 990 II -2

ENV 990. - 13

NEG.

SHOT POINT ARRAY COMPARISONS

S.P. OFFSET=400ft inline GROUP INT.=200ft
24 SEISES inline/GP 10ft INT. 230ft ARRAY FILTER=OUT/OUT



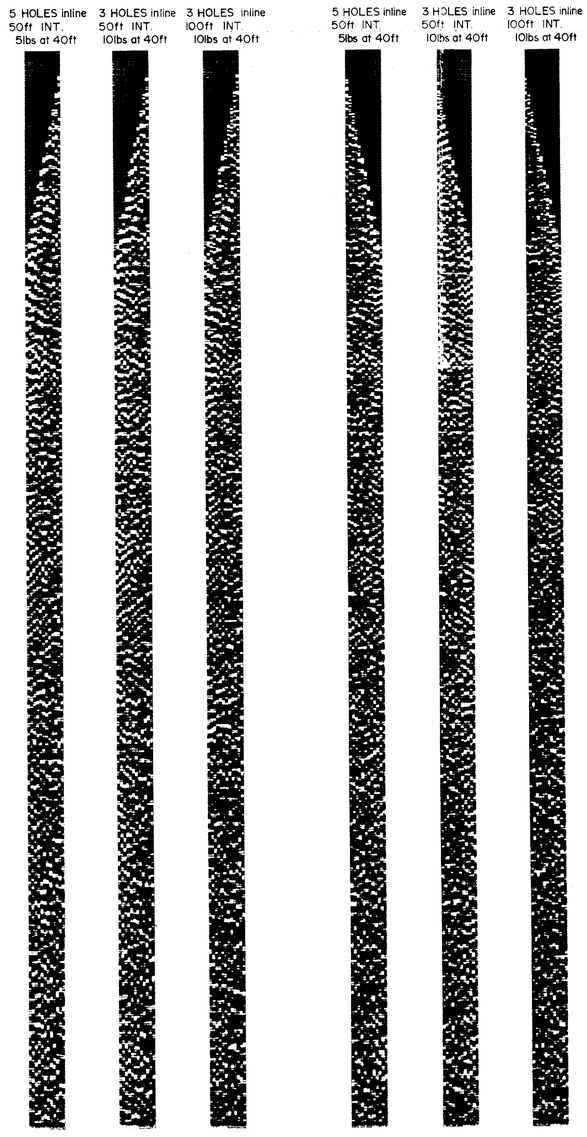
OTWAY LAND
SOUTH AUSTRALIA
FOR
ESSO STANDARD OIL (AUSTRALIA) PTY LTD

SEISMOMETER ARRAY & SHOT POINT ARRAY COMPARISONS

S.P. OFFSET=400ft inline GROUP INT.=200ft
FILTER=OUT/OUT

To accompany: 0.69 A SEISMIC SURVEY
FINAL SUBSIDY REPORT
APPENDIX 2
LINE 0.69 A - 1 Shot point 45
TEST 4

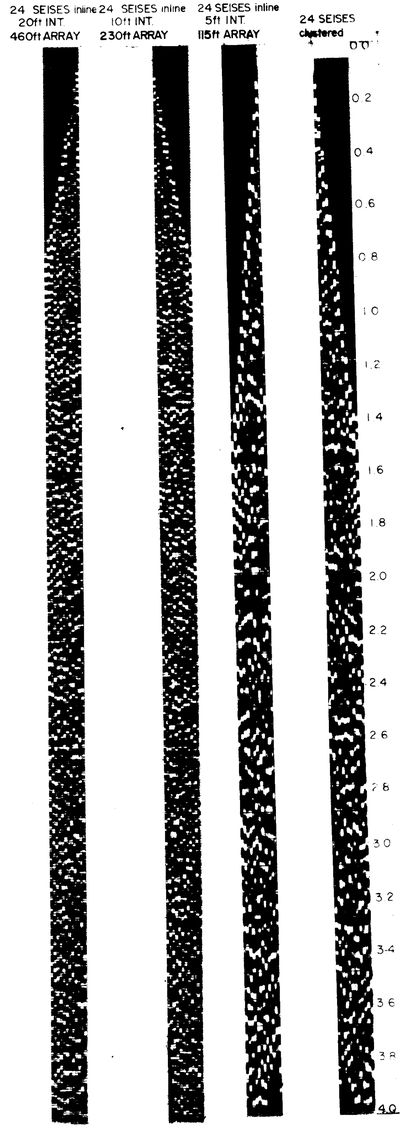
24 SEISES inline/GP 10ft INT. 230ft ARRAY



24 SEISES clustered

SEISMOMETER ARRAY COMPARISONS

SINGLE HOLE 15lbs at 40ft
S.P. OFFSET=400ft inline GROUP INT.=200ft
FILTER=OUT/OUT



ENV 990 II - 3

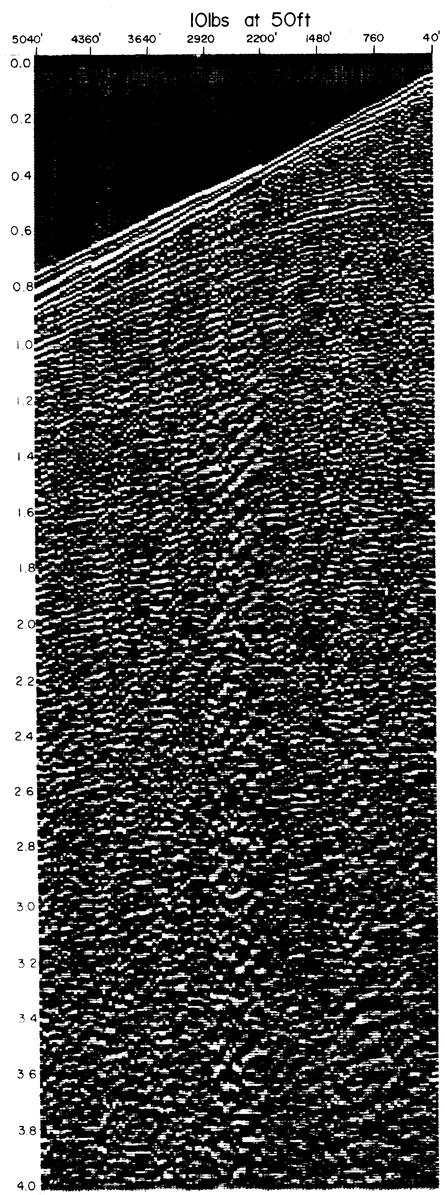
NEG.

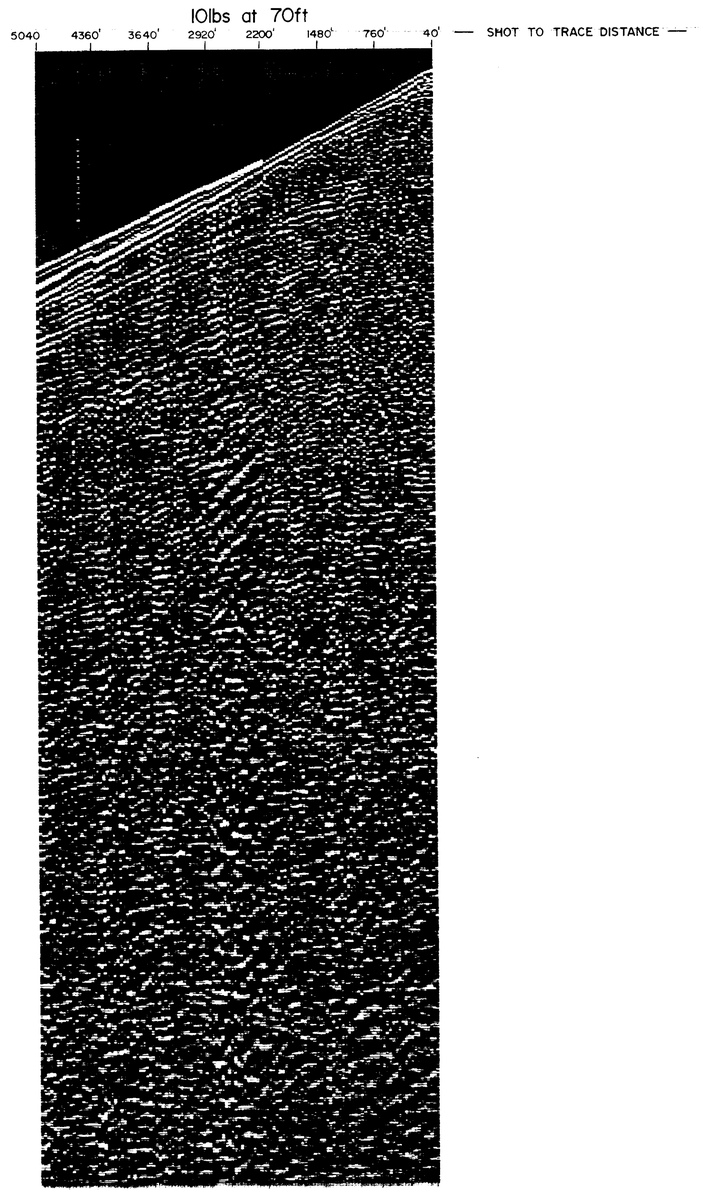
OTWAY LAND
SOUTH AUSTRALIA
FOR
ESSO STANDARD OIL (AUSTRALIA) PTY LTD

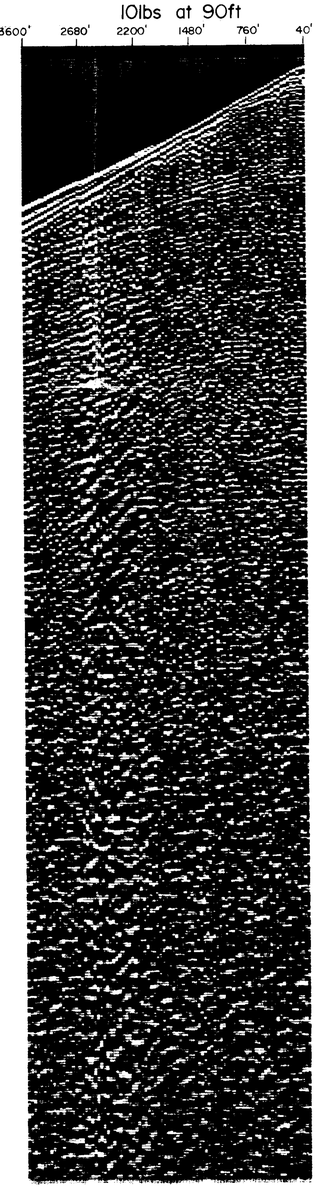
ENV 990 - 14

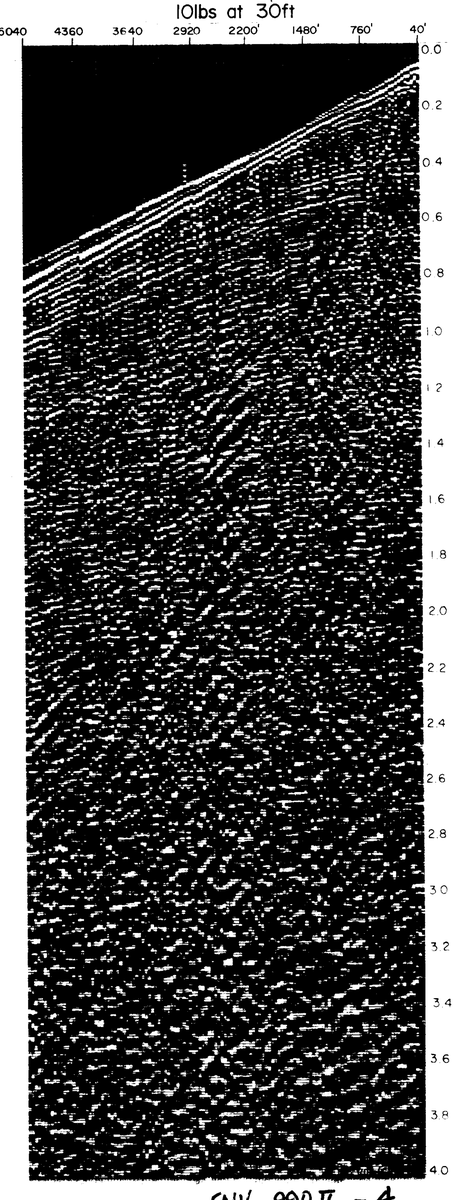
NOISE ANALYSIS — INLINE
SINGLE HOLE
FILTER : OUT/OUT

To accompany 0 69 A SEISMIC SURVEY
FINAL SUBSIDY REPORT
APPENDIX 2
TEST 2 & 3
LINE 0 69 A - 1 Shot point 1









ENV 990 II - 4

ENV 990 - 15

NEG.

OTWAY LAND SOUTH AUSTRALIA

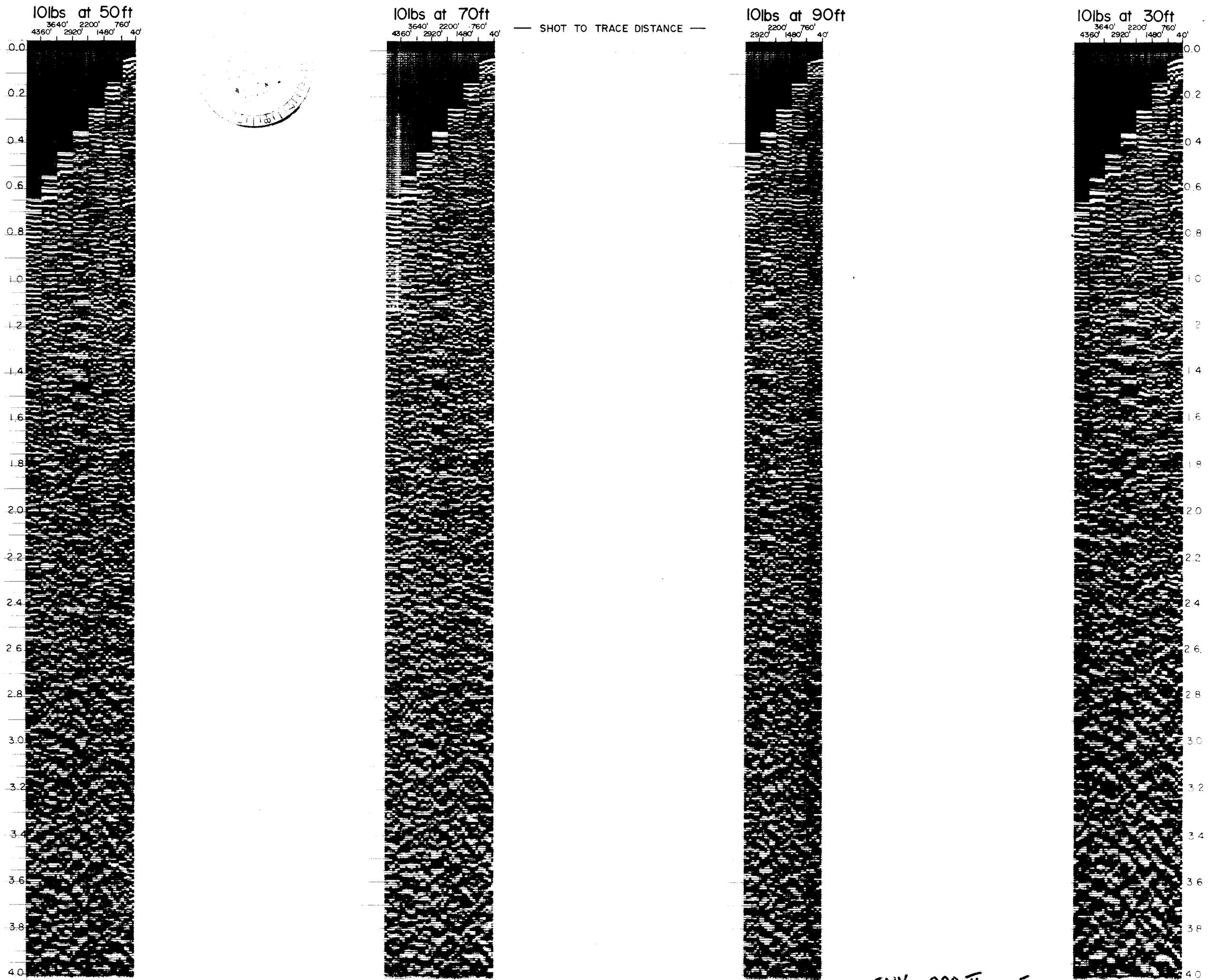
FOR

ESSO STANDARD OIL (AUSTRALIA) PTY LTD

NOISE ANALYSIS – BROADSIDE

SINGLE HOLE FILTER: OUT/OUT

To accompany : 0 69 A SEISMIC SURVEY
FINAL SUBSIDY REPORT
APPENDIX 2
TEST 1
LINE 0 69 A – 1 Shot point 1 – 5



ENV 990 II – 5

24 Tr GATHER 4 CDP (6 FOLD)
T/D (2-64) Pt Up / Tr
T/F 20-60Hz 500ms
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

400'Tr

5000'Tr

LINE 069A-|

S.P. 25

X max = 5000'

OTWAY BASIN
PROCESSED BY G S I PTY 851

24 MOVEOUT SCAN 1

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1 Tr No.

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 ▲T secs

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

SP 25

ENV 990 II - 6

24 Tr GATHER 4 CDP (6 FOLD)
FVD (2-64) Ft Op/Tr
F/F 20-60Hz 500ms 5000'Tr
15-55 " 600
10-50 " 700
10-40 " 800
10-30 " 400
400'Tr

LINE 069A-|
S.P. 61
X max = 5000'

OTWAY BASIN
PROCESSED BY G S [illegible] PTY 851

▲T secs
Trace No. ▲

24 MOVEOUT SCAN

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6

760 720 680 640 600 560 520 480 440 400 360 320 280 240 200 160 120 80 040 000

SP 61

ENV 990 II -17

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = =
10-50 = = 700 = = =
10-40 = = 1000 = = =
10-30 = 1400 = =

LINE 069A-|
S.P. 100
X max = 5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

400' Tr. 5000' Tr.

MOVEOUT SCAN

24 1

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760

▲T secs. ← Trace No.

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0

Rec 72.0

ENV 990 II-78

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = = =
10-50 = 700
10-40 1000
10-30 1400

LINE 069A-1
S.P. 121
X max = 5000

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 85!

400' Tr. 5000' Tr.

MOVEOUT SCAN

▲T. Tr. secs ↓

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

ENV 990 II -19

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = = =
10-50 = 700
10-40 1000
10-30 1400

LINE 069A-1
S.P. 156
X max = 5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

400' Tr. 5000' Tr.

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 ▲T secs ↓ Tr

24 MOVEOUT SCAN 1 96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0

069-1 SP 156

ENV 990 II -20

24 Tr. GATHER 4 CDP(6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = =
10-50 = = 700 = = =
10-40 = = 1000 = = =
10-30 = 1400 = =

LINE 069A-2
S.P 187
X max=5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

400'Tr. 24 MOVEOUT SCAN 1 5000'Tr.

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 ▲T secs. ↓ Trace No. ↓

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0

Rec 1220
26

ENV 990II-21

24 Tr. GATHER 4 CDP(6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = = 600 = =
10-50 = = 700 = =
10-40 = = 1000 = =
10-30 = = 1400 = =

LINE 069A-2
S.P. 265
X max = 5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

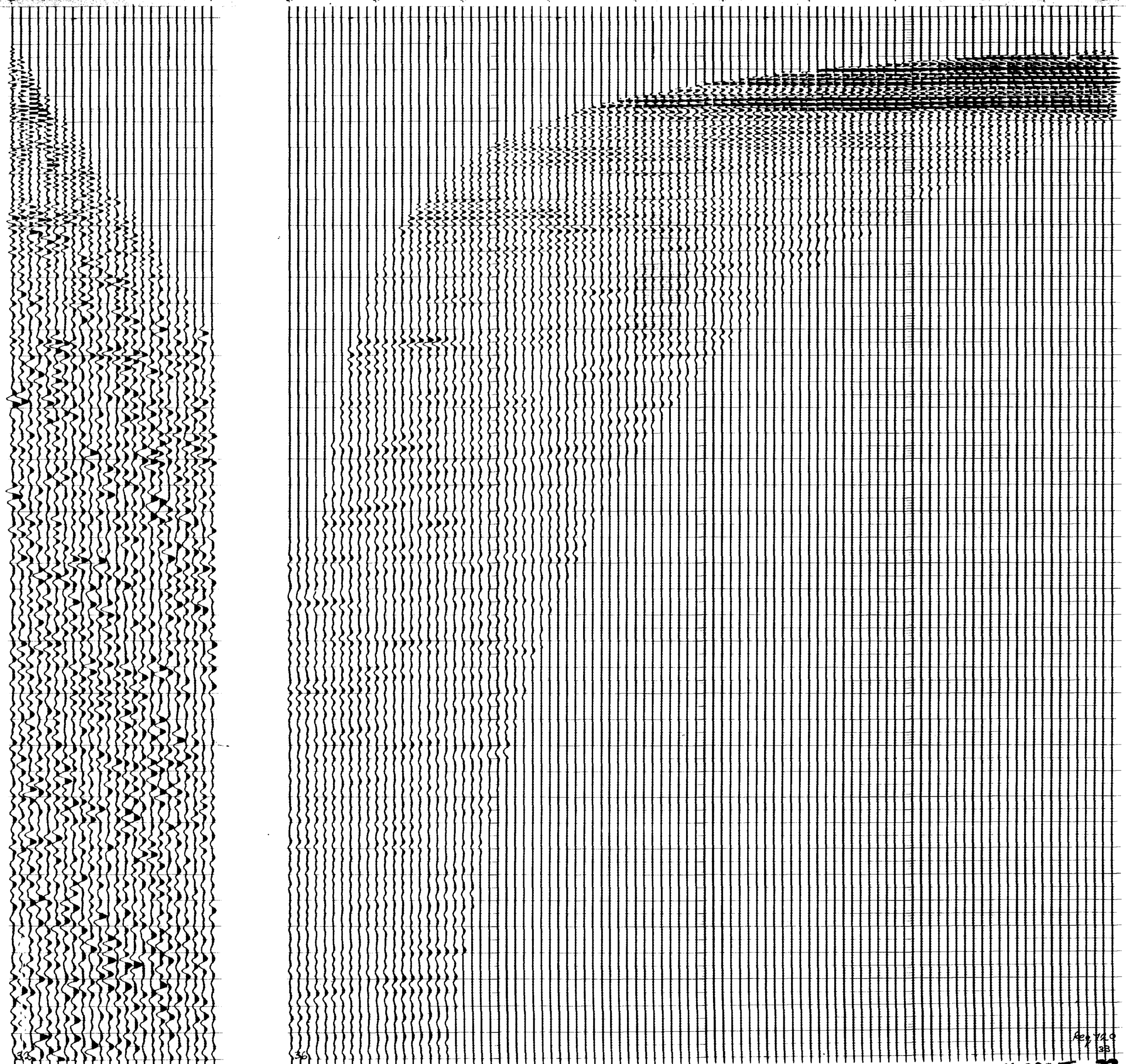
400' Tr. 24 MOVEOUT SCAN 1 5000' Tr.

ΔT secs. ↓ 1

Trace No. 1

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1



33 36

Rec. 72.0
13B

ENV 990 II - 22

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64) Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = = =
10-50 = 700
10-40 1000
10-30 1400

400'Tr. 5000'Tr.

LINE 069A-2

S.P. 432
X max = 5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 85!

▲T secs ↓ Trace No. ↓

Tr. 1 · 6 · 11 · 16 · 21 · 26 · 31 · 36 · 41 · 46 · 51 · 56 · 61 · 66 · 71 · 76 · 81 · 86 · 91 · 96 ·

760 · 720 · 680 · 640 · 600 · 560 · 520 · 480 · 440 · 400 · 360 · 320 · 280 · 240 · 200 · 160 · 120 · 080 · 040 · 000

MOVEOUT SCAN

24 · 1 ·

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

50% 50%

067 069-2 SP 432 Reg 903 64

ENV 990 II - 23

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

▲T secs ↓ | Trace No. ↓

·760 Tr. 1
·720 6
·680 11
·640 16
·600 21
·560 26
·520 31
·480 36
·440 41
·400 46
·360 51
·320 56
·280 61
·240 66
·200 71
·160 76
·120 81
·080 86
·040 91
·000 96

LINE 069A-3
S.P. 466
X max = 6250'

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64) Pt. Op./Tr.)
TVF 20-60Hz. 500ms.
15-55 " 600 " " "
10-50 " 700 " " "
10-40 1000 " "
10-30 1400 " "

6250' Tr. 1

MOVEOUT SCAN

500' Tr. 24

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0

24 Tr. GATHER 2 CDP (12 FOLD)
TVD (2-64) Pt Op/Tr)
TVF 20-60Hz 500ms.
15-55 " 600 " "
10-50 " 700 " "
10-40 " 1000 " "
10-30 " 1400 " "

LINE 069A-3
S.P. 503
X max = 4200'

OTWAY BASIN
PROCESSED BY G.S.I. PTY 851

4200' Tr. 24 ... MOVEOUT SCAN ... 1 4200' Tr.

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 ▲T secs. ↓

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1 Trace No. ↓

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0

Req 903

ENV 990 II – 25

24 Tr GATHER 4 CDP(6 FOLD)
TVD (2-64) Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = =
10-50 = = 700 = =
10-40 = = 1000 = =
10-30 = = 1400 = =

LINE 069A-5
S.P. 326
X max=5000'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

400' Tr. 5000' Tr.

MOVEOUT SCAN

Trace No. ▲T secs.

24 000 96
1 040 91
080 86
120 81
160 76
200 71
240 66
280 61
320 56
360 51
400 46
440 41
480 36
520 31
560 26
600 21
640 16
680 11
720 6
760 1

0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

Rej 720

ENV 990 II - 26

Lz - II 066 1N3

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

ΔT secs.	Trace No.
760	1
720	6
680	11
640	16
600	21
560	26
520	31
480	36
440	41
400	46
360	51
320	56
280	61
240	66
200	71
160	76
120	81
080	86
040	91
000	96

LINE 069A-7
S.P. 1023
X max= 6250'

Aug 1936
Aug 1941
1960

Aug 1936 SP 1023

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

6250' Tr. 1

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

MOVEOUT SCAN

500' Tr. 24

82 - II 066 ANE

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

LINE 069A-8
S.P. 695
X max= 6250'

▲T secs.	Trace No.
760	1
720	6
680	11
640	16
600	21
560	26
520	31
480	36
440	41
400	46
360	51
320	56
280	61
240	66
200	71
160	76
120	81
080	86
040	91
000	96

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

6250' Tr. 1

MOVEOUT SCAN

500' Tr. 24

62- II 066 ANT

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 85!

LINE 069A-8
S.P. 726
X max= 6250'

ΔT secs.	Trace No.
760	1
720	6
680	11
640	16
600	21
560	26
520	31
480	36
440	41
400	46
360	51
320	56
280	61
240	66
200	71
160	76
120	81
080	86
040	91
000	96

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2^64 Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

6250' Tr. 1

MOVEOUT SCAN

500' Tr. 24

LINE 069A-8
S.P. 756
X max= 6250'

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

500'Tr. 24

MOVEOUT SCAN

6250'Tr. 1

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

ΔT secs.	Trace No.
000	96
040	91
080	86
120	81
160	76
200	71
240	66
280	61
320	56
360	51
400	46
440	41
480	36
520	31
560	26
600	21
640	16
680	11
720	6
760	1

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

ENV 990II - 30

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = =
10-50 = 700 = = =
10-40 = 1000 = = =
10-30 = 1400 = = =

LINE 069A-10
S.P 806
X max= 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

500' Tr. 24 — MOVEOUT SCAN — 1 6250' Tr.

ΔT secs. ↓ — Trace No. ↓

000	040	080	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760
96	91	86	81	76	71	66	61	56	51	46	41	36	31	26	21	16	11	6	1

0·0
0·2
0·4
0·6
0·8
1·0
1·2
1·4
1·6
1·8
2·0
2·2
2·4
2·6
2·8
3·0
3·2
3·4
3·6
3·8
4·0

192 — 069A-10 SP 806

Seq 1154
FFID 3481
REV

ENV 990 II - 31

ENV 990 - II 066 - 32

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

LINE 069A-II
S.P. 665
X max = 6250'

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op./Tr.) 500ms.
TVF 20-60Hz. 600 "
15-55 " 700 "
10-50 " 1000 "
10-40 " 1400 "
10-30 "

MOVEOUT SCAN

6250' Tr.
500' Tr.

ΔT secs.	Trace No.
760	1
720	6
680	11
640	16
600	21
560	26
520	31
480	36
440	41
400	46
360	51
320	56
280	61
240	66
200	71
160	76
120	81
080	86
040	91
000	96

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

Sep 1984 Leg 103

0644-11 SP 6696

106

107

OTWAY BASIN
PROCESSED BY G.S.I. PTY 851

LINE 069A-15
S.P. 1041
X max= 6250'

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 "
10-50 " 700 "
10-40 " 1000 "
10-30 " 1400 "

MOVEOUT SCAN

▲T secs.	Trace No.
760	1
720	6
680	11
640	16
600	21
560	26
520	31
480	36
440	41
400	46
360	51
320	56
280	61
240	66
200	71
160	76
120	81
080	86
040	91
000	96

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

6250' Tr. 1

500' Tr. 24

LINE 069A-16
S.P 1116
X max= 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = = =
10-50 = = 700 = = =
10-40 = = 1000 = = =
10-30 = = 1400 = = =

500' Tr. 6250' Tr.

MOVEOUT SCAN

24 1

ΔT secs. ↓ Trace No. ↓

760 1
720 6
680 11
640 16
600 21
560 26
520 31
480 36
440 41
400 46
360 51
320 56
280 61
240 66
200 71
160 76
120 81
080 86
040 91
000 96

0·0
0·2
0·4
0·6
0·8
1·0
1·2
1·4
1·6
1·8
2·0
2·2
2·4
2·6
2·8
3·0
3·2
3·4
3·6
3·8
4·0

140

144

G698-16 SP 1116

Req 1226
1053/48
1/41

ENV 990 II-34

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 " "
10-50 " 700 " "
10-40 " 1000 " "
10-30 " 1400 " "

LINE 069A-16
S.P 1152
X max= 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

500' Tr. 24 — MOVEOUT SCAN — 1 6250' Tr.

ΔT secs. ↓ 0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

Trace No. ↓ 1 6 11 16 21 26 31 36 41 46 51 56 61 66 71 76 81 86 91 96 000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760

1151 069A 16 SP 1152

ROZIR 36
NO. 3409
74C

24 Tr GATHER 4 CDP(6 FOLD)
TVD (2 64 Pt Op/Tr)
TVF 20 60Hz 500ms
15 -55 = 600 = =
10 -50 = 700 = =
10 -40 = 1000 = =
10 30 = 1400 = =

LINE 069A-19
S.P 1643
X max= 6250

OTWAY BASIN
PROCESSED BY G S I PTY 851

500'Tr

6250'Tr

MOVE OUT PLAN

24

1

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760

96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

▲T SECS

Trace No.

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

32

36

069A-19 SP 1643

33

ENV 990 # -36

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 = 600 = =
10-50 = 700 = =
10-40 = 1000 = =
10-30 = 1400 = =

LINE 069A- 19
S.P 1684
X max = 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

500' Tr. 24 — MOVEOUT SCAN — 1 6250' Tr.

ΔT secs. ↓ Trace No. ↓

000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760
96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

43

069A-K S.P 1684

RSG 1/597

40

ENV 990 II - 37

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 " "
10-50 " 700 " "
10-40 " 1000 " "
10-30 " 1400 " "

LINE 069A-20
S.P. 1528
X max= 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

500' Tr. 24 — MOVEOUT SCAN — 1 6250' Tr.

ΔT secs ↓ 0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

Trace No. ↓ 000 040 080 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760
96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6 1

069A-20 S.P. 1528

ENV 990 II - 38

24 Tr. GATHER 4 CDP (6 FOLD)
TVD (2-64 Pt. Op/Tr)
TVF 20-60Hz. 500ms.
15-55 " 600 " "
10-50 " 700 " "
10-40 " 1000 " "
10-30 " 1400 " "

MOVEOUT SCAN

LINE 069A-21A
S.P 1342
X max = 6250'

OTWAY BASIN
PROCESSED BY G.S.I. PTY. 851

500' Tr. 24 — 6250' Tr. 1

▲T secs. — Trace No.

000 96 040 91 080 86 120 81 160 76 200 71 240 66 280 61 320 56 360 51 400 46 440 41 480 36 520 31 560 26 600 21 640 16 680 11 720 6 760 1

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

SP — 069A-21A SP 3422 — SP

ENV 990 II -39

OTWAY BASIN, S.A.
PROCESSED BY [illegible] Pty. Ltd.

LINE 069A-23
S.P. 1709
X max = 3375'

MOVEOUT SCAN

069A-2B S.P. 1709

57

24 Tr. Gather 8 CDP (3 Fold),
TVD (2-64 Pt Op./Tr.)
TVF 20 - 60 Hz. 500 ms.
15 - 55 Hz. 600 ms.
10 - 50 Hz. 700 ms.
10 - 40 Hz. 1000 ms.
10 - 30 Hz. 1400 ms.

LINE 069A - 24
S.P. 1692
X max = 3375'

OTWAY BASIN, S. AUST.
PROCESSED BY GSI Pty 85

500' Tr. 24 — MOVEOUT SCAN — 3375' Tr. 1

▲T sec. — Trace No. — Tr. 1

000 020 040 060 080 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380
96 91 86 81 76 71 66 61 56 51 46 41 36 31 26 21 16 11 6

0·0 0·2 0·4 0·6 0·8 1·0 1·2 1·4 1·6 1·8 2·0 2·2 2·4 2·6 2·8 3·0 3·2 3·4 3·6 3·8 4·0

069A-24 SP 1692

69 64

24 Tr. Gather 8 CDP (3 Fold).
TVD (2-64 Pt Op./Tr.)
TVF 20 - 60 Hz. 500 ms.
15 - 55 Hz. 600 ms.
10 - 50 Hz. 700 ms.
10 - 40 Hz. 1000 ms.
10 - 30 Hz. 1400 ms.

LINE 069A - 24
S.P. 2034
X max = 3375'

OTWAY BASIN, S. AUST.
PROCESSED BY GSI Pty 851

500' Tr. 24 — 3375' Tr. 1

MOVEOUT SCAN

Tr. 96 · 91 · 86 · 81 · 76 · 71 · 66 · 61 · 56 · 51 · 46 · 41 · 36 · 31 · 26 · 21 · 16 · 11 · 6 · Tr. 1

▲T sec. — Trace No.

T

0·0 · 0·2 · 0·4 · 0·6 · 0·8 · 1·0 · 1·2 · 1·4 · 1·6 · 1·8 · 2·0 · 2·2 · 2·4 · 2·6 · 2·8 · 3·0 · 3·2 · 3·4 · 3·6 · 3·8 · 4·0

069A-24 S.P. 2034

ENV 990 II - 42