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GEO
SYSTEMS PTY. LTD.

1992 CTEM SURVEY
18-33-23
McARTHUR BASIN
NORTHERN TERRITORY

PR 93179A

FINAL REPORT — OPERATIONS

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1992 CTEM SURVEY

EP 18, 33 McARTHUR BASIN
NORTHERN TERRITORY

FINAL REPORT - OPERATIONS

by

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of

GEOSYSTEMS PTY LTD

A wholly owned subsidiary of
Geophysical Systems Corporation
Pasadena, California, U.S.A.

for

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R93/79A

CRAE Report No: 304796

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1. INTRODUCTION

This report covers the operation of the CTEM survey carried out by Geo Systems Pty Ltd. for Pacific Oil and Gas during the period 24th May 1992 and the 1st August 1992 in EP 18/33 in the Northern Territory of Australia.

The total survey consisted of 290 kilometres of line involving the use of 592, 500x500m transmitter loops. It had originally envisaged that the survey would be centred around the Jamison/Mason No. 1 structures with 3 short CTEM traverses over features of interest from previous seismic surveys. These later traverses were however cancelled and preference given to further features in the main Jamison/Mason area.

2. OPERATIONS

GeoSystems Pty Ltd. was originally contracted to provide a camp suitable for a total of up to 30 personnel including 21 of their own personnel to help with the acquisition of the CTEM data. A list of the camp equipment provided by GeoSystems is included in the weekly reports. All the recording equipment and ancillary equipment required for the collection of the CTEM data was provided by and the responsibility of Pacific Oil and Gas.

The total crew was divided into four distinct groups for the collection and processing of the CTEM data as follows.

2.1 SURVEY CREW

This section consisted of one qualified surveyor, one helper and one Toyota together with all necessary survey equipment. All the survey

with the exception of the eastern ends of lines MA91-210 and MA91-230 were along previously cut seismic lines. Wherever possible the old VP pegs were located and used to locate the corners and centres of the receiver loops. On many occasions this was not possible due to the age of the seismic line or due to the presence of cattle. When pegs were not available distances were established by the use of an EDM from permanent markers. Both the corners and centres of the loops were marked by the use of wooden six foot pegs together with a 300mm wooden marker peg. The bearings of the sides and centres of the receiver loops were turned off using a magnetic compass or a theodolite depending on the condition of the seismic line. These bearings were marked using three sighting markers for use by the chaining crew.

As both Line Nos. MA91-210 and MA91-230 were extensions of existing seismic lines, this required line clearing and surveying of the cleared lines.

Seismic lines that had previously been closed off were re-opened with the use of a front end loader prior to the commencement of operations. Coordinates and elevations of the corners and centres of all receiver loops were based on values from previous seismic surveys.

2.2 CHAINING CREW

As one of the main objectives of the survey was to cause the minimum of environmental damage, several changes to the composition of this section were made to the crew during the project. Vegetation throughout the prospect area varied considerably, from thick lance-wood to thick scrub, to reasonably open conditions particularly on line SH90-100.

At the start of operations due problems with the recording equipment, only one chaining crew with one Toyota was utilised. This section of the crew certainly had the most difficult job on the whole crew. They were responsible for the cutting of the sides, backs and centres of the receiver loops. All the cutting was done by hand using

machetes with great care being taken to do the least amount of damage as possible to the environment. Wherever possible three people were used to cut the sides of the loops, two people operating a 100m chain and the third person cutting the line and ranging the line using the pegs set up by the surveyors together with any additional ranging pegs as required. On completion of the side the crew would then return down the cut line, picking up all ranging poles and making sure that the line was adequately marked with flagging for the recording crew. A wooden six foot marker pole was left at the end of each side to prevent any confusion with the recording crews. Two people were utilised to cut the centre lines using a 50m chain. The back lines of the receiver loops were set off using a magnetic compass bearing from the side of the square. The back of the loop was then cut in using compass bearings to the end of the next square. An accuracy of less than 2 meters was allowed along this side before necessitating it to be re-cut.

As recording production increased on the crew, a second chaining crew and an extra vehicle were used. In areas of thin bush a chaining crew of only three personnel were used and by carefully checking of lines prior to chaining, a total cutting crew of 11 personnel was found to be sufficient to cut an average of 12 loops per day. This however does not take into consideration personnel unable to work due to pulled muscle or injuries due to the nature of this heavy work.

2.3 RECORDING CREW

Initially the survey started operations using one recording crew due to problems with the Russian Impulse 3 Receiver and Transmitter units, the first loop not being acquired until 29th May. The second unit did not come into operation until the 2nd June. During the first three weeks of operations production continued extremely slowly due to many problems with the Russian equipment. It had originally been anticipated that a total of 2 operators and 6 helpers would be required for each recording crew. However after initial trials, it was discovered that three helpers would be sufficient on each crew together with two operators for the recording equipment under normal operating conditions.

Both recording crews consisted of a Toyota personnel carrier for the electronic recording equipment, one Toyota pick-up for loop cables etc. and a 15KVA mobile DC generator.

The three helpers were used primarily to move the 500m long loop cables as required, whilst both operators were responsible for the operating of the receiver and transmitter equipment. The transmitting equipment was mounted in the personnel carriers but it was necessary to carry the receiver equipment to the centre of the receiver loop via the precut 250m long centre lines. The front 500m receiver cable running along the seismic line was moved up by towing it behind the line pick-up Toyota, and the side 500m loop cable was reeled in using the power winders supplied by Zonge Engineering to Pacific Oil and Gas. The back cables were pulled in by hand using either one or two helpers depending on the thickness of the bush. By using a total of seven cables the recording crew was able to lay out cables in advance, thus cutting down waiting time at the completion

of recording each loop. The mobile generators were towed between the centre locations of each loop by either of the Toyota's on the individual crews.

Recording times per loops varied depending on the problems experienced but were normally just less than one hour per loop.

One recording crew was operated by two Russians, Alexander Zakharkin and Anatolii Pauli, whilst the other crew was operated by two Geo System's personnel who had previously been trained by the two above mentioned personnel. All electronic repairs to the Impulse 3 equipment were carried out by the Russian personnel on the crew.

2.4 PROCESSING

Initial processing of the data was carried out on the crew by David McInnes from Pacific Oil and Gas and one Russian operator Yuri Isaev. This part of the operation was left totally under the control of Pacific Oil and Gas.

3. CAMP AND SUPPORT FACILITIES

The camp which was supplied by GeoSystems Pty. Ltd. was situated at the Jameson No. 1 Wellsite, approximately 45 kilometres South east of Dunmarra Roadhouse. Access to the campsite was from the Stuart Highway via reasonable station tracks and fence lines. Good water supplies were drawn by means of a 1.5HP semi-submersible pump from a depth of 110 meters from the water bore on site.

Fuel supplies for both the camp and the operations were from a bulk fuel tanker supplied by Ampol Australia Ltd. from Katherine.

Food supplies were delivered via Dunmarra Roadhouse on a weekly basis by Trans Territory Foods out of Katherine.

All survey pegs and supplies were road transported to the crew from Hirex Pty. Ltd. in Alice Springs.

Mechanical parts and various parts required during the crews operations were obtained via GeoSystem's Pty. Ltd. in Perth.

4. PERSONNEL

Party Manager.....R.R. Pearce
 Ass. Party Manager.....D. Cursaro
 Surveyor.....M. Storer/A. Brett
 Mechanic.....M. Hammond
 Operators.....G. Treanor/S. Farrell
 J. Smith
 Line Boss (Group A).....I. Johnson
 Line Boss (Group B).....J. O'Loughlin
 Chaining Crew Boss.....A. Salmon
 Chaining Crew Boss.....I. Franklin
 Chaining Crew Boss.....P. Justice
 Survey Assistant.....A. Mackay
 Cook.....R. Shanley
 Cooks Assistant.....A. Glass
 Camp Assistant.....C. Cameron
 Plus.....11 Line Helpers

PERSONNEL PRESENT

R. Lane Pacific Oil and Gas

D. McInnes Pacific Oil and Gas

4 Russians

1 Interpreter

Complete CTEM crew (21 People)

MEETING CONDUCTED BY:- R. Lane, R. Pearce

POINTS DISCUSSED

(1) The need for Safety requirements whilst handling loop cables due to the high electric current they carry.

(2) Continuous 15 second blast on the siren to be given before loop connected up.

(3) Three short blasts to be given on siren when loop powered down.

(4) If in doubt do not touch cable without checking with operator.

(5) Make sure that all cables are correctly connected.

Demonstrations given .

(6) GeoSystems Safety manuals given to all line bosses for distribution to crew.

(7) List of emergency telephone numbers to be displayed at all times in office.

(8) Full RFDS medical kit available in office.

(9) Each crew to carry an everyday medical kit

(10) Boots to be worn at all times in field.

(11) Excessive speeding of vehicles will not be tolerated.

(12) Vehicles to checked for spare tyres and jacks every day.

(13) Water to be carried at all times.

(14) Russians not covered by insurance to drive vehicles.

(15) Safety glasses to be used at all times when using the power winders.

(16) The need to be extremely environmentally conscious during the job was explained and personnel warned that any unwarranted damage to the bush or to any of the station owners property would not be tolerated.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

The complete crew with the exception of the cook and cook's assistant were then taken to the line where further demonstrations of connecting cables use of the power winders were given and personnel allowed to practice under supervision.

PERSONNEL PRESENT

R. Lane Pacific Oil and Gas

D. McInnes Pacific Oil and Gas

4 Russians

Complete CTEM crew (21 People)

MEETING CONDUCTED BY:- R. Pearce

POINTS DISCUSSED

- (1) Boots to be worn at all times on the line.
- (2) No bare feet around camp.
- (3) No travelling in the back of vehicles when additional vehicle arrives on crew.
- (4) Check Jacks, Wheel braces and spares each day.
- (5) Make sure water carried on all vehicles.
- (6) Hayfield Station is a NO-GO area.
- (7) Watch out for washouts on tracks-very difficult to see.
- (8) Cattle in grass-lands, check cables very carefully before powering up receiver loops.
- (9) Cleanliness around camp particularly cigarette ends. Use the tins provided around the camp.
- (10) Reminder about taking as much care as possible when cutting lines.
- (11) Reminder about snakes.
- (12) Reminder about continued safety whilst working on loops.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

- (1) Need for three extra people on chaining crew. Agreed by R. Lane
- (2) Need for an extra vehicle on chaining crew. This to be covered by survey vehicle for the present.
- (3) More water required on line. 2 additional eskies to be ordered.

PERSONNEL PRESENT

R. Lane Pacific Oil and Gas

D. McInnes Pacific Oil and Gas

4 Russians

Complete CTEM crew (24 People)

MEETING CONDUCTED BY:- D. Cursaro

NOT PRESENT R. Pearce - on leave.

POINTS DISCUSSED

- (1) Boots to be worn at all times on the line.
- (2) No bare feet around camp.
- (3) No travelling in the back of vehicles when additional vehicle arrives tomorrow.
- (4) Check Jacks, Wheel braces and spares each day.
- (5) Make sure water carried on all vehicles.
- (6) Warning signs to be used at either end of receiver loops.
- (7) All first aid kits on vehicles to checked and topped up if necessary from the office.
- (8) As a lot of cuts have started to get infected the Sister at Elliott recommends using Betadine.
- (9) Snake seen on camp take extra care at night and wear shoes all the time.
- (10) Reminder about taking as much care as possible when cutting lines.
- (11) Reminder about continued safety whilst working on loops.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

None

PERSONNEL PRESENT

D. McInnes Pacific Oil and Gas

4 Russians

Complete CTEM crew (25 People)

MEETING CONDUCTED BY:- R. Pearce

NOT PRESENT

POINTS DISCUSSED

(1) People still riding in the back of vehicles. There are now enough vehicles on line and no one is to travel in the back.

(2) People are still getting injured on line clearance, take as much care as you possibly can.

(3) Work boots must be worn at all times.

(4) Not impressed with the cleanliness of the vehicles. In future all vehicles will be cleaned every night.

(5) Faults on vehicles are not being reported at night. It is no good complaining about breaking down in the bush if the mechanic does not know there is a fault.

(6) There is an outbreak of Tinea on the crew, everyone should wear thongs in the shower.

(7) Radio aerials should be checked daily. There were two vehicles without aerials tonight.

(8) Travel times are getting long but this does not mean an excuse to drive fast. There is a speed limit of 60kms/hr on all line vehicles.

(9) We are having some problems with the shower pit. The outlet from the toilet has been isolated and lime added to the pit.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

(1) There still appears to be problems hearing the sirens particularly in heavy bush. They are to be raised on poles to see if this solves the problem.

(2) Some complaints about not enough vehicles on line. After discussion it was decided to use the P.M.s vehicle to replace any vehicle being worked on by the mechanics.

(3) The possibility of moving one chaining crew to Dunmarra whilst shooting line 91-100 was also discussed.

SAFETY MEETING REPORTDATE 4/7/92PERSONNEL PRESENT

D. McInnes Pacific Oil and Gas

4 Russians

Complete CTEM crew (25 People)

MEETING CONDUCTED BY:- R. Pearce

NOT PRESENT D. Cursaro - Supply run.

POINTS DISCUSSED

(1) Swimming pool can only be used between the hours of 1700 and 1830 hrs. People must enter the pool via the canvas laid on top of the liner. Any fooling around in the pool and it will be banned to everyone.

(2) Vehicles are still travelling too fast. Anyone seen will be dismissed.

(3) Two people were on line today without boots. Boots will be worn at all times. No excuses will be allowed.

(4) People have been using the RFDS medical kit without permission. There is a general medical kit in the office for every-day use.

(5) Still a bad outbreak of flu on the crew. Additional flu tablets will be on the crew tonight.

(6) Recording crew will be staying in Dunmarra for the next five days. If there are any complaints about behaviour in the roadhouse there will be no second chances.

(7) On line 100 the bush is very sparse and vehicles can be used off line provided that no damage is done to either the bush or the vehicles.

(8) There are a lot of cows on line 100 and great care should be taken whilst driving.

(9) Due to number of cows on line 100 receiver loops should be checked well before being powered up.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

(1) Three people left the crew, complaining about other crew members. If anyone has got any complaints they should see me or Mick Cursaro before things get out of hand.

SAFETY MEETING REPORTDATE 18/7/92PERSONNEL PRESENT

D. McInnes Pacific Oil and Gas.
1 Trainee Geologist Pacific Oil and Gas
3 Russians
Complete CTEM crew (26 people)

MEETING CONDUCTED BY:- R. Pearce

NOT PRESENTPOINTS DISCUSSED

- (1) Line and access roads are starting to cut up, take extra care whilst driving.
- (2) Lines are no longer clear enough to use vehicles off-line.
- (3) Two vehicles again with flat spares. It is a long walk back from the line.
- (4) Weather starting to warm up again, remember to carry plenty of water.
- (5) Some peoples cuts are starting to get infected, make sure that everyone uses Betadine on them.
- (6) People are starting to get tired, easy to make mistakes. Take extra care on the line.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

None

SAFETY MEETING REPORTDATE 25/7/92PERSONNEL PRESENT

D. McInnes Pacific Oil and Gas

3 Russians

Complete CTEM crew (22 people)

MEETING CONDUCTED BY:- R. Pearce

NOT PRESENTPOINTS DISCUSSED

(1) Only one week to go. Take extra care on the lines and don't make any mistakes.

(2) Swimming pool not to be used as water is getting dirty.

(3) Dozing people back on camp. Watch out for extra vehicles and children round camp site.

(4) All vehicles to be checked out before end of contract and all defects reported.

(5) Well done and take it easy to end of the contract. We don't want any major disasters now.

OTHER POINTS DISCUSSED IN GENERAL DEBATE

None

6. RECOMMENDATIONS

(a) Survey

For any future CTEM surveys it would be necessary for the survey crew to commence work at least two weeks prior to the start of recording operations. All previously cut seismic lines have now been closed off and all VP markers removed. This will entail the chaining or EDM distancing from Permanent Markers. Permanent Marker listings of all lines to be recorded will also be required prior to the commencement of operations. The same combination of one surveyor, one assistant and a Toyota pick-up should be sufficient to complete this section of any future survey.

(b) Chaining

For any future survey it is recommended that two crews of 5 people per crew be utilised. This would of course require the provision of two vehicles capable of carrying five persons to prevent people from having to travel on the back of vehicles.

Due to the nature of the work involved cutting access it is also recommended that all line clearance personnel be issued with belts with sheaths capable of carrying machetes and small axes to minimise any dangers when tripping over in the bush.

Each crew should also be issued with 3 Magnetic compasses per crew together with 2x100m chains and 1x50m chain.

It is essential that all personnel employed in this section be very strong and fit. This is not a job for the weak hearted.

(c) Recording

This section of the crew worked well with 3 people per line crew together with a Toyota pick-up. There will be occasions when the

crew would need one extra person per crew in very heavy bush but these could always be borrowed from the chaining crew.

Cable reels provided for the conductor cables were a lot heavier than required and the power winders utilising starter motors and fan belts left a lot to be desired. Starter motors are not manufactured to run for long lengths of time which led to numerous burn out of brushes and winders. Some form of geared heavy duty motor I am sure would be far more advantageous. As the power winders are only used from the Toyota, the ideal operation would be to have the reels mounted on the Toyota tray and have some form of power winder that could be connected to each reel. It would also be advantageous to have mounted two larger reels capable of carrying up to 3x500m cables on line moves. There should be two power winder's per crew.

The use of two operators per crew during this year's survey worked well. The majority of down-time which occurred during the 1992 CTEM survey resulted from the unreliability of the recording equipment. Most of this lost time initially came from component failure and noise generated within the system. Toward the later part of the contract however the largest contributor to down time was due mainly to connection problems. For future contracts it is recommended that the transmitting electronic equipment be permanently mounted in either a Toyota crew-cab or personnel carrier preferably in a dust proof container. If possible it would be better to have the receiver electronics mounted in the same vehicle rather than in the centre of the loop. This would certainly help reduce the number of problems resulting from bad connections.

Some of the internal noise problems within the system might be reduced by the use of more screened cables.

Very few spares or test equipment were carried on the crew and had it

not been for the proximity of the seismic crew initially, much more downtime would have occurred. It is imperative that adequate test equipment be available on the crew at all times.

The downtime which occurred on the equipment operated by the two Russians was far less than that on the other set of equipment. Some of this could be attributed to unfamiliarity with the equipment but also to lack of electronic or electrical experience. This area should also be looked into on any future projects.

(d) Line Generators

These units which were designed and built by CRA, gave no major problems during the survey. The only criticism was the lack of ground clearance which certainly caused problems when towing on seismic line cut this year. The catches on the side doors were not strong enough and need replacing. There was also no clearance between the side doors and the mudguards of the trailer.

(e) Camp

Due to the camp being set up as a permanent camp for the complete survey, travel times on the job were long. On any future projects, thought should be given to the use of a more mobile camp. This however would require some form of water tanker to be added to the equipment on the crew.

GEOSYSTEMS PTY LTD

7.

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 24/5/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	R.LANE
Area	JAMISON/MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON	TUE	WED	THU	FRI	SAT	SUN 24	WEEK	MONTH	JOB
Travel Hours.....							0.00			
Test Hours.....							0.00			
Recording Hours...							0.00			
Other Hours.....							0.00			
Total Hours.....							0.00			
Total Loops.....							0.000			
Total Loops cut...							3	3	3	
Weather.....							Fine			
Down Time -										
Generator.....							0.00			
Tx/Rx.....							0.00			
Cables.....							0.00			
Other.....							0.00			
Other.....							0.00			
Total Down Time..							0.00			

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

Half loop cables on site

1, Person from CRA
1, Russian Interpreter

REMARKS

Environment, Safety and Procedures meeting run by R.Lane

Testing out equipment

Chaining started on line 91-103

VEHICLES & EQUIPMENT

Party Manager...	7MC078 UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Survey.....	70S643 UTE	ACCOMMODATION VAN No.2	7TF341	8 PEOPLE
Recording Group A	8AD128 PC	ACCOMMODATION VAN No.3	6UR106	8 PEOPLE
Recording Group B	710055 PC	ACCOMMODATION VAN No.4	6UR103	4 PEOPLE
Chaining Group A	71B915 UTE	ACCOM/OFFICE VAN T504		2 PEOPLE
Chaining Group B	71B914 UTE	KITCHEN VAN		
Supply Truck....	6YR169 ISUZU	SHOWER VAN (HIRED)		
		4 TENTS		6 PEOPLE
		80 KVA GENERATOR		

GEOSYSTEMS PTY LTD

CREW NO.... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 31/5/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	R.LANE
Area	JAMISON/MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 25	TUE 26	WED 27	THU 28	FRI 29	SAT 30	SUN 31	WEEK	MONTH	JOB
Travel Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Recording Hours...	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Other Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Total Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00		27.50	27.50
Total Loops.....	0.000	0.000	0.000	0.000	1.000	3.000	2.000	6.000	6.000	6.000
Total Loops cut...	3.00	6.00	5.00	7.00	10.00	6.00	7.00	44.00	47.00	47.00
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			
Down Time -										
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Tx/Rx.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Cables.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Total Down Time..	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.50

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

Remaining loop cables arrived on crew during week

Visitors left crew 28/5/92

REMARKS

Safety meeting held 31/5/92

Chaining crews completed southern part of 91-103

Chaining started on 91-98. Front end loader used to cut back line on 91-98 between VPs 1740 & 1600

Commenced production with 1 crew on 29/5/92

Hours included on 31/5/92 is an estimate and includes 1/6/92

VEHICLES & EQUIPMENT

Party Manager...	7MC078 UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Survey.....	70S643 UTE	ACCOMODATION VAN No.2	7TF341	8 PEOPLE
Recording Group A	8AD128 PC	ACCOMODATION VAN No.3	6UR106	8 PEOPLE
Recording Group B	710055 PC	ACCOMODATION VAN No.4	6UR103	4 PEOPLE
Chaining Group A	71B915 UTE	ACCOM/OFFICE VAN	T504	2 PEOPLE
Chaining Group B	71B914 UTE	KITCHEN VAN		
Supply Truck....	6YR169 ISUZU	SHOWER VAN (HIRED)		
		4 TENTS		6 PEOPLE
		80 KVA GENERATOR		

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 14/6/92

Client PACIFIC OIL AND GAS
 Survey Name CTEM
 Area JAMISON/MASON
 State NT

Party Manager..... R.R.PEARCE
 Client Rep..... R.LANE
 Crew Address..... C/O Dunbarra Roadhouse
 Crew Phone No..... 007114051

	MON 8	TUE 9	WED 10	THU 11	FRI 12	SAT 13	SUN 14	WEEK	MONTH	JOB
Travel Hours.....	1.00	1.00	1.00	1.25	1.25	2.00	2.00	9.50	18.50	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Recording Hours...	15.00	12.00	12.75	11.75	1.50	11.00	11.00	75.00	132.75	
Other Hours.....	3.00	6.25	5.00	6.25	0.00	5.75	4.75	31.00	61.75	
Total Hours.....	19.00	19.25	18.75	19.25	2.75	18.75	17.75	115.50	214.00	241.50
Total Loops.....	11	12	11	11	1	11	11	68	111	117
Total Loops cut...	8	10	4	7	12	8	11	60	97	144
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			
Down Time -										
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tx/Rx.....	0.00	0.25	0.50	0.50	17.25	0.50	0.00	19.00	38.75	
Cables.....	0.00	0.50	1.25	0.25	0.00	0.75	1.25	4.00	7.00	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	3.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	0.00	0.75	1.75	0.75	17.25	1.25	2.25	24.00	49.00	49.50

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

Additional Toyota on crew 10/6/92

2, Pacific Oil and Gas 11/6/92
 1, Visitor 11/6/92

REMARKS

Group A recording on line 91-98

12/6/92 both sets of instruments down

Group B recording on line 91-210

14/6/92 Seismic crew moved from Jamison

3, Additional personel on chaining crew during week

Safety meeting 8/6/92

VEHICLES & EQUIPMENT

Party Manager... 7MC078 UTE
 Survey..... 70S643 UTE
 Recording Group A 500-422 HILUX (HIRED)
 Recording Group B 710055 PC
 Line Group A.... 71B915 UTE
 Line Group B.... 71B914 UTE
 Chaining..... 8AD128 PC
 Supply Truck.... 6YR169 ISUZU

ACCOM/STORES VAN No.1 7TF340 7 PEOPLE
 ACCOMODATION VAN No.2 7TF341 8 PEOPLE
 ACCOMODATION VAN No.3 6UR106 8 PEOPLE
 ACCOMODATION VAN No.4 6UR103 4 PEOPLE
 ACCOM/OFFICE VAN T504 2 PEOPLE
 KITCHEN VAN
 SHOWER VAN (HIRED)
 4 TENTS 6 PEOPLE
 80 KVA GENERATOR

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 28/6/92

Client	PACIFIC OIL AND GAS	Party Manager.....	D. CURSARO
Survey Name	CTEM	Client Rep.....	D. McINNES
Area	JAMISON/MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 22	TUE 23	WED 24	THU 25	FRI 26	SAT 27	SUN 28	WEEK	MONTH	JOB
Travel Hours.....	3.50	3.75	2.75	3.00	2.75	4.50	2.50	22.75		
Test Hours.....	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00		
Recording Hours...	9.00	10.00	8.75	9.25	7.25	6.75	8.00	59.00		
Other Hours.....	4.25	4.75	4.00	4.75	4.75	4.00	4.50	31.00		
Total Hours.....	18.75	18.50	15.50	17.00	14.75	15.25	15.00	114.75	451.50	479.75
Total loops.....	9	10	8	10	8	8	9	62	233	239
Total loops cut...	7	6	10	7	8	10	8	56	206	253
Weather.....	Fine	0	Fine	Fine	Fine	Fine	Fine			

Down Time -	MON 22	TUE 23	WED 24	THU 25	FRI 26	SAT 27	SUN 28	WEEK	MONTH	JOB
Generator.....	1.25	0.00	0.00	0.00	0.00	0.00	0.00	1.25		
Tx/Rx.....	0.00	1.00	1.00	3.00	5.25	3.75	5.00	19.00		
Cables.....	0.00	0.50	0.00	0.00	0.00	1.00	0.00	1.50		
Other.....	0.00	0.00	3.50	0.00	0.00	0.00	0.00	3.50		
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total Down Time..	1.25	1.50	4.50	3.00	5.25	4.75	5.00	25.25	91.10	92.10

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

1, Electric winder down

REMARKS

Group A completed line 91-98 on 26/6/92

Group A recording line 92-281

Group B recording line 92-230

VEHICLES & EQUIPMENT

Party Manager....	7MC078	UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Survey.....	70S643	UTE	ACCOMODATION VAN No.2	7TF341	8 PEOPLE
Chaining.....	341-124	UTE (PACIFIC OIL AND GAS)	ACCOMODATION VAN No.3	6UR106	8 PEOPLE
Chaining.....	8AD128	PC	ACCOM/OFFICE VAN No.4	6UR103	4 PEOPLE
Recording Group A	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN T505		2 PEOPLE
Recording Group B	710055	PC	KITCHEN VAN		
Line Group A....	71B915	UTE	SHOWER VAN (HIRED)		
Line Group B....	71B914	UTE	4 TENTS		6 PEOPLE
Supply Truck....	6YR169	ISUZU	80 KVA GENERATOR (HIRED)		

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 5/7/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	D.McINNES
Area	JAMISON /MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 29	TUE 30	WED 1	THU 2	FRI 3	SAT 4	SUN 5	WEEK	MONTH	JOB
Travel Hours.....	3.00	3.00	2.50	3.00	3.00	3.50	3.50	21.50	15.50	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recording Hours...	7.50	8.50	10.00	9.00	9.25	8.25	8.75	61.25	45.25	
Other Hours.....	4.50	6.50	7.50	8.00	6.50	7.25	6.75	47.00	36.00	
Total Hours.....	15.00	18.00	20.00	20.00	18.75	19.00	19.00	129.75	96.75	609.50
Total Loops.....	7	10	11	10	10	9	10	67	50	306
Total Loops cut...	8	8	8	10	7	11	15	67	51	320
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			

Down Time -	MON 29	TUE 30	WED 1	THU 2	FRI 3	SAT 4	SUN 5	WEEK	MONTH	JOB
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tx/Rx.....	1.50	0.50	0.00	0.00	0.00	0.00	0.00	2.00	0.00	
Cables.....	2.00	0.00	0.00	0.00	0.00	0.50	0.50	3.00	1.00	
Other.....	1.50	1.25	0.00	0.00	1.25	0.50	0.50	5.00	2.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	5.00	1.75	0.00	0.00	1.25	1.00	1.00	10.00	3.25	102.10

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

1, Replacement winder received

R.Pearce back off leave 30/6/92

REMARKS

Group A recording on line 92-281

Group B recording on line 92-230

1, Additional person on chaining crew

VEHICLES & EQUIPMENT

Party Manager....	7MC078	UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Survey.....	70S643	UTE	ACCOMMODATION VAN No.2	7TF341	8 PEOPLE
Chaining.....	341-124	UTE (PACIFIC OIL AND GAS)	ACCOMMODATION VAN No.3	6UR106	8 PEOPLE
Chaining	8AD128	PC	ACCOM/OFFICE VAN No.4	6UR103	4 PEOPLE
Recording Group A	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN T504		2 PEOPLE
Recording Group B	710055	PC	KITCHEN VAN		
Line Group A....	71B915	UTE	SHOWER VAN (HIRED)		
Line Group B....	71B914	UTE	4 TENTS		6 PEOPLE
Supply Truck.....	6YR169	ISUZU	80 KVA GENERATOR (HIRED)		

GEOSYSTEMS PTY LTD

CREW NO.... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 12/7/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	D.McINNES
Area	JAMISON /MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 6	TUE 7	WED 8	THU 9	FRI 10	SAT 11	SUN 12	WEEK	MONTH	JOB
Travel Hours.....	5.00	2.00	2.25	3.25	3.50	3.50	3.75	23.25	38.75	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recording Hours...	9.00	12.50	8.50	12.00	10.25	9.00	9.00	70.25	115.50	
Other Hours.....	6.00	3.25	3.00	3.25	3.50	6.25	5.25	35.50	71.50	
Total Hours.....	20.00	17.75	18.75	18.50	17.25	18.75	18.00	129.00	225.75	738.50
Total Loops.....	9	11	11	14	10	10	10	75	125	361
Total Loops cut...	7	12	15	13	8	16	14	85	136	405
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			

Down Time -	MON 6	TUE 7	WED 8	THU 9	FRI 10	SAT 11	SUN 12	WEEK	MONTH	JOB
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tx/Rx.....	0.00	2.25	0.25	0.75	0.75	0.00	0.00	4.00	4.00	
Cables.....	0.00	0.25	1.00	0.75	0.00	1.25	1.00	4.25	5.25	
Other.....	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	4.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	0.00	2.50	1.25	1.50	2.75	1.25	1.00	10.25	13.50	112.35

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

1, Power winder not working

1, Additional person from POG on crew from 7/7/92

REMARKS

Group A completed line 92-281 & started work on 90-100
 Group A recording crew stayed in van at Dunmarra from 6/7/92 to 12/7/92
 Group A chaining crew camping out on line 7/7/92 to 11/7/92
 Group B recording crew completed line 92-230 started work on 91-95
 Very light bush on 90-100

VEHICLES & EQUIPMENT

Party Manager....	7MC078	UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE	7DJ 823
Survey.....	70S643	UTE	ACCOMMODATION VAN No.2	7TF341	8 PEOPLE	78B 109
Chaining.....	341-124	UTE (PACIFIC OIL AND GAS)	ACCOMMODATION VAN No.3	6UR106	8 PEOPLE	7EG 108
Chaining	8AD128	PC	ACCOM/OFFICE VAN No.4	6UR103	4 PEOPLE	7IG 615
Recording Group A	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN	T504	2 PEOPLE	6KF 386
Recording Group B	710055	PC	KITCHEN VAN			6KF 387
Line Group A.....	71B915	UTE	SHOWER VAN (HIRED)			6KF 388
Line Group B.....	71B914	UTE	4 TENTS		6 PEOPLE	6KF 390
Supply Truck.....	8YR169	ISUZU	60 KVA GENERATOR (HIRED)			78D 602

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 19/7/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	D.McINNES
Area	JAMISON /MASON	Crew Address.....	C/O Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 13	TUE 14	WED 15	THU 16	FRI 17	SAT 18	SUN 19	WEEK	MONTH	JOB
Travel Hours.....	3.50	3.75	3.50	3.00	3.00	3.00	2.50	22.25	61.00	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recording Hours...	9.25	10.00	8.50	10.25	9.50	9.25	10.75	67.50	183.00	
Other Hours.....	4.25	5.00	3.00	5.25	5.50	5.50	6.25	34.75	106.25	
Total Hours.....	17.00	18.75	15.00	18.50	18.00	17.75	19.50	124.50	350.25	863.00
Total Loops.....	10	11	9	11	12	10	13	76	201	457
Total Loops cut...	16	8	15	10	10	7	9	75	211	480
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			
Down Time -										
Generator.....	0.00	0.00	5.00	0.00	0.00	0.00	0.00	5.00	5.00	
Tx/Rx.....	0.75	0.00	0.00	0.00	2.00	2.00	0.25	5.00	9.00	
Cables.....	2.25	0.25	0.00	0.00	0.00	0.00	0.00	2.50	7.75	
Other.....	0.00	1.00	0.00	1.50	0.00	0.25	0.25	3.00	7.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	3.00	1.25	5.00	1.50	2.00	2.25	0.50	15.50	29.00	127.95

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

1, Replacement Power winder received

1, Person transferred to Seismic crew 19/7/92

REMARKS

Group A working on line 90-100

Group B working on line 91-93

Line 100 fairly open

Heavy push on northern end of line 93

VEHICLES & EQUIPMENT

Party Manager....	7MC078	UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Survey.....	7GS643	UTE	ACCOMMODATION VAN No.2	7TF341	8 PEOPLE
Chaining.....	341-124	UTE (PACIFIC OIL AND GAS)	ACCOMMODATION VAN No.3	6UR106	8 PEOPLE
Chaining	8AD125	PC	ACCOM/OFFICE VAN No.4	6UR103	4 PEOPLE
Recording Group A	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN	TS04	2 PEOPLE
Recording Group B	710055	PC	KITCHEN VAN		
Line Group A.....	71B915	UTE	SHOWER VAN (HIRED)		
Line Group B.....	71B914	UTE	4 TENTS		6 PEOPLE
Supply Truck.....	6YR169	ISUZU	80 KVA GENERATOR (HIRED)		

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 26/7/92

Client	PACIFIC OIL AND GAS	Party Manager.....	R.R.PEARCE
Survey Name	CTEM	Client Rep.....	D.McINNES
Area	JAMISON/MASGN	Crew Address.....	C/Dunmarra Roadhouse
State	NT	Crew Phone No.....	007114051

	MON 20	TUE 21	WED 22	THU 23	FRI 24	SAT 25	SUN 25	WEEK	MONTH	JOB
Travel Hours.....	3.00	3.50	2.00	2.50	3.00	3.00	2.00	19.00	80.00	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recording Hours...	11.00	8.00	12.00	10.00	11.00	8.00	10.00	70.00	253.00	
Other Hours.....	4.00	7.00	6.00	5.50	5.00	7.50	7.00	43.00	149.25	
Total Hours.....	18.00	18.50	20.00	19.00	19.00	18.50	19.00	132.00	482.25	795.00
Total loops.....	11	7	13	12	13	10	10	76	277	533
Total loops cut...	13	12	14	7	8	8	10	72	283	552
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			

Down Time -	MON 20	TUE 21	WED 22	THU 23	FRI 24	SAT 25	SUN 25	WEEK	MONTH	JOB
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	
Tx/Rx.....	0.00	0.00	0.00	0.50	0.00	0.75	0.00	1.25	10.25	
Cables.....	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.75	8.50	
Other.....	2.00	1.50	0.00	0.50	1.00	0.00	1.00	6.00	13.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	2.00	1.50	0.00	1.00	1.00	1.50	1.00	8.00	37.00	135.85

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

Group B Receiver loop damaged 21/7/92 (Repaired in field)

13, People left crew 21/7/92

REMARKS

Group A completed lines 90-100 & 92-251
 Group A working on 91-109
 Group A in Dunmarra 21 to 24/7/92
 Group B completed lines 91-93 & 223
 Group B working on 91-103

VEHICLES & EQUIPMENT

Party Manager.....	7MC078	UTE	ACCOM/STORES VAN No.1 7TF340	7 PEOPLE
Surveyor.....	70S643	UTE	ACCOMMODATION VAN No.2 7TF341	8 PEOPLE
Chaining.....	341-124	UTE (PACIFIC OIL & GAS)	ACCOMMODATION VAN No.3 6UR106	8 PEOPLE
Chaining.....	8AD128	PC	ACCOM/OFFICE VAN No.4 6UR103	4 PEOPLE
Recording Group A..	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN T 504	2 PEOPLE
Recording Group B..	71Q055	PC	KITCHEN VAN	
Line Group A.....	71B915	UTE	SHOWER VAN (HIRED)	
Line Group B.....	71B914	UTE	4 TENTS	6 PEOPLE
Supply Truck.....	6YR169	ISUZU	80 KVA GENERATOR (HIRED)	

GEOSYSTEMS PTY LTD

CREW NO..... 205

WEEKLY OPERATIONS SUMMARY

WEEK ENDING.... 2/8/92

Client PACIFIC OIL AND GAS
 Survey Name CTEM
 Area JAMISON/MASON
 State NT

Party Manager..... R.R.PEARCE
 Client Rep..... D.McINNES
 Crew Address..... C/Dunmarra Roadhouse
 Crew Phone No..... 007114051

	MON 27	TUE 28	WED 29	THU 30	FRI 31	SAT 1	SUN 2	WEEK	MONTH	JOB
Travel Hours.....	2.00	2.00	2.00	5.00	2.00	1.00	0.00	14.00	93.00	
Test Hours.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recording Hours...	9.00	11.00	8.00	2.00	12.00	6.00	0.00	48.00	295.00	
Other Hours.....	8.00	6.00	5.00	9.00	6.00	2.50	0.00	36.50	185.75	
Total Hours.....	19.00	19.00	15.00	16.00	20.00	9.50	0.00	98.50	571.25	1093.50
Total loops.....	10	11	9	4	16	7	0	57	327	590
Total loops cut...	7	7	11	8	6	2	0	41	322	593
Weather.....	Fine	Fine	Fine	Fine	Fine	Fine	Fine			

Down Time -	MON 27	TUE 28	WED 29	THU 30	FRI 31	SAT 1	SUN 2	WEEK	MONTH	JOB
Generator.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	
Tx/Rx.....	1.00	0.00	2.00	2.00	0.00	0.00	0.00	5.00	15.25	
Cables.....	0.00	0.00	1.00	1.00	0.00	0.00	0.00	2.00	10.50	
Other.....	0.00	1.00	2.00	1.00	0.00	0.00	0.00	4.00	17.25	
Other.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Down Time..	1.00	1.00	5.00	4.00	0.00	0.00	0.00	11.00	48.00	146.85

WEEKLY EQUIPMENT STATUS

COMMENTS, VISITORS, ETC.

Hilux (hired) returned to Darwin 2/8/92

11, Person left crew 28/7/92

11, Pacific Oil and Gas left 29/7/92

Generator (Hired) returned to Darwin 2/8/92

11, Russian left crew 2/8/92

19, Geos. personnel left crew

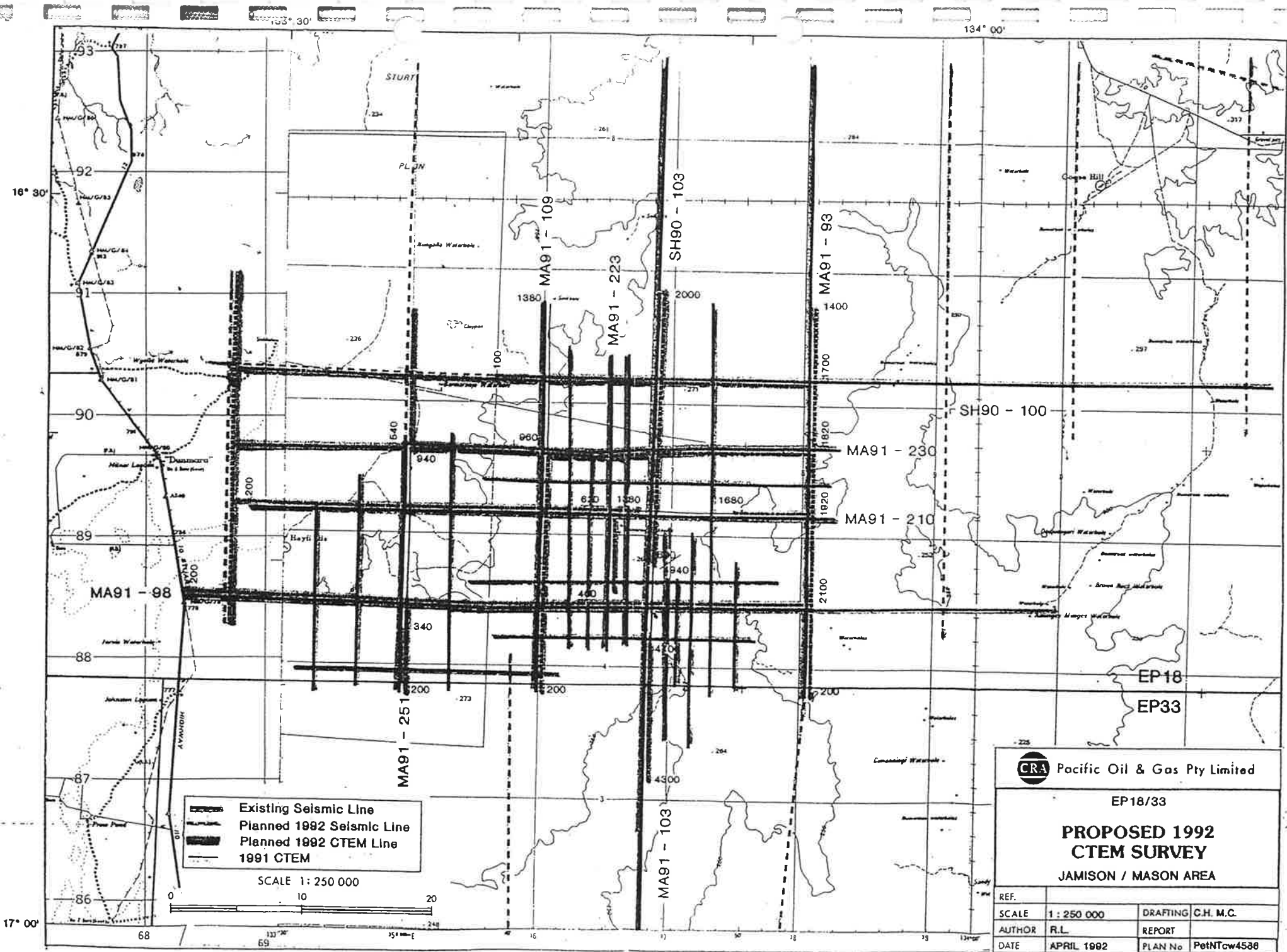
REMARKS

Line 91-109 completed Crew completed program 1/8/92
 Line 91-251 completed 2/8/92 spent packing up equipment
 Line 91-103 completed
 Line 91-296 completed
 Line 91-223 completed

2, Recording crews used to shoot line 91-223 (leap frogging)

VEHICLES & EQUIPMENT

Party Manager.....	7MC078	UTE	ACCOM/STORES VAN No.1	7TF340	7 PEOPLE
Surveyor.....	70S643	UTE	ACCOMODATION VAN No.2	7TF341	8 PEOPLE
Chaining.....	341-124	UTE (PACIFIC OIL & GAS)	ACCOMODATION VAN No.3	6UR106	8 PEOPLE
Chaining.....	8AD128	PC	ACCOM/OFFICE VAN No.4	6UR103	4 PEOPLE
Recording Group A..	500-422	HILUX (HIRED)	ACCOM/OFFICE VAN T	504	2 PEOPLE
Recording Group B..	71Q055	PC	KITCHEN VAN		
Line Group A.....	71B915	UTE	SHOWER VAN (HIRED)		
Line Group B.....	71B914	UTE	4 TENTS		6 PEOPLE
Supply Truck.....	6YR169	ISUZU	80 KVA GENERATOR (HIRED)		



CRA Pacific Oil & Gas Pty Limited

EP18/33

**PROPOSED 1992
CTEM SURVEY**

JAMISON / MASON AREA

REF.			
SCALE	1 : 250 000	DRAFTING	C.H. M.C.
AUTHOR	R.L.	REPORT	
DATE	APRIL 1992	PLAN No	PetNTcw4538