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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Basin Formation Dakota County San Juan  
Initial X Annual            Special            Date of Test             
Company Austral Oil Co. Lease Pementa et al Well No. 1  
Unit J Sec. 13 Twp. 27N Rge. 9W Purchaser             
Casing 4 1/2" Wt. 10.5# I.D.            Set at 6664 Perf. 6336 To 6389  
Tubing 1 1/4" Wt. 2.4# I.D.            Set at 6318 Perf. Open End To             
Gas Pay: From            To            L            xG .65 est. -GL            Bar.Press.             
Producing Thru: Casing            Tubing X Type Well Single - Gas             
Date of Completion:            Packer            Single-Bradenhead-G. G. or G.O. Dual             
Reservoir Temp.           

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps           

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Griffice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						2117		2117		
1.										
2.		3/4"	218	58°				1485		3 Hrs.
3.										
4.										
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD @ 15.025 psia
1.							
2.	12.365		230	1.0019	.9608	1.025	2806
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio            cf/bbl.  
Gravity of Liquid Hydrocarbons            deg.  
F<sub>c</sub>            (1-e<sup>-s</sup>)             
Specific Gravity Separator Gas             
Specific Gravity Flowing Fluid             
P<sub>c</sub> 2129 P<sub>c</sub> 4.532.641

No.	P <sub>w</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-s</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> /P <sub>c</sub>
1.									
2.	1497					2,241,009	2,221,632		1.9779
3.									
4.									
5.									

Absolute Potential: 4680 MCFPD; n = .75 1.6678  
COMPANY Austral Oil Co.  
ADDRESS Box 224, Farmington, N. H.  
AGENT and TITLE Original signed by T. A. Dugan Thomas A. Dugan, Consulting Engineer  
WITNESSED             
COMPANY           

REMARKS

## INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

## NOMENCLATURE

$Q$  = Actual rate of flow at end of flow period at W. H. working pressure ( $P_w$ ).  
MCF/da. @ 15.025 psia and 60° F.

$P_c$  = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.  
psia

$P_w$  = Static wellhead working pressure as determined at the end of flow period.  
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

$P_t$  = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

$P_f$  = Meter pressure, psia.

$h_w$  = Differential meter pressure, inches water.

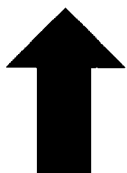
$F_g$  = Gravity correction factor.

$F_t$  = Flowing temperature correction factor.

$F_{pv}$  = Supercompressability factor.

$n$  = Slope of back pressure curve.

Note: If  $P_w$  cannot be taken because of manner of completion or condition of well, then  $P_w$  must be calculated by adding the pressure drop due to friction within the flow string to  $P_t$ .



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**Job separation sheet**

Initial Deliverability  
Test

3 MOCC ✓  
1 Austral  
1 El Paso  
1 File

Form C-122-A  
Revised April 20, 1955

NEW MEXICO OIL CONSERVATION COMMISSION  
GAS WELL TEST DATA SHEET - - SAN JUAN BASIN

(TO BE USED FOR FRUITLAND, PICTURED CLIFFS, MESAVERDE, & ALL DAKOTA  
EXCEPT BARKER DOME STORAGE AREA)

Pool Basin Formation Dakota County San Juan  
Purchasing Pipeline El Paso Natural Gas Co. Date Test Filed 11-23-65  
Operator Austral Oil Co. Lease Ramanta Well No. 1  
Unit I Sec. 13 Twp. 27N Rge. 9W Pay Zone: From 6331 To 6389  
Casing: OD 4 1/4" WT. 10.5# Set At 6664 Tubing: OD 1 1/4" WT. 2.4# T. Perf. 318  
Produced Through: Casing \_\_\_\_\_ Tubing X Gas Gravity: Measured .688 Estimated \_\_\_\_\_  
Date of Flow Test: From 10-13-65 To 10-21-65 \* Date S.I.P. Measured 3-14-65  
Meter Run Size 4" Orifice Size 1.250 Type Chart 3.1 Type Taps Range

OBSERVED DATA

Flowing casing pressure (Dwt) 646 psig + 12 = 658 psia (a)  
Flowing tubing pressure (Dwt) 496 psig + 12 = 508 psia (b)  
Flowing meter pressure (Dwt) 485 psig + 12 = 497 psia (c)  
Flowing meter pressure (meter reading when Dwt. measurement taken:  
Normal chart reading \_\_\_\_\_ psig + 12 = \_\_\_\_\_ psia (d)  
Square root chart reading (7.0)<sup>2</sup> x spring constant 10 = 490 psia (d)  
Meter error (c) - (d) or (d) - (c) ± \_\_\_\_\_ psi (e)  
Friction loss, Flowing column to meter:  
(b) - (c) Flow through tubing: (a) - (c) Flow through casing = +11 psi (f)  
Seven day average static meter pressure (from meter chart):  
Normal chart average reading \_\_\_\_\_ psig + 12 = \_\_\_\_\_ psia (g)  
Square root chart average reading (\_\_\_\_\_)<sup>2</sup> x sp. const. = 490 psia (g)  
Corrected seven day avge. meter press. (p<sub>f</sub>) (g) + (e) = 498 psia (h)  
P<sub>t</sub> = (h) + (f) = 508 psia (i)  
Wellhead casing shut-in pressure (Dwt) 2117 psig + 12 = 2129 psia (j)  
Wellhead tubing shut-in pressure (Dwt) 2117 psig + 12 = 2129 psia (k)  
P<sub>c</sub> = (j) or (k) whichever well flowed through = 2129 psia (l)  
Flowing Temp. (Meter Run) \_\_\_\_\_ °F + 460 = \_\_\_\_\_ °Abs (m)  
P<sub>d</sub> = 1/2 P<sub>c</sub> = 1/2 (l) = 1064 psia (n)

FLOW RATE CALCULATION

$$Q = \frac{719}{(\text{Integrated})} \times \left( \frac{\sqrt{(c)} - \sqrt{(d)}}{\sqrt{(c)}} \right) = \frac{721}{1.0071} = 721 \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q \frac{721}{\left[ \frac{(P_c^2 - P_d^2)}{(P_c^2 - P_w^2)} \right]^{.75}} = 619 \text{ MCF/da}$$

SUMMARY

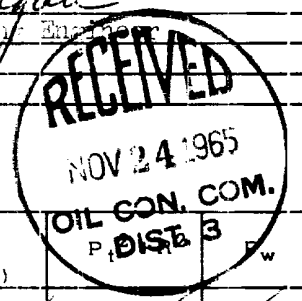
P<sub>c</sub> = 2129 psia  
Q = 721 Mcf/day  
P<sub>w</sub> = 587 psia  
P<sub>d</sub> = 1064 psia  
D = 619 Mcf/day

Company Austral Oil Co.  
By J. H. Hagan  
Title Consulting Engineer  
Witnessed by \_\_\_\_\_  
Company \_\_\_\_\_

- \* This is date of completion test.
- \* Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	(1-e <sup>-S</sup> )	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-S</sup> )	P <sub>t</sub> <sup>2</sup> (Column i)	P <sub>d</sub> <sup>2</sup>	P <sub>w</sub>
4347	.771	317.725	86.104	250,060	144,168	587





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**Job separation sheet**

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NEW MEXICO OIL CONSERVATION COMMISSION

REQUEST FOR ALLOWABLE

AND

AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104

Supersedes Old C-104 and C-110  
Effective 1-1-64

I. **OWNER**  
Austral Oil Company Incorporated  
2700 Humble Building, Houston, Texas 77002  
Reasons for filing (check or write box) Other (Please explain)  
New Well ☒ Change in Transporter of: Oil ☐ Dry Gas ☐ to replace oil form previously filed.  
Recompletion ☐ Casinghead Gas ☐ Condensate ☐  
Change in ownership ☐

If change of ownership give name and address of previous owner -----

II. DESCRIPTION OF WELL AND LEASE

Lease Name Parenta et al Well No. 1 Pool Name, Including Formation Basin-Bakota Kind of Lease State, Federal or Private Lateral  
Location Unit Letter J 1450 Feet From The South Line and 1450 Feet From the East  
Line of Section 13 Township 27-N Range 1-W NMPM, El Paso County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate ☒ Address (Give address to which approved copy of this form is to be sent)  
McWood Dry Lease Producers 1450 Camino, El Paso, TEXAS  
Name of Authorized Transporter of Casinghead Gas or Dry Gas ☐ Address (Give address to which approved copy of this form is to be sent)  
El Paso Natural Gas Company P. O. Box 1412, El Paso, TEXAS  
If well produces oil or liquids, give location of tanks Unit Sec. Twp. Rge. Is gas actually connected? When  
J 13 27-N 1-W NO

If this production is commingled with that from any other lease or pool, give commingling order number: -----

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res't	Diff. Res't
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date Spudded 2-16-65	Date Compl. Ready to Prod. 3-1-65	Total Depth 6665'	P.B.T.D. 6664'					
Pool Basin-Bakota	Name of Producing Formation Bakota	Top Oil/Gas Pay 6536'	Tubing Depth 6267'					
Perforations 6366-46', 6406-45', 6472-99', 6502-89', 6514-22', 6534-50', 6571-82'		Depth Casing Shoe 6564'						
TUBING, CASING, AND CEMENTING RECORD								
HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT					
12-1/4"	8-5/8"	343'	100					
7-1/8"	4-1/2"	6664'	27-4-1/2" V Tools					
	1-1/4"	6267'						

V. TEST DATA AND REQUEST FOR ALLOWABLE OIL WELL

(Test must be after recovery of total volume of fluid oil and must be equal to or greater than allowable for this depth or be for full 24 hours)

Date First New Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Shoke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-Bbls.

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
1,775	10 hrs.	16.3	51.3°
Testing Method (pilot, back pr.)	Tubing Pressure	Casing Pressure	Shoke Size
back Pressure	565#	1,145#	60#

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Marvin E. Smith (Signature)  
Senior Staff Engineer (Title)

July 21, 1965 (Date)

OIL CONSERVATION COMMISSION

APPROVED JUL 14 1965, 19  
BY Original Signed Emery C. Arnold  
TITLE Supervisor Dist. # 3

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out Sections I, II, III and VI only for changes of owner, well name or number, or transporter or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.



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**Job separation sheet**

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OPERATOR	GAS
PERMITTING OFFICE	

NEW MEX CO OIL CONSERVATION COMMISSION  
REQUEST FOR ALLOWABLE  
AND  
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104  
Supersedes Old C-104 and C-110  
Effective 1-1-65

1. NAME OF COMPANY	
Austral Oil Company Incorporated	
2. ADDRESS	
2700 Humble Building, Houston, Texas 77002	
3. TYPE OF WELL (Oil, Gas, or Both)	
Oil <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Both <input type="checkbox"/>	
4. CHANGE IN TRANSPORTER OF:	
Oil <input type="checkbox"/> Gas <input type="checkbox"/> Both <input type="checkbox"/>	
5. EFFECTIVE DATE	
EFFECTIVE MARCH 1, 1967	

If change of ownership given name and address of previous owner

II. DESCRIPTION OF WELL AND LEASE

Well Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Rementa et al	1	Basin-Dakota	State, Federal or Free	Federal
1450	Feet From The	South	Line and	1450
13	Township	27-N	Range	3-E
		NMPM		Oil
				County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil	or Condensate	Address (Give address to which approved copy of this form is to be sent)
THE PERMIAN CORPORATION		P. O. BOX 3119, MIDLAND, TEXAS 79701
Name of Authorized Transporter of Gas	or Dry Gas	Address (Give address to which approved copy of this form is to be sent)
El Paso Natural Gas Company		P. O. Box 1422, El Paso, Texas
Unit	Sec.	Twp.
J	13	27-N
Range	3-E	
Is gas actually connected?		
Yes		
September 29, 1965		

If its production commingled with that from any other lease or pool, give commingling order number

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Drill Back	Side Port	Diff. Rest.
		X						
Date Comp. Ready to Prod.	Total Depth		FEET					
Name of Producing Formation	Top Oil/Gas Pay		Feet					
Depth Casing Shoe								

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE OIL WELL

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MMCF

GAS WELL

Actual Prod. Gas-MMCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (front, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

D. D. Delaney

Chief Production Clerk (Title)

February 20, 1967 (Date)

(Signature)

OIL CONSERVATION COMMISSION

APPROVED

BY Original Signatures

TITLE

SUPERVISOR

This form is to be filed in compliance with RULE 104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.