

GL01949

Geothermal Resources Well Summary Report

SUBMIT IN DUPLICATE

Operator Chevron Oil Company Well No. Ginn #1-13

13, T. 31N, R. 47E, MD B. & M. Beowawe Field Lander County.

Location 660' West & 660' North of Southeast Corner Sec. 13, T.31N., R.47E., MDB&M
(Give location from property or section corner, or street center lines)

Elevation of ground above sea level 4946.9 ~~feet~~ ^{feet}

All depth measurements taken from top of Kelly Bushing which is 13.5 ^{feet} ~~meters~~ above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

Date June 16, 1975

Signed A. M. Cooper *AMC*

Title Sr. Project Manager
(President, Secretary or Agent)

(Engineer or Geologist)

(Superintendent)

Commenced drilling 1/22/74
Completed drilling 6/30/74
Total depth 9563' Plugged depth --
Junk Side tracked (Jars, 90' drill collars, bit @ 8522')

GEOLOGICAL MARKERS	DEPTH
<u>Volcanics</u>	<u>155'-4560'</u>
<u>Valmy (Western Facies)</u>	<u>4560'-9563'</u>
<u>(See Attachment)</u>	

Commenced producing Not Producing -- Suspended
(Date)

Geologic age at total depth: Ordovician

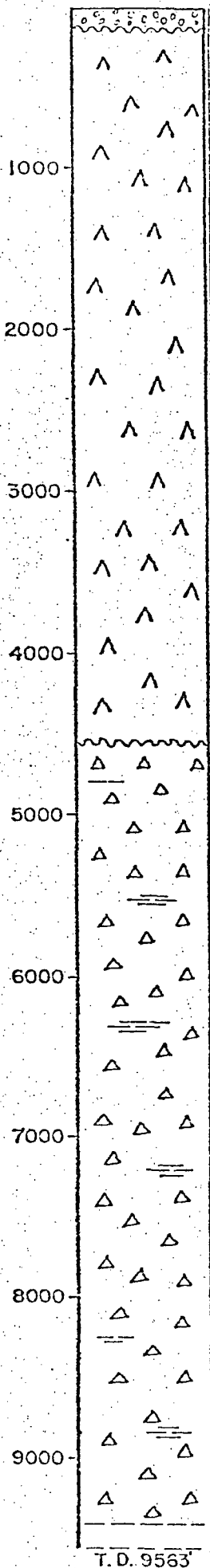
Date	Static test Shut-in well head	Production Test Data (See Attachment)							
		Total Mass Flow Data				Separator Data			

CASING RECORD (Present Hole)

Size of Casing (P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cement if through pipe
<u>0"</u>	<u>123'</u>	<u>Surface</u>	<u>94#</u>	<u>New</u>	<u>Seamless</u>	<u>H-40</u>	<u>26"</u>	<u>Ready Mix</u>	<u>-</u>
<u>3-3/8"</u>	<u>812'</u>	<u>Surface</u>	<u>54.5#</u>	<u>New</u>	<u>Seamless</u>	<u>K-55</u>	<u>17 1/2"</u>	<u>285</u>	<u>-</u>
<u>7"</u>	<u>9481'</u>	<u>Surface</u>	<u>23# & 26#</u>	<u>New</u>	<u>Seamless</u>	<u>K-55 & N-80</u>	<u>9-7/8 & 12 1/4"</u>	<u>Not Cemented Hung from Head</u>	<u>Casing</u>

PERFORATED CASING

(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)



0-155'
Valley Fill

20" @
123'

13 3/8" @
812'

155'-4560'
Volcanics

4560'-9563'
Valmy Fm.
(Western facies)
Quartzite w/
minor amt.
interbedded
Shale & Chert

Fractured Valmy
at T.D.

T.D. 9563' 7" @ 9481'

CHEVRON - ATR
GINN 1-13

OPERATOR: CHEVRON OIL CO.

T31N - R47E - SEC. 13 - CENTER OF SE 1/4 SE 1/4

LANDER CO., NEV.

SPUD: 1-25-74

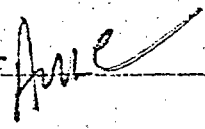
TD: 9563' ON 6-13-74

History of Geothermal Resources Well

SUBMIT IN DUPLICATE

OPERATOR Chevron Oil Company FIELD Beowawe, Nevada

Well No. Ginn #1-13, Sec. 13, T. 31N, R. 47E, MD B. & M.

Date June 16, 1975 Signed A. M. Cooper 

225 Bush Street
 San Francisco, CA 94104 (415) 894-3825 Title Senior Project Manager
(Address) (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data and zone temperatures.

Date

- 1/23/74 Spudded well at 5 P.M. Drilled and opened Hole (26") to 125'.
- 1/24/74 Cemented 123'-20" O.D., H-40, conductor pipe.
- 1/25/74 Drilled 17½ hole to 812'.
- to
- 1/30/74
- 1/31/74 Ran 13-3/8" casing; surface to 812'. Using Halliburton cemented with 503 cu.ft. Class G-Poxmix cement w/35% silica flour followed by 288 cu.ft. of Class G cement with 35% silica flour. Cement not to surface. Cemented top of 13-3/8" casing with 101 cu.ft. of Class G cement, 35% silica flour.
- 2/1/74 Installed 13-3/8" slip over and weld 12"-3000 psi gray casing head, Class III Bope and tested.
- 2/2/74 Drilled 12¼" hole 812'-5248'. Bit stopped at 5248' going into hole. Unable to jar loose
- to
- 2/27/74
- 2/28 to Fishing for stuck tools. Jarred loose 3/6/74.
- 3/6/74
- 3/7 to Drilled 12¼" hole 5248-8644'. Dropped tools into hole 4/6/74.
- 4/6/74
- 5/7 to Fishing for stuck tools.
- 5/21/74
- 5/22/74 Ran Schlumberger Dipmeter, DIL, CNL-FDC and Gamma-Caliper Logs; 812-8500'
- 5/23 to Side tracking fish.
- 5/27/74
- 5/28 to Drilled 9-7/8" hole 8644'-9551'. Lost circulation.
- 5/14/74
- 5/15 to Attempting to regain circulation and test. Testing not successful.
- 5/21/74
- 5/20/74 Ran 7" casing from surface to 9481', hung in surface casing head. Unable to cement casing. Filled annulus to surface.
- 5/27 to Rigged up Halliburton Testers, Nowsco H₂ service, set packer at 9343' and conducted
- 5/29/74 Drill Stem Test injecting nitrogen to lift fluid (water).

History of Geothermal Resources Well (page 2)

SUBMIT IN DUPLICATE

OPERATOR _____ FIELD _____

Well No. _____, Sec. _____, T. _____, R. _____, B. & M. _____

Date _____, 19____ Signed _____

(Address) _____ (Telephone Number) _____ Title _____ (President, Secretary or Agent) _____

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data and zone temperature.

Date

Continued

DST SUMMARY:

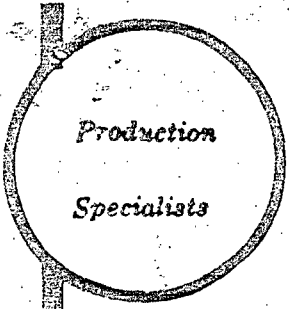
Well Depth - 9551'
 Bottom 7" casing - 9461'
 Packer Depth - 9343'
 Drill Pipe size - 3½" (2.764" I.D.)

1. Ran ¾" reel tubing to 3000'. Encountered Fluid Level at 1300'.
2. Started Nitrogen Injection (100 cfm) at 10:20 A.M. 6/27 with first fluid to surface at 10:40 A.M. 6/27. Continued injection of Nitrogen, 100 cfm-300 cfm until 2:00 P.M. 6/29 and then shut in well.
3. Measured Flow Rates during test ranged from 52 gpm-76 gpm against well surface pressures of 90 psig-200 psig with a surface fluid temperature range of 118°F to 204°F at end of test period.
4. Analysis of water samples (summary).

Na - 260 ppm	Co ₂ - 22 ppm
Ca - 16 ppm	pH - 8.6
Cl - 75 ppm	T.D.S. - 1390 ppm

/30/74 Cored 9551'-9563'. Recovered 1.5' of fractured Valmy.

/30/74 Conditioned hole, filled hole with water, layed down drill pipe, installed 10" 2000# Crane gate valve on wellhead and suspended well at 10 P.M.



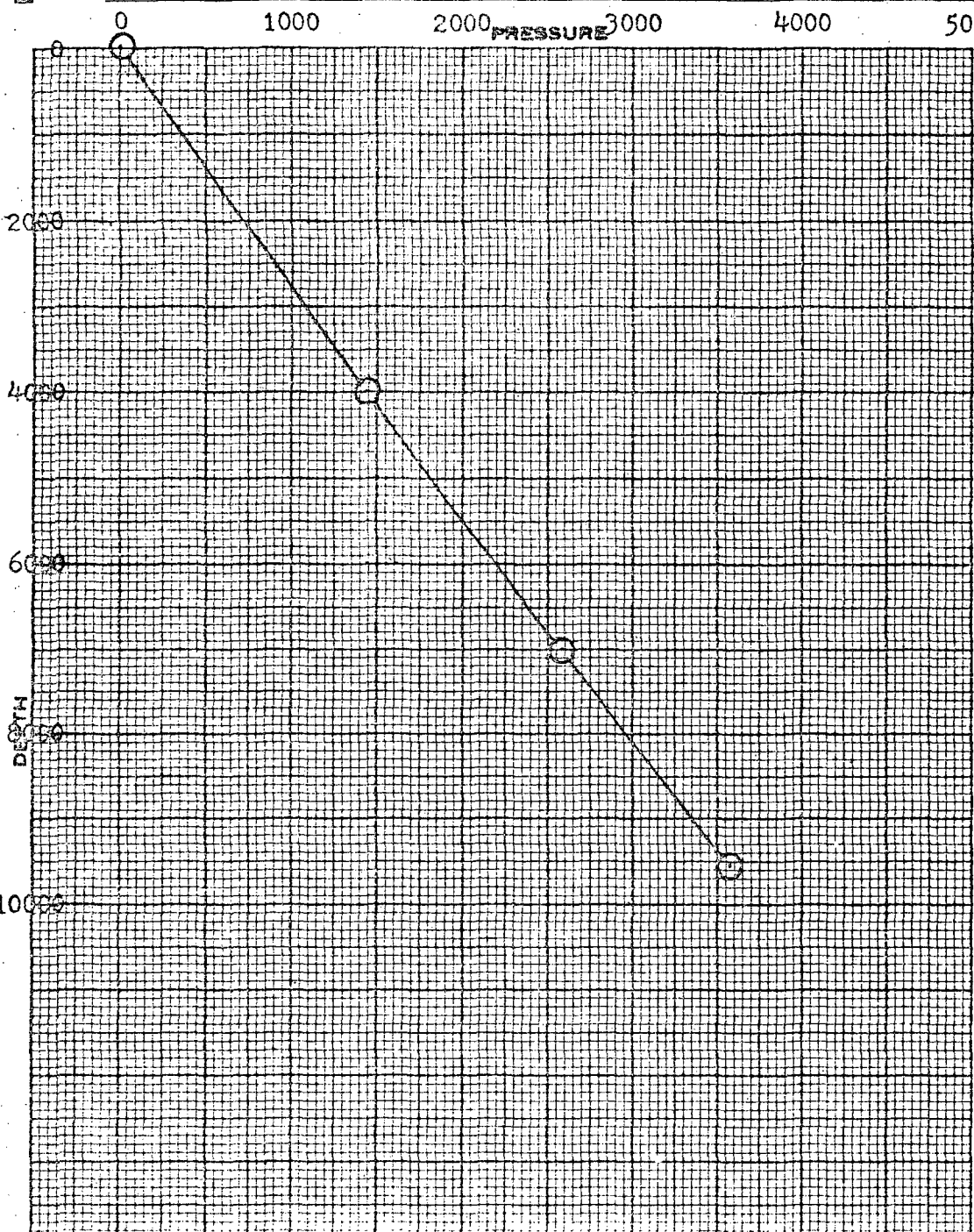
AGNEW AND SWIFT

3914 GILMORE AVENUE
 BAKERSFIELD, CALIFORNIA
 93303

24 HOUR PHONE 327-2267
 AREA CODE 805

SUBSURFACE PRESSURE SURVEY

OWNER: CHEVRON OIL COMPANY FIELD: BEOWAWE WELL NAME: GINN NO. 1-13
 CASING: 7" C. at 9461' ELEV: 4946.9' DATE: AUGUST 22, 1974
 LINER DESCRIPTION: ZERO POINT: MAT + 13.5'
 (9-7/8" open hole to 9561') DEPTH: ZONE:
 TUBING DETAIL: INSTRUMENT: 5100 PSIK
 SERIAL NO. 8440N
 PUMP SHOE: GAS ANCHOR: INTAKE: 12 Hour 15 Turns
 PURPOSE: STATIC PRESSURE GRADIENT SURVEY MAX. TEMP. 411 °F @ 9550'
 REMARKS:



STABILIZATION PERIOD		
GROSS OIL RATE B/D		
NET OIL RATE B/D		
FORMATION GAS MCF/D		
GOR CFT/BBL		
CIRCULATED GAS MCF/D		
OIL DRY GRAVITY °API		
PRESSURES	OBS	COR
CASING, PSI		0
TUBING, PSI		
DEPTH	PRESSURE	GRADIENT
0	0	---
4000	1428	.357
7000	2594	.389
9550	3570	.383

TIME ON BOTTOM
 6:58 P.M. 8-22-74
 TIME OFF BOTTOM
 7:08 P.M. 8-22-74

Chevron Oil Co. Ginn #13-1
Sec. 13, 31N-47E
Lander Co., Nevada

CORE DESCRIPTION

Cored 9551-63 on 6/29/74
Recovered 1'8"

9551'-57' cored rapidly, averaging 6 minutes/ft., probably no recovery from this interval based upon lost circulation just above and material recovered in top of core.

Interpretation: Fractured zone, with multitude of open fractures or principally large open fractures lined with crystalline qtz.; probable fault zone.

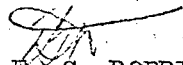
9557'-61' probably no recovery.

9561'-62' recovered 8" breccia, angular fragments 0.1" to 1" across in crystalline qtz. matrix; vertical open fracture lined with med. size qtz. crystals. Fragments predom. light gray to dark gray fractured chert, as in cuttings above; minor amt. fragments of black argillite and greenstone (as above); pyrite filling some fractures in chert; isolated pyrite crystals among crystalline qtz.

Interpretation: fault breccia.

9562'-63' recovered 12" chert, dark gray, intricately fractured, fractures filled with crystalline qtz., sizes from hairline veinlets to large vein $\frac{1}{2}$ " wide running almost vertically through length of core. This vein bifurcates into 2 veins in upper portion of core, and main vein is open with fine to medium qtz. crystals lining walls. Pyrite crystals in some fractures.

Interpretation: This may be within fault zone or immediately below.


E. G. DOERICK
7-10-74

BASIC DATA:

- | | |
|---|----------------------|
| 1. Pressure Recorders - Clocks started | 7:30 PM 6/26 |
| 2. Bottom of 7" casing | <u>9461'</u> |
| 3. Test Packer Depth | <u>9343.49'</u> |
| 4. 9-7/8" Open Hole | <u>9461-9551'</u> |
| 5. Time Packer Set | <u>1 AM 6/27</u> |
| 6. Started Reel Tubing in Hole | <u>AM 6/27</u> |
| 7. Nitro Injection started | <u>10:20 AM 6/27</u> |
| 8. Fluid encountered @ | <u>1300' ±</u> |
| 9. 1st Fluid to Surface | <u>10:40 AM 6/27</u> |
| 10. Nitro Injection Rate 100 cfm continued injecting and ran Reel Tubing to <u>3000'±</u> . Surface Injection Press. 1100 PSI | |

TEST DATA

	*		Flow Line Out Temp	
Time		Production Rate		Remarks
6/27 11:05 AM		Increasing	-	Rate approx. double
11:25		Increased	118°F	
11:45		-	122°F	Appearance change - foamy
12:15 PM		Est. slight increase	132°F	Same appearance
12:45		No apparent change	148°F	-
1:00		Appeared to increase	153°F	-
1:30		-	159°F	Foamy
1:45		Seemed more lively	162°F	Foamy
2:00		More lively	167°F	-
2:30		More lively	173°F	-
3:00		No change	178°F	-
3:30		Rate appeared to increase	185°F	-
4:30		2100 B/D	190°F	15 min. tank gauge.
5:00		-	194°F	-
5:30		-	195°F	Well Head press.-100 PSI. PH-7.8
6:00		2260 B/D	203°F	Well Head press.-100 PSI. Tank
6:40		-	201°F	Nitro, shut off gau
6:55		Flow decreased to zero	-	Open N ₂ . Flow again.
7:30		-	-	Fluid to surface again.
7:40		Dead	-	Nitro. truck down. Well dead.
8:02		-	-	Well started to flow again.
9:24		-	-	Lowered Reel TBG to 4000'.
10:16 PM		1800 B/D?	202°F	15 min. tank test. About half way thru test steam increase & fluid bubbled over top of tank. N ₂ press.-1400 PSI; 100 cfm & well head press.-110#.
11:27 PM		-	204°F	15 min. tank gauge. No good.
6/28 12:15 AM		Heading	-	Turned to steam @ high rate. Well head press. 120#.
12:25		Steam	-	Shut off N ₂ . Steam flow continued Somewhat lower noise level.
12:45		-	-	Started to die.
12:48		-	-	Started N ₂ again just before flow died.

Time	* Production Rate	Flow Line Out Tempo	Remarks
6/28 12:58 AM	Rapidly increasing	-	Fluid to surface again. Appeared to be steam but mainly water.
1:15	Strong flow. Water & Steam.	-	Lowered N ₂ TBG to 4500'.
5:00	-	-	Stopped N ₂ injection. Strong 3 1/2" by 7" annulus blow.
5:20	~0	-	Flow essentially stopped.
6:05	-	-	Started N ₂ injection again at 4500'
6:25	-	-	Fluid to surface again.
6:55	2600 B/D	-	Tank gauge. Well Head press. -145
7:20	-	-	Lowered N ₂ TBG to 5000'.
8:45	-	-	Tank gauge. No good. Too much spillage. Well Head press. 145 PSI.
9:00	-	-	Lowered N ₂ TBG to 5500'.
9:40	-	-	N ₂ - 120 cfm. Up N ₂ to 200 cfm. Well Head press. 90#.
9:45	-	-	Lowered N ₂ TBG to 6000'. 200 cfm
10:25	Lively flow	-	Well Head press. 115#.
10:35	High flow indicated	-	Well Head press. 150#.
10:40	-	-	Raised N ₂ TBG to 5600'. Incr. N ₂ to 250 ft ³ .
11:30	Heading flow. High rate.	-	Well Head press. 156#.
11:45	High rate.	-	Well Head press. 155-165#.
12 Noon	-	-	Incr. N ₂ to 300 cfm.
12:15 PM	High flow with lively appearance	-	Well Head press. 140#.
12:30	" " " " "	-	" " " 183#.
1:00	" " " " "	-	Coming out of hole slowly with N ₂ TBG. Well Head press. 192#
1:25	" " " " "	-	Well Head press. 200#.
2:00	-	-	N ₂ Shut off.
2:03	Flow ceased	-	Puffs of vapor until 2:45 P.
2:45	-	-	Shut drill pipe valve.

* Does not include steam flashed. Maximum formation temp. recorded during DST - 400°F. Maximum bottom hole temp. recorded 8/22 - 412°F (Agnew & Sweet) and pressure 3559 PSI at 9550'.

FLUID SAMPLE DATA		Date	6-28-74	Ticket Number	633074
Sampler Pressure _____ P.S.I.G. at Surface	Kind of Job	STEAM PRODUCTION		Halliburton District	RIO VISTA
Recovery: Cu. Ft. Gas _____	Tester	BILL MARKER		Witness	A. COOPER
cc. Oil _____	Drilling Contractor	MONTGOMERY DRILLING COMPANY		SM S	
cc. Water _____	EQUIPMENT & HOLE DATA				
cc. Mud _____	Formation Tested	-			
Tot. Liquid cc. _____	Elevation	4960'	Ft.		
Gravity _____ ° API @ _____ °F	Net Productive Interval	9461-9551'	Ft.		
Gas/Oil Ratio _____ cu. ft./bbl.	All Depths Measured From	Kelly bushing			
	Total Depth	9551'	Ft.		
	Main Hole/Casing Size	7" 26# 70' 9 7/8" hole			
	Drill Collar Length	-	I.D.		
	Drill Pipe Length	9329'	I.D.	2.764"	
	Packer Depth(s)	9343'	Ft.		
	Depth Tester Valve	-	Ft.		

TYPE	AMOUNT	Depth Back Pres. Valve	Surface Choke	Bottom Choke
Cushion				
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			

Remarks Set packer at 1:00 6-27-74 - 3/4" endless tubing was run to 3000' pumping nitrogen at 1100 PSI at surface - 400 PSI at 3000'. Water to surface at 10:40 AM. Tubing was run to 4400' & 5500' maximum @ 1100 PSI surface - 2:45 stops closed at headopened blow out preventer.

Surface temperature 206°							
TEMPERATURE	Gauge No. 2845		Gauge No. 4212		Gauge No.		TIME
	Depth:	9345 Ft.	Depth:	9345 Ft.	Depth:	Ft.	
Est. °F.	120 Hour Clock		96 Hour Clock		Hour Clock		Tool 6-27 A.M.
	Blanked Off NO		Blanked Off NO		Blanked Off		Opened 1:00 P.M.
Actual 397 °F.	Pressures		Pressures		Pressures		Opened 6-28 XXX
	Field	Office	Field	Office	Field	Office	Bypass 7:00 P.M.
Initial Hydrostatic	3461	3485 ✓	-	3469			Reported
First Period Flow	Initial	3411	3485 ?				Minutes
	Final	3411	3435 ✓				Minutes
	Closed in	3461	3478	Clock stopped			
Second Period Flow	Initial						
	Final						
	Closed in						
Third Period Flow	Initial						
	Final						
	Closed in						
Final Hydrostatic	-	3478	-	3469			

*Clock apparently stopped during flow. only 1365 minutes recorded.

Legal Location Sec. - Twp. - Rng. 13 31N 47 E
 Lease Name Well No. 4
 Field Area BEOWAME
 Meq. From Tester Valve
 County LANDER
 State NEVADA
 CHEVRON OIL COMPANY MINERAL STAFF
 Lease Owner/Company Name
 1-13 4
 9343 - 9551'
 Tested Interval

CHEVRON OIL COMPANY MINERAL STAFF
 Lease Owner/Company Name

633074
 Ticket Number

B.T. 2845

B.T. 4212

B.T. _____

Depth 9345

Depth 9345'

Depth _____

120 hour clock

96 Hour clock

Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
On bottom								
.0000		3485						
.2270		3480						
Injection								
.2270		3480	Clock stopped					
.2530		3458						
Flow								
.2530		3458						
.2900		3438						
Gas injection								
.2900		3433						
.2970		3445						
Flow								
.2970		3445						
.3530		3445						
Gas injection								
.3530		3445						
.3580		3453						
Flow								
.3600		3443						
.4160		3443						
Gas injection								
.4160		3443						
.4320		3478						
Gas injection								
.4340		3418						
.4450		3480						
Gas injection								
.4480		3435						
.4540		3470						
Flow								
.4580		3443						
.5340		3443						
Gas injection								
.5370		3423						
.5450		3475						
Gas injection								
.5480		3403						
.5650		3478						
Gas injection								
.5680		3400						
.5740		3428						
Flow								
.5770		3418						
.6640		3423						

REMARKS:

SPECIAL PRESSURE DATA

B.T. 2845

B.T. 4212

B.T. Page 2

Depth 9345'

Depth 9345'

Depth

120 Hour clock

96 Hour clock

Time Defl. ".000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. ".000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. ".000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
Gas injection								
.6640		3423						
.6940		3480						
Flow			Clock stopped					
.6980		3390						
.7720		3430						
Gas injection								
.7720		3430						
.7840		3453						
Flow								
.7920		3420						
.8720		3435						
Clock apparently stopped during flow period.... only 1365 minutes recorded.								
CLOSED IN PRESSURE								
.0000		3435						
.0006		3440						
.0013		3450						
.0019		3455	Clock stopped					
.0026		3463						
.0032		3468						
.0038		3470						
.0045		3473						
.0051		3473						
.0058		3473						
.0064		3473						
.0192		3475						
.0320		3475						
.0447		3475						
.0575		3475						
.0703		3475						
.0831		3475						
.0959		3475						
.1087		3475						
.1215		3475						
.1342		3478						
.1470		3478						
.1598		3478						
.1630		3478						
First 10 intervals are equal to 1 minute each, next 12 intervals are equal to 20 minutes, last = 5 minutes								

REMARKS:



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub				
Water Cushion Valve				
Drill Pipe	3.50"	2.764"	9329'	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler				
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case				
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	5.70"	2.36"	6'	9343'
Distributor				
Packer Assembly				
Flush Joint Anchor	2.37"	1.99"	6'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	Kuster 1" K-2 recorders ran outside 2 3/4" anchor			9345'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				
Total Depth				

Formation Testing Service Report

GIIN 7-13

Lease Name

1-13

Well No.

4

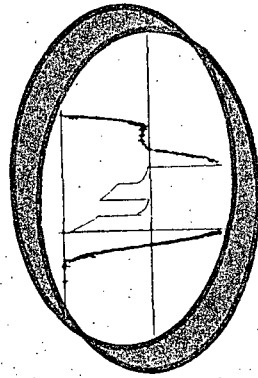
Test No.

9343 - 9551'

Tested Interval

CHEVRON OIL COMPANY MINERAL STAFF

Lease Owner/Company Name



HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

GLIN 1-13

Lease Name

Well No.

Test No.

9343

9551

Tested Interval

CHEVRON OIL COMPANY MINERAL STAFF

Lease Owner/Company Name

Legal Location
Sec. - Twp. - Rng.

13 31N 47 E

Field Area
BEOVAWE

County
LANDER

State
NEVADA

FLUID SAMPLE DATA		Date	6-28-74	Ticket Number	633074
Sampler Pressure _____ P.S.I.G. at Surface	Recovery: Cu. Ft. Gas _____	Kind of Job	STEAM PRODUCTION	Halliburton District	RIO VISTA
cc. Oil _____	cc. Water _____	Tester	BILL MARKER	Witness	A. COOPER
cc. Mud _____	Tot. Liquid cc. _____	Drilling Contractor	MONTGOMERY DRILLING COMPANY SM S		
Gravity _____ ° API @ _____ °F.	Gas/Oil Ratio _____ cu. ft./bbl.	EQUIPMENT & HOLE DATA			
RESISTIVITY _____	CHLORIDE CONTENT _____	Formation Tested	-		
Recovery Water _____ @ _____ °F. _____ ppm	Recovery Mud _____ @ _____ °F. _____ ppm	Elevation	4960'	Ft.	
Recovery Mud Filtrate _____ @ _____ °F. _____ ppm	Mud Pit Sample _____ @ _____ °F. _____ ppm	Net Productive Interval	9461-9551'	Ft.	
Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm	Mud Weight 62.36 #/ cu. ft. vis _____ cp	All Depths Measured From	Kelly bushing		
		Total Depth	9551'	Ft.	
		Main Hole/Casing Size	7" 26# 70' 9 7/8" hole		
		Drill Collar Length	-	I.D. _____	
		Drill Pipe Length	9329'	I.D. 2.764"	
		Packer Depth(s)	9343'	Ft.	
		Depth Tester Valve	-	Ft.	

TYPE	AMOUNT	Depth Back Ft.	Surface Choke	Bottom Choke
Cushion				
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			
Recovered	Feet of			

Remarks Set packer at 1:00 6-27-74 - 3/4" endless tubing was run to 3000' pumping nitrogen at 1100 PSI at surface - 400 PSI at 3000'. Water to surface at 10:40 AM. Tubing was run to 4400' & 5500' maximum @ 1100 PSI surface - 2:45 stops closed at headopened blow out preventer.

Surface temperature 206°								
TEMPERATURE	Gauge No. 2845	Gauge No. 4212	Gauge No.	TIME				
	Depth: 9345 Ft.	Depth: 9345 Ft.	Depth: Ft.					
Est. °F.	120 Hour Clock		96 Hour Clock		Hour Clock			
	Blanked Off NO		Blanked Off NO		Blanked Off			
Actual 397 °F.	Pressures		Pressures		Pressures			
	Field	Office	Field	Office	Field	Office	Reported	Computed
Initial Hydrostatic	3461	3485	-	3469			Minutes	Minutes
First Period	Flow Initial	3411	3485					
	Flow Final	3411	3435				2265	*
	Closed in	3461	3478	Clock stopped			255	255
Second Period	Flow Initial							
	Flow Final							
	Closed in							
Third Period	Flow Initial							
	Flow Final							
	Closed in							
Final Hydrostatic	-	3478	-	3469				
*Clock apparently stopped during flow...only 1365 minutes recorded.								

B.T. 2845

B.T. 4212

B.T. _____

Depth 9345

Depth 9345'

Depth _____

120 hour clock

96 Hour clock

Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
On bottom								
.0000		3485						
.2270		3480						
Injection								
.2270		3480	Clock stopped					
.2530		3458						
Flow								
.2530		3458						
.2900		3438						
Gas injection								
.2900		3433						
.2970		3445						
Flow								
.2970		3445						
.3530		3445						
Gas injection								
.3530		3445						
.3580		3453						
Flow								
.3600		3443						
.4160		3443						
Gas injection								
.4160		3443						
.4320		3478						
Gas injection								
.4340		3418						
.4450		3480						
Gas injection								
.4480		3435						
.4540		3470						
Flow								
.4580		3443						
.5340		3443						
Gas injection								
.5370		3423						
.5450		3475 ✓						
Gas injection								
.5480		3403						
.5650		3478 ✓						
Gas injection								
.5680		3400						
.5740		3428						
Flow								
.5770		3418						
.6640		3423						

REMARKS:

B.T. 2845

B.T. 4212

B.T. Page 2

Depth 9345'

Depth 9345'

Depth

120 Hour clock

96 Hour clock

	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
	Gas injection								
	.6640		3423						
	.6940		3480						
	Flow			Clock stopped					
	.6980		3390						
	.7720		3430						
	Gas injection								
	.7720		3430						
	.7840		3453						
	Flow								
	.7920		3420						
	.8720		3435						
	Clock apparently stopped during flow period.... only 1865 minutes recorded.								
	CLOSED IN PRESSURE								
0	.0000		3435						
1	.0006		3440						
2	.0013		3450						
3	.0019		3455	Clock stopped					
4	.0026		3463						
5	.0032		3468						
6	.0038		3470						
7	.0045		3473						
8	.0051		3473						
9	.0058		3473						
10	.0064		3473						
11	.0192		3475						
12	.0320		3475						
13	.0447		3475						
14	.0575		3475						
15	.0703		3475						
16	.0831		3475						
17	.0959		3475						
18	.1087		3475						
19	.1215		3475						
20	.1342		3478						
21	.1470		3478						
22	.1598		3478						
23	.1630		3478						
	First 10 intervals are equal to 1 minute each, next 12 intervals are equal to 20 minutes, last = 5 minutes.								

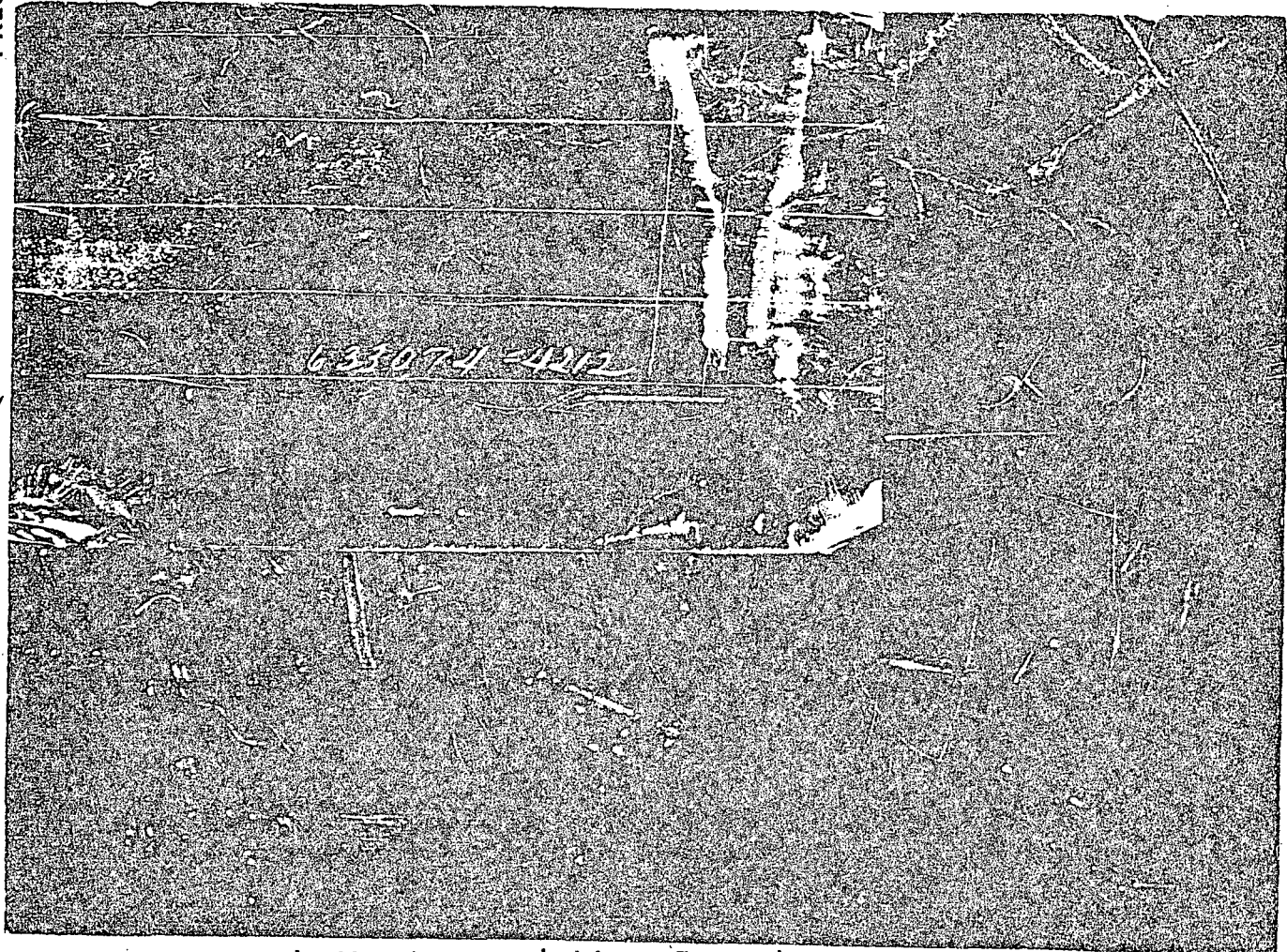
REMARKS:



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub				
Water Cushion Valve				
Drill Pipe	3.50"	2.764"	9329'	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler				
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case				
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	5.70"	2.36"	6'	9343'
Distributor				
Packer Assembly				
Flush Joint Anchor	2.37"	1.99"	6'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	Kuster 1" K-2 recorders ran outside 2 3/4" anchor			9345'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				
Total Depth				

PRESSURE

TIME



Each Horizontal Line Equal to 1000 p.s.i.

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

DRILL STEM TEST

Well: Chevron - ATR Ginn 1-13
Interval: 8605 - 9551'
Date: 6/28/74
Geologist: E.H. Hayes, M.A. Lane

Packer Depths: Upper: 8599, Lower: 8605

Time Tool Open: 7:40 AM, attempt to open; Tool actually open at 9:43.

Description of Blow: Strong at 10:15, weak at 10:20, dead at 10:23.

Fluid to surface: None.

Time tool shut: 10:33 AM

Time tool pulled loose: 12:18

Rise: Estimated at 1850'

Water Samples: None taken; Drilling mud in pipe.

Pressure Data:

Location of Recorder:	<u>Inside</u>	<u>Outside</u>	_____
Depth of Recorder:			
Temperature:	Thermometers Broken		
IH:	3692	3743	
IF:	1262	3114	
FF:	1544 ✓	3180	
FSI:	3169	3214	
FH:		3710	

Remarks: Nitrogen Cushion Used
Tool plugged

~~Bit set on shoulder from caused by
going to smaller hole~~

AREA, SPRING OR WELL NAME Chevron - ATR Ginn 1-13

COUNTY, STATE _____

S. T. R. _____

DST #1 2/9/74

BASIC DATA

Temp.

pH

Discharge

Deposits

ANALYSIS

T.D.S.	4000	SO ₄	250
SiO ₂	1280 (dilute)	F	4.2
Li	8.2	Cl	80
Na	830	Br	NA
K	32	I	3.1
Mg	58	CO ₃	<2.
Ca	330	HCO ₃	1060
B	30	Other	pH at Lab 7.8

ESTIMATED BASE TEMPERATURE

SiO₂

Na/K

Ca

Other

Distilled water 1.3 mg/l SiO₂

AREA, SPRING OR WELL NAME Chevron-ATR Ginn 1-13

COUNTY, STATE _____

S. T. R. _____

Samples from DST #2, 4/3/74

BASIC DATA

Temp.
pH
Discharge
Deposits

ANALYSIS in mg/l

T.D.S.	1010	SO ₄	100
* SiO ₂	120 (dilute)	F	16
* Li	10	Cl	65
* Na	420	Br	NA
* K	90	I	.5
* Mg	420	CO ₃	44
* Ca	98	HCO ₃	650
B	2.1		

Other pH at lab 8.2

* Run on RFS because of muddy sample.

ESTIMATED BASE TEMPERATURE

SiO₂
Na/K
Ca
Other

** Distilled H₂O 9.0 mg/l SiO₂

CHEVRON "CHEVRON-ATR-GINN" #1-13

DST #1

2234-2491

OPEN 90"

Slight blow immediately, increasing until blowing from bottom.

After 5" turned to sump for 15".

Turned back to floor hose with weak blow. Blow continued to increase with time until blowing from bottom.

After 1'15" turned to sump.

3' SIP

Recovered 762' drilling mud, possibly slight water cut near bottom.

	<u>Top</u>	<u>Top Bottom</u>	<u>Bottom</u>
IH	1067	1181	1196
IFP	41	166	196
FFP	329	557	489
FSIP	821	913	954
FH	1067	1161	1172
BHT	178°F		

MUD

Rm = 4.2
 Rmf = 4.1
 Salinity = 300 ppm

PST RECOVERY FROM DC ABOVE TEST TOOL

Rm = 4.6
 Rmf = 4.5
 Salinity = 250-300 ppm

BEOVAWE
#1-13 GINN

PACKERS (8358 BOTTOM
(8354 TOP

File
41333A

DST #2

Tool opened at 7:55 A.M. April 2, 1974.

Strong blow and until air column bled off. Shut in. Then weak steady flow.

At 8:03 tool slipped to bottom down 8-12 feet more. #40,000 on tool all the time.

Continued steady weak blow to 8:15. Increasing to good steady blow at 8:20.

Decreased to weak steady blow at 8:30. Steady up 8:40. Decreasing to weak at

8:50. 8:55 dead. Pulled up to shut in at 9:25.

ISI 9:32 A.M. Shut in. Tried to pullout 11:35. Tool stuck - Pulling 11:45 - 12:05.

Filled pipe with mud. Pulling out at 1:00.

- 1) Last three drill collars plugged.
- 2) Tool plugged.
- 3) DST sample from 2nd drill collar 60 feet above tool. Muddier toward bottom.
- 4) About 3,000 feet of apparent rise ??? Muddy to clear to muddy.
- 5) Sand and silt in tool. Lt. beige to white very calc. ss. almost aren. ls. rounded to sub-rounded grain.
- 6) Packers pulled completely off.
- 7) Thermometers apparently shaken down by jaring. Scattered readings of 370°F, 325°F, 315°F
Kessler Max. 72C-557, 72C-583, Taylor
- 8) Rubber clock (0) rings vulcanized supposedly are good to 450°F.
- 9) Tool turned from red to black on outside. Indicating high heat (Haliburton man says geysers the same)
- 10) Samples (DST) have too much very fine material to filter. Will have to be pressure filtered at lab.
- 11) D.S.T. Charts indicate infinite reservoir at first glance. Flow pressure and shut in are a straight line. No decline apparent. I Flow = 90 Min.
FSI = 120 Min.

Chart 295-4 ft. off bottom. Flow & shutin flat

Chart 3380-8 ft. off bottom. Flow & shutin flat

12) Rubber packers completely ripped off.

13) Hydro. 3587. 3110 IFP, 3133 F. Flow. FST = 3133 #3380)
Hydro. 3595. 3099 IFP, 3099 F. Flow. FSI = 3120 # 295) Plugged

Hydro. 3596, F Flow. 2534, FSO = 3086

14) Salinity = Start of color change = 170 ppm

= Good rust red = 280 ppm

Flow Pressure (#2534) = 5838 feet of rise

DRILL STEM TEST

Well: Chevron - ATR Ginn 1-13
Interval: 8614 - 9551'
Date: 6/20/74
Geologist: E. H. Haynes, M. A. Lane

Packer Depths: Upper: 8608' Lower: 8614'

Time Tool Open: 1206 AM

Description of Blow: 2:25 AM, weak blow, increasing to steady

Fluid to surface: none

Time tool shut: 3:30 AM

Time tool pulled loose:

Rise: 1207'

Water Samples: None, pipe full of water-cut mud.

Pressure Data:

Location of Recorder:	<u>Inside</u>	<u>Outside</u>	<u>---</u>
Depth of Recorder:			
Temperature:	350°F	Broken	
IH	3708	3533	
IF	3391	3122	
FF:	2363	2995	
FSI:	3517	---	
FH:	3517	3470	

Remarks: Nitrogen Cushion Used

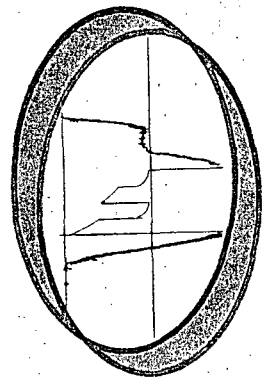
Formation Testing Service Report

GINN
Lease Name

1-13 1
Well No. Test No.

2233 - 2491'
Tested Interval

CHEVRON OIL COMPANY
Lease Owner/Company Name



WALBRIDGEMAN SERVICES

DUNCAN, OKLAHOMA

FLUID SAMPLE DATA				Date	Ticket Number						
Sampler Pressure _____ P.S.I.G. at Surface				2-9-74	633033						
Recovery: Cu. Ft. Gas _____				Kind of Job	Holliburton District						
cc. Oil _____				OPEN HOLE	RIO VISTA						
cc. Water _____				Tester	Witness						
cc. Mud _____				MR. BENSCOTER	MR. BUTLER						
Tot. Liquid cc. _____				Drilling Contractor	SM S						
Gravity _____ ° API @ _____ ° F.				EQUIPMENT & HOLE DATA							
Gas/Oil Ratio _____ cu. ft./bbl.				Formation Tested	Steam Zone						
RESISTIVITY				Elevation	4946' Fr.						
CHLORIDE CONTENT				Net Productive Interval	2233-2491' Ft.						
Recovery Water _____ @ _____ ° F. _____ ppm				All Depths Measured From	Kelly bushing						
Recovery Mud _____ @ _____ ° F. _____ ppm				Total Depth	2491' Ft.						
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm				Main Hole/Casing Size	12 1/4"						
Mud Pit Sample _____ @ _____ ° F. _____ ppm				Drill Collar Length	285' I.D. 2.75"						
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm				Drill Pipe Length	1912' I.D. 3.826"						
Mud Weight 67# / cu. ft. vis _____ cp				Packer Depth(s)	2227-2233' Ft.						
				Depth Tester Valve	2210' Ft.						
Cushion				TYPE	AMOUNT	Depth Back Pres. Valve	Surface Choke	Bottom Choke			
							Willis	3/8"			
Recovered 762 Feet of drilling fluid				Field Area				Meas. From Tester Valve			
Recovered Feet of				BEOWAME							
Recovered Feet of											
Recovered Feet of											
Recovered Feet of											
Remarks				Tool opened at 8:22 PM, opened to choke at 8:27 (1" choke), air closed to choke at 8:42. Opened to choke at 9:42 (1") - air. Closed tool for 182 minute closed in pressure period.							
TEMPERATURE				Gauge No. 1768		Gauge No. 295		Gauge No. 3431		TIME	
Depth: 2215 Ft.				Depth: 2482 Ft.		Depth: 2487 Ft.					
Est. C 100 ° F.				12 Hour Clock		24 Hour Clock		12 Hour Clock		Tool A.M.	
Blanked Off NO				Blanked Off yes		Blanked Off yes				Opened 8:22 P.M.	
Actual ° F.				Pressures		Pressures		Pressures		By-pass 9:52 P.M.	
				Field Office		Field Office		Field Office		Reported Computed	
Initial Hydrostatic				1067 1057		1181 1187		1196 1206		Minutes Minutes	
Flow Initial				41 55		166 191		196 208			
Flow Final				329 370		557 485		489 504		90 88	
Closed in				821 832		913 942		954 961		180 182	
Second Period											
Flow Initial											
Flow Final											
Closed in											
Third Period											
Flow Initial											
Flow Final											
Closed in											
Final Hydrostatic				1067 1055		1161 1179		1172 1203			

Legal Location Sec. 1, Twp. 4 N., Rng. 13 W. Lease Name GINN 13 31 N 47 E Well No. 1-1-3 1 Test No. 2233 - 2491' Tested Interval Field Area BEOWAME County LANDER State NEVADA Lease Owner/Company Name CHEVRON OIL COMPANY

FORMATION TEST DATA

Gauge No. 1768			Depth 2215'			Clock No. 10163			12 hour		Ticket No. 633033					
First Flow Period			First Closed In Pressure			Second Flow Period			Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	
0	.0000	55	.0000		370											
1	.0753	148	.0950*		741											
2	.1506	195	.1764		766											
3	.2259	230	.2578		780											
4	.3012	261	.3392		793											
5	.3765	292	.4206		799											
6	.4518	318	.5020		805											
7	.5271	345	.5834		809											
8	.6020	370	.6648		813											
9			.7462		815											
10			.8276		819											
11			.9090		821											
12			.9904		821											
13			1.0718		825											
14			1.1532		825											
15			1.2350		832											

Gauge No. 295			Depth 2482			Clock No. 6013			24 hour	
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	
0	.0000	191	.0000		485					
1	.0376	272	.0477*		840					
2	.0752	320	.0886		865					
3	.1128	355	.1295		882					
4	.1504	384	.1704		898					
5	.1880	415	.2113		907					
6	.2256	442	.2522		915					
7	.2632	465	.2931		917					
8	.3010	485	.3340		923					
9			.3749		929					
10			.4158		932					
11			.4567		934					
12			.4976		938					
13			.5385		942					
14			.5794		925					
15			.6200		942					

Reading Interval 11 12 Minutes

REMARKS: *First interval is equal to 14 minutes.

Gauge No. 3431			Depth 2487'			Clock No. 10162			12 hour			Ticket No. 633033			
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.0000	208	.0000		504										
1	.0746	289	.0944*		861										
2	.1492	337	.1753		883										
3	.2238	369	.2562		900										
4	.2984	401	.3371		917										
5	.3730	430	.4180		927										
6	.4476	457	.4989		934										
7	.5222	479	.5798		934										
8	.5970	504	.6607		941										
9			.7416		946										
10			.8225		949										
11			.9034		954										
12			.9843		956										
13			1.0652		958										
14			1.1461		946										
15			1.2270		961										

Gauge No.			Depth			Clock No.			hour						
0															
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

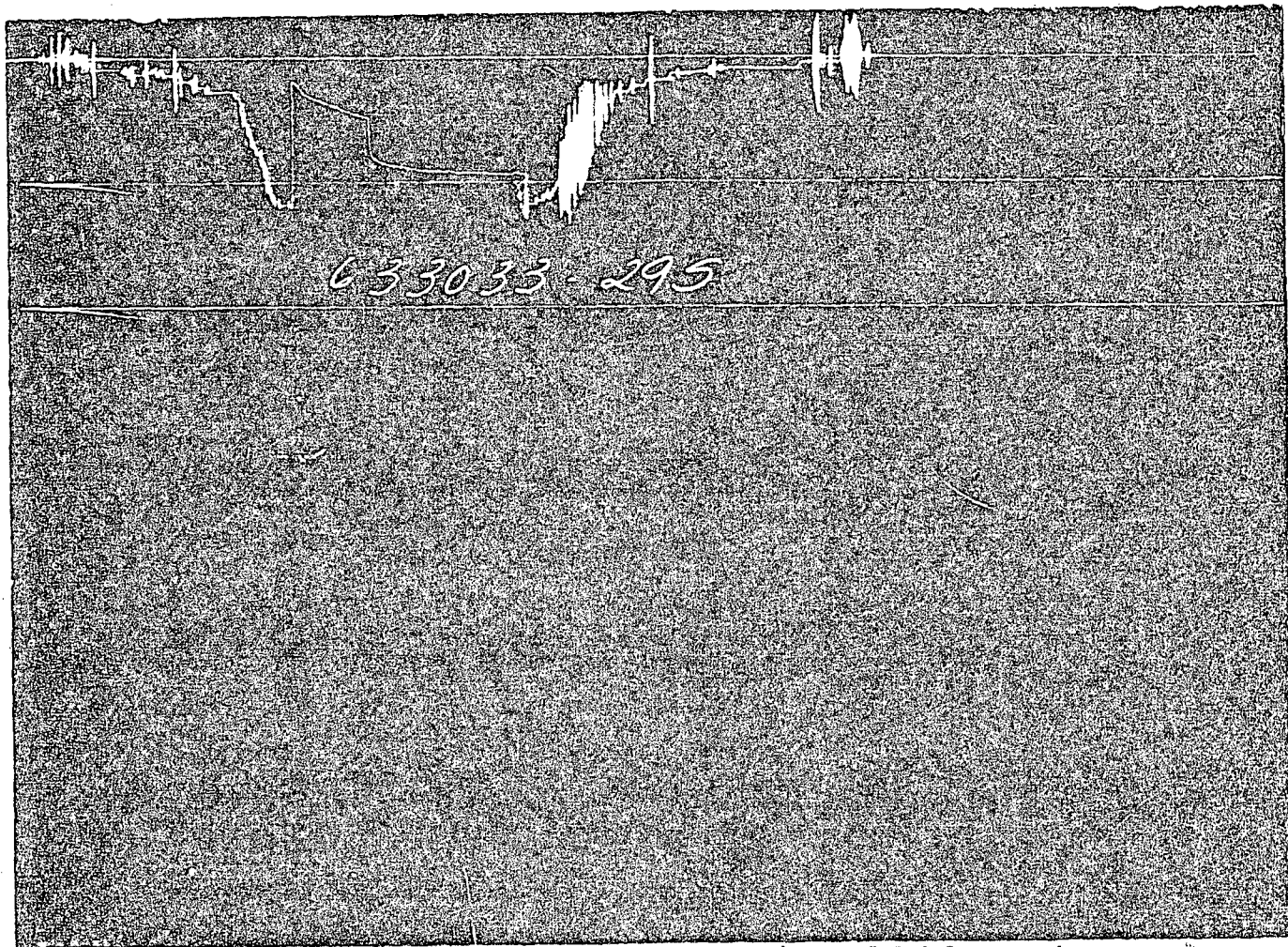
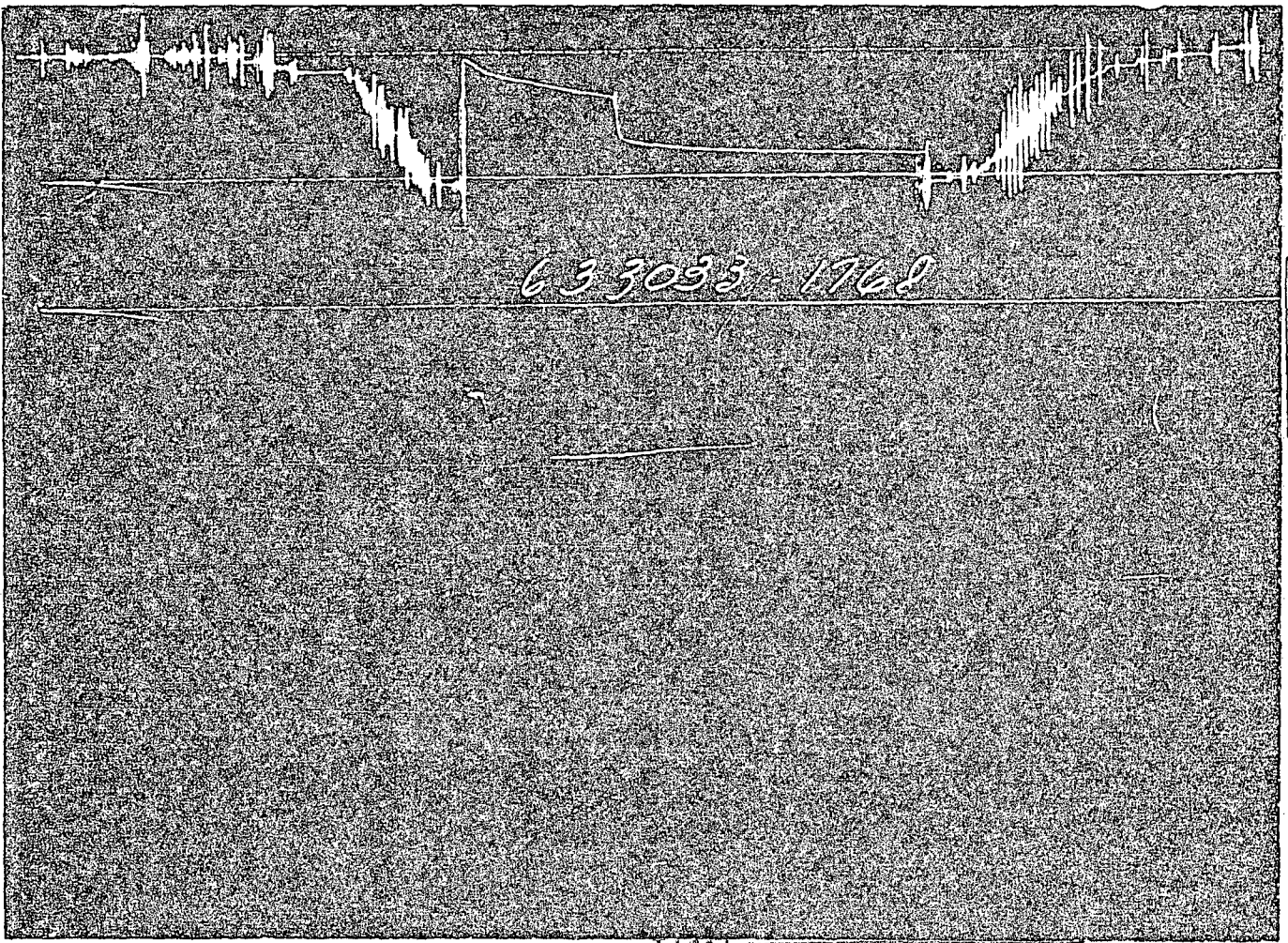
Reading Interval 11 12 Minutes

REMARKS: *First interval is equal to 14 minutes.

20



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	4.50"	3.82"	1'	
Water Cushion Valve				
Drill Pipe	4.50"	3.826"	1912'	
Drill Collars	7.25"	2.75"	285'	
Handling Sub & Choke Assembly	5.87"	3/8"	55.93"	
Dual CIP Valve	5.03"	.87"	58.48"	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	60.21"	2210'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	49.63"	2215'
Hydraulic Jar	5.03"	1.75"	60"	
VR Safety Joint	5"	1"	33.40"	
Pressure Equalizing Crossover				
Packer Assembly	11"	1.68"	70.20"	2227'
Distributor				
Packer Assembly	11"	1.68"	70.20"	2233'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint	5"	2.87"	48'	
Side Wall Anchor				
Flush jt. anchor	5.75"		58'	
Drill Collars	7.25"	2.75"	188'	
Flush Joint Anchor				
Blanked-Off B.T. Running Case	5.75"	2.44"	60"	2482'
			48.70"	2487'
Total Depth				2491'



Each Horizontal Line Equal to 1000 p.s.i.



633033-3431

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h ₁)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h ₁)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{or}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

Formation Testing Service Report

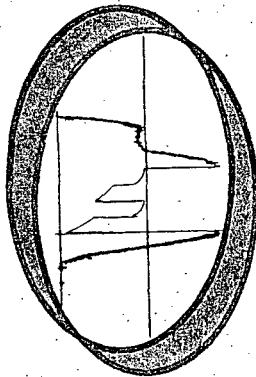
GINN
Lease Name

1-13
Well No.

2
Test No.

8351' - 8426'
Tested Interval

CHEVRON OIL COMPANY
Lease Owner/Company Name



HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

FLUID SAMPLE DATA				Date: 4-2-74		Ticket Number: 633064		
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job: OPEN HOLE Halliburton District: RIO VISTA Tester: MR. MARKER Witness: MR. DAVIS Drilling Contractor: MONTGOMERY DRILLING COMPANY BC S		Legal Location: Sec. - Twp. - Rng. 13 - 31 - 47 Well No.: 1-13 Test No.: 2		
RESISTIVITY _____ CHLORIDE CONTENT _____ Recovery Water _____ @ _____ °F. _____ ppm Recovery Mud _____ @ _____ °F. _____ ppm Recovery Mud Filtrate _____ @ _____ °F. _____ ppm Mud Pit Sample _____ @ _____ °F. _____ ppm Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm Mud Weight 67#/cu. ft. vis 55 cp				EQUIPMENT & HOLE DATA				
				Formation Tested: Wildcat Elevation _____ Ft. Net Productive Interval: 8357' - 8426' Ft. All Depths Measured From: Kelly Bushing Total Depth: 8426' Ft. Main Hole/Casing Size: 12.25" Drill Collar Length: 190' I.D. 2.75" Drill Pipe Length: 8126' I.D. 4.214" Packer Depth(s): 8351' - 8357' Ft. Depth Tester Valve: 8331' Ft.				
Cushion		TYPE	AMOUNT	Depth Back Pres. Valve	Surface Choke	Bottom Choke		
					3/4" ADJ.	1/2"		
Recovered	1530	Feet of	Rat hole mud					
Recovered	3000	Feet of	Fresh water					
Recovered		Feet of						
Recovered		Feet of						
Recovered		Feet of						
Remarks: Set tools on bottom 50' high. Put 40,000# on the packers and hydrospring opened. At this time weight dropped. Slid packer 45', but did not lose seat. Opened tester @ 7:55 AM for 99 minute flow with a weak bubble blow. Closed tool at 9:32. At 11:35 tried to pull loose. 11:35 to 12:40, jarred to 225,000. String weight was 90,000#. Filled pipe and jarred to 315,000. Tools came loose and pulled loose. Both outside recorders plugged from sliding into fill....								
TEMPERATURE		Gauge No. 1768	Gauge No. 3380	Gauge No. 295	TIME			
No reading		Depth: 8336' Ft.	Depth: 8418' Ft.	Depth: 8422' Ft.	Tool A.M.			
Est. Jarred°F.		24 Hour Clock	12 Hour Clock	24 Hour Clock	Opened 7:55 P.M.			
Down...		Blanked Off NO		Blanked Off YES		Blanked Off YES		
Actual °F.		Pressures		Pressures		Pressures		
		Field	Office	Field	Office	Field	Office	
Initial Hydrostatic		3596	3598	3587	3611	3595	3603	
First Period	Flow Initial	-	207 Q	3110	3112	3099	3103	
	Flow Final	2534	2521	3133	3126	3099	3110	
	Closed in	3086	3100	-	3126	-	3110	
Second Period	Flow Initial	THIS IS TRAPPED PRESSURE... NOT FLOW...						
	Flow Final							
	Closed in							
Third Period	Flow Initial							
	Flow Final							
	Closed in							
Final Hydrostatic		-	3394	-	3356	-	3390	
		Q = Questionable						

Legal Location: Sec. - Twp. - Rng. 13 - 31 - 47
 Well No.: 1-13
 Test No.: 2
 Field Area: BEOWAME
 County: EUREKA
 State: NEVADA
 Meo. From Tester Valve:

GINN
 Lease Name: 8351' - 8426'
 CHEVRON OIL COMPANY
 Lease Owner/Company Name:

Gauge No. 1768			Depth 8336'			Clock No. 11550			24 hour		Ticket No. 633064				
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.0000	207 Q	.0000		2521										
1	.0366	1016 Q	.4050		3100										
2	.0731	1362 Q													
3	.1097	1524													
4	.1462	1746													
5	.1828	1945													
6	.2193	2117													
7	.2559	2282													
8	.2924	2421													
9	.3290	2521													
10															
11															
12															
13															
14															
15															

Gauge No. 3380			Depth 8418'			Clock No. 3466			12 hour	
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.0000	3112	.0000		3126					
1	.6460	3126	.8200		3126					
2										
3										
4	TRAPPED PRESSURE....NOT FLOW.									
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

Reading Interval 11 Minutes

REMARKS: Q = Questionable

Gauge No. 295 Depth 8422' Clock No. 9990 X 24 hour Ticket No. 633064

First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.0000	3103	.0000		3110										
1	.3290	3110	.4050		3110										
2															
3															
4	TRAPPED PRESSURE...NOT FLOW....														
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Gauge No. Depth Clock No. hour

0															
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Reading Interval

Minutes

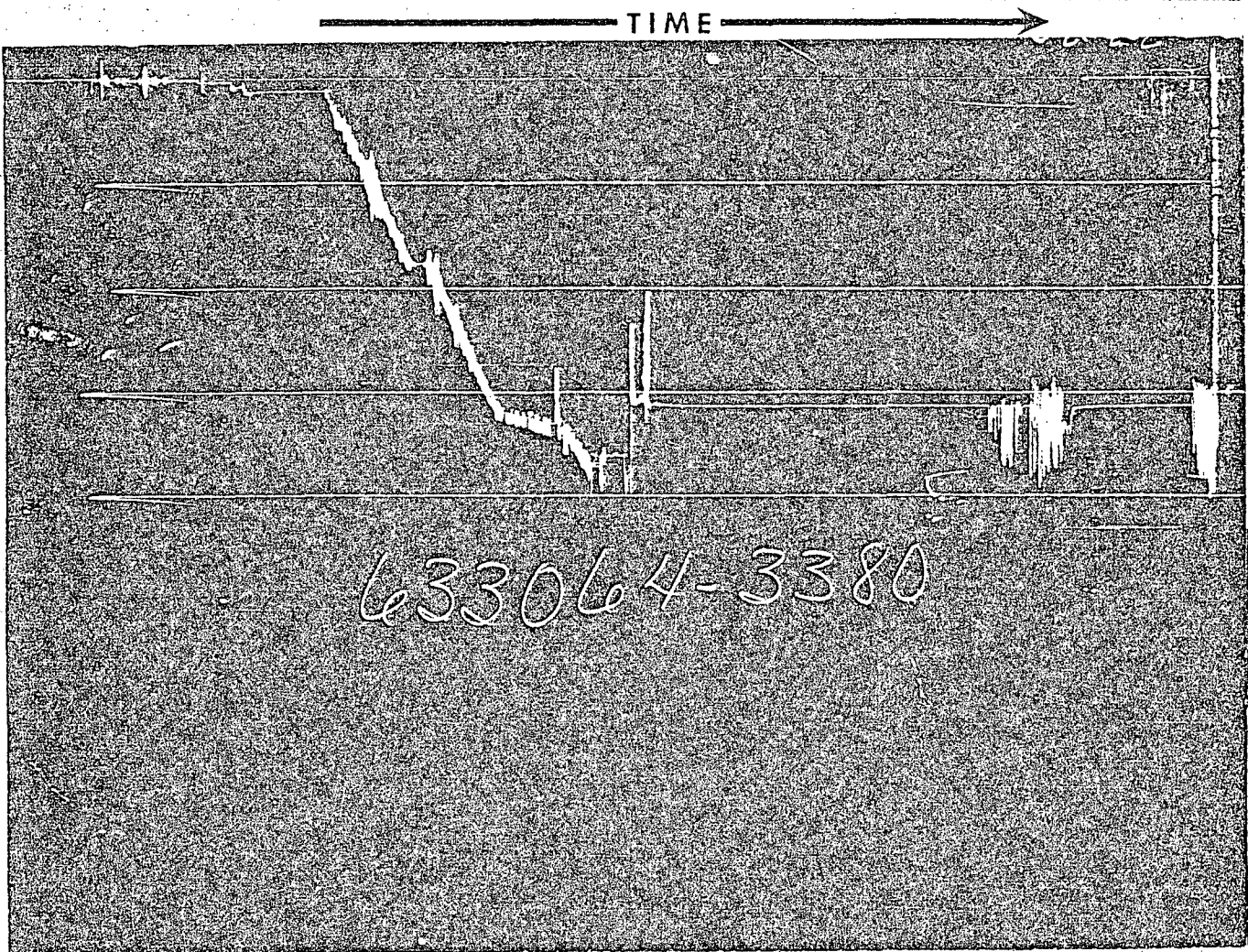
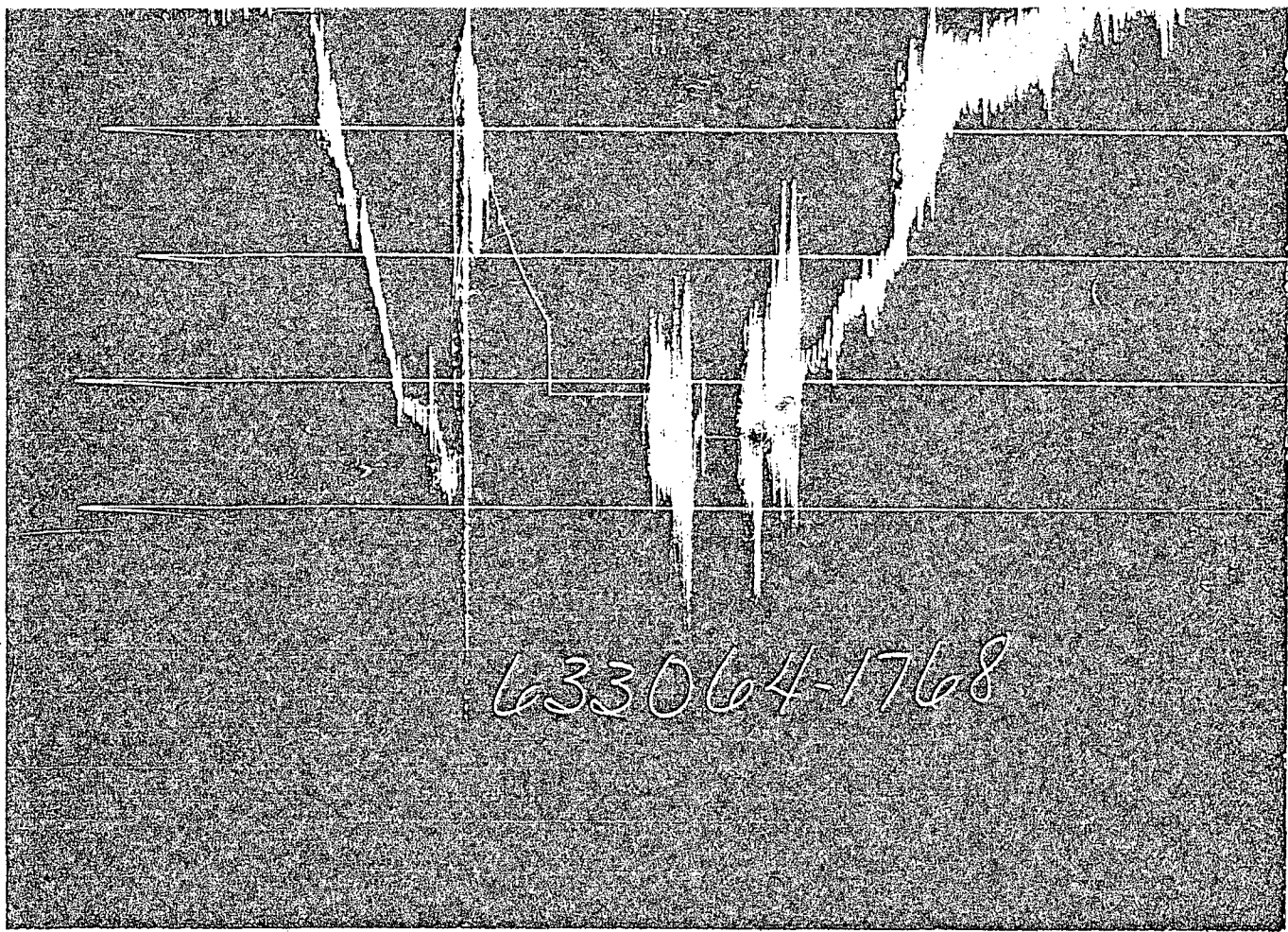
REMARKS:



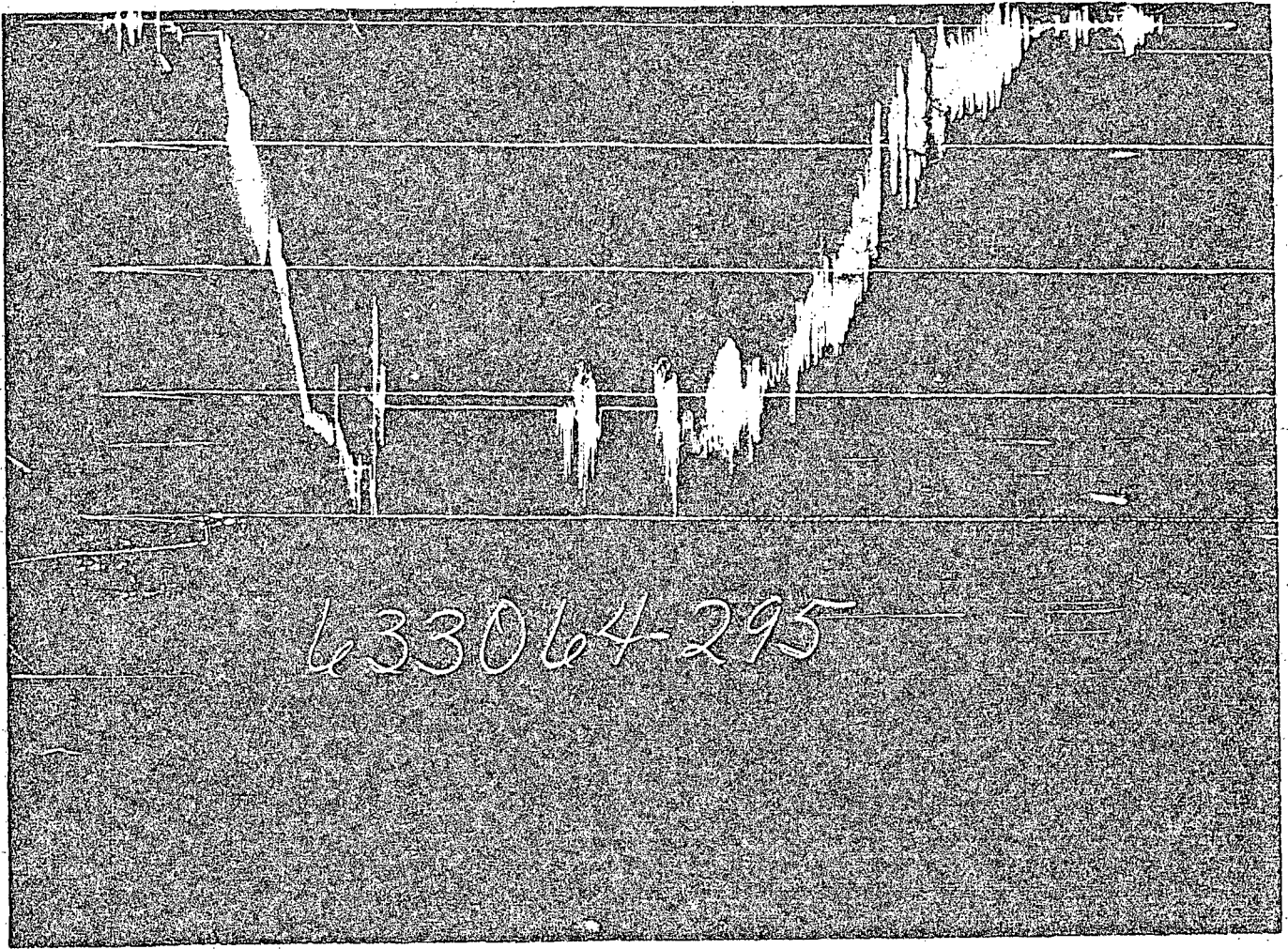
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	5"	3.75"	1'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe	5"	4.214"	8126'	
Drill Collars	7.75"	2.75"	190'	
Handling Sub & Choke Assembly	4.50"	1/2"	6'	
Dual CIP Valve	5"	.87"	5'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	8331'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.75"	6'	8336'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	11"	1.53"	7'	8351'
Distributor				
Packer Assembly	11"	1.53"	7'	8357'
Flush Joint Anchor	5.75"	4.75"	63'	
Pressure Equalizing Tube				8418'
Blanked-Off B.T. Running Case (2)	5.75"	2.75"	5'	8422'
Drill Collars				
Anchor Pipe Safety Joint	5"	1.53"	5'	
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				
Total Depth				8426'

2

Sar
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First
Second
Third



Each Horizontal Line Equal to 1000 p.s.i.



633064-295

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h)	Feet
D.R.	= Damage Ratio	—
E_l	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{or}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

Rossi 21-19

GINN 1-13

ROS 230	Grams	GINN 1-13	Grams	Notes
✓ ✓ 230'	7.5 grams	✓ ✓ 470'	5.0 grams	
✓ ✓ 373'	1.5 "	✓ ✓ 560'	5.0 "	
✓ ✓ 520'	4.7 "	✓ ✓ 770'	3.0 "	✓ ✓ 776.0
✓ ✓ 662'	5.0 "	✓ ✓ 860'	3.0 "	✓ ✓ 8060
✓ ✓ 805'	5.0 "	✓ ✓ 1040'	3.0 "	✓ ✓ 8450
✓ ✓ 925'	5.0 "	✓ ✓ 1160'	3.0 "	✓ 8640 sample sparse no t.s.
✓ ✓ 1075'	5.0 "	✓ ✓ 1220'	3.0 "	✓ ✓ 8880
✓ ✓ 1195'	5.0 "	✓ ✓ 1310'	3.0 "	✓ ✓ 9320
✓ ✓ 1315'	5.0 "	✓ ✓ 1370'	3.0 "	✓ ✓ 9500
✓ ✓ 1405'	5.0 "	✓ ✓ 1520'	3.0 "	
✓ ✓ 1590'	5.0 "	✓ ✓ 1820'	3.0 "	8 ✓+ 11%
✓ ✓ 1939'	5.0 "	✓ ✓ 2090'	3.0 "	37 ✓ 52%
✓ ✓ 2244'	3.1 "	✓+ ✓ 2240'	3.0 "	19 ✓- 27%
✓ ✓ 2366'	5.0 "	✓ ✓ 2300'	3.0 "	7 - 10%
✓ ✓ 2510'	5.0 "	✓ ✓ 2600'	3.0 "	
✓+ ✓ 2746'	5.0 "	✓+ ✓ 2900'	3.0 "	
✓ ✓ 3018'	5.0 "	✓ ✓ 3080'	3.0 "	
✓ ✓ 3174'	5.0 "	✓ ✓ 3350'	3.0 "	
✓+ ✓ 3279'	5.0 "	✓ ✓ 3590'	3.0 "	
✓ ✓ 3773'	5.0 "	✓ ✓ 3950'	2.0 "	
✓ ✓ 3960'	5.0 "	✓ ✓ 4280'	2.0 "	
✓ ✓ 4190'	5.0 "	✓ ✓ 4550'	2.0 "	
✓ ✓ 4335'	5.0 "	✓ ✓ 4700'	2.0 "	
✓ ✓ 4433'	5.0 "	✓+ ✓ 4970'	2.0 "	
✓ ✓ 4734'	5.0 "	✓ ✓ 5120'	2.0 "	
✓ ✓ 5080'	5.0 "	✓ ✓ 5330'	2.0 "	
✓ ✓ 5361'	5.0 "	✓ ✓ 5450'	2.0 "	
✓ ✓ 5635'	5.0 "	✓ ✓ 5660'	2.0 "	
		✓ ✓ 5810'	2.0 "	
		✓+ ✓ 6080'	2.0 "	
		✓ ✓ 6170'	2.0 "	
		✓ ✓ 6350'	2.0 "	
		✓ ✓ 6680'	2.0 "	
		✓ ✓ 6980'	2.0 "	
		✓ ✓ 7130'	2.0 "	
		✓ ✓ 7340'	2.0 "	

28

28

36

64 total