

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 11-20-75	
Company Amerada Hess Corporation				Connection Northern Natural Gas Co.		
Pool Blinebry (Gas)				Formation Blinebry (Gas)		
Completion Date 4-14-75		Total Depth 6470		Plug Back TD 6384		Elevation 3402
Farm or Lease Name E.W. Walden						
Csg. Size 5 1/2	Wt. 15.5	d 4.950	Set At 6470	Perforations: From 5483 To 5605		Well No. 2
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 6204	Perforations: From NA To -		Unit Sec. Twp. Rge. K 15 22S- 37E
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Gas-Gas Dual				Packer Set At 6204		County Lea
Producing Thru Annulus		Reservoir Temp. °F 104 @ 5500		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2
State New Mexico						
L 5544	H 5544	Gg .694	% CO ₂ 0	% N ₂ 1.94	% H ₂ S 0	Prover -
Meter Run 4						Taps Pipe

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI									499		72 hrs.
1.	4.026 x 1.000			189	0.5	46	Packer	60	471	60	1 hr.
2.	4.026 x 1.000			191	1.4	49	"	"	415	"	1 hr.
3.	4.026 x 1.000			197	1.8	54	"	"	361	"	1 hr.
4.	4.026 x 1.000			198	2.2	60	"	"	269	"	1 hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	4.939	10.00	202.2	1.014	1.200	1.024	62
2	4.939	16.91	204.2	1.011	1.200	1.024	104
3	4.939	19.45	210.2	1.006	1.200	1.024	119
4	4.939	21.56	211.2	1.000	1.200	1.024	131
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>No liquids produced</u> Mcf/bbl.
1.	.785	520	1.42	.904	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.	.693	520	1.42	.916	Specific Gravity Separator Gas <u>.694</u> X X X X X X X X
3.	.605	520	1.42	.925	Specific Gravity Flowing Fluid <u>.694</u> X X X X X
4.	.456	520	1.42	.944	Critical Pressure <u>666</u> P.S.I.A. <u>666</u> P.S.I.A.
5.					Critical Temperature <u>382</u> R <u>382</u> R

$P_c = 512.2$ $P_c^2 = 262.3$				
NO.	P_i^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	234.4		234.4	27.9
2	183.4		183.4	78.9
3	140.0		140.0	122.3
4	79.64		79.64	182.7
5				

$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.436$

$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.436$

$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 188$

Absolute Open Flow <u>188</u> Mcfd @ 15.025	Angle of Slope θ <u>45°</u>	Slope, n <u>1.000</u>
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Remarks: Used n=1 and highest flow rate since slope was less than .500

Approved By Commission:	Conducted By:	Calculated By: Grant B. Miller	Checked By:
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Amerada Hess Corporation LEASE E.W. Walden Section 15 Township 22 S Range 37 E WELL NO. 2 DATE 11-20-75

LOCATION: Unit K L 5544 H 5544 L/H 1.0000 G 0.694 % CO₂ 0 % N₂ 1.94 % H₂S 0

d 4.950; 2.375 F_r .0032907 GH 3848 P_{cr} 666 T_{cr} 382
(1st Rate) (2nd Rate) (3rd Rate) (4th Rate) TABLE IX & X

LINE	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
1 Q _m	.062	.062	.104	.104	.119	.119	.131	.131		
2 T _w (W.H. °R)	.520	.520	.520	.520	.520	.520	.520	.520		
3 T _s (B.H. °R)	.564	.564	.564	.564	.564	.564	.564	.564		
4 T = ($\frac{1}{2} T_w + \frac{1}{2} T_s$)	.542	.542	.542	.542	.542	.542	.542	.542		
5 Z (Est.)	.895	.904	.895	.916	.924	.925	.937	.944		
6 T _Z	.485.1	.490.0	.485.1	.496.5	.500.8	.501.4	.507.9	.511.6		
7 GH/T _Z	7.932	7.853	7.932	7.750	7.684	7.675	7.576	7.522		
8 e ^S (Table XIV)	1.346	1.342	1.346	1.337	1.334	1.334	1.329	1.326		
9 1-e ^S (Table XIV)	.257	.255	.257	.252	.250	.250	.248	.246		
10 P _t	.484.20	.484.20	.428.2	.428.2	.374.2	.374.2	.282.2	.282.2		
11 P _t ² /1000	.234.4	.234.4	.183.4	.183.4	.140.0	.140.0	.79.64	.79.64		
12 F _r (Table XV)	.0032907	.0032907	.0032907	.0032907	.0032907	.0032907	.0032907	.0032907		
13 F _c = F _r T _Z	1.596	1.612	1.596	1.634	1.648	1.650	1.671	1.684		
14 F _c Q _m	.0990	.0999	.1660	.1699	.1961	.1964	.2189	.2206		
15 L/H (F _c Q _m) ²	.0098	.0100	.0276	.0289	.0385	.0386	.0479	.0487		
16 F _w = L/H (F _c Q _m) ² (1-e ^S)	.0025	.0026	.0071	.0073	.0096	.0097	.0119	.0120		
17 P _w ² = P _t ² + F _w	234.403	234.403	183.407	183.407	140.010	140.010	79.652	79.652		
18 P _s ² = e ^S P _w ²	315.506	314.569	246.866	245.215	186.773	186.773	105.858	105.619		
19 P _s	561.70	560.86	496.86	495.19	432.17	432.17	325.36	324.99		
20 P = ($\frac{P_t + P_s}{2}$)	522.95	522.53	462.53	461.70	403.19	403.19	303.78	303.60		
21 P _r = (P/P _{cr})	.785	.785	.694	.693	.605	.605	.456	.456		
22 T _r = (T/T _{cr})	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42		
23 Z (Table XI)	.904	.904	.916	.916	.925	.925	.944	.944		

Company

Amerada Hess Cor

Well

E.W. Walden No. (Blinbry)

Location

K, 15 - 22S - 37E

County

Lea

Date

11 - 20 - 75

