

El Paso Natural Gas Company

El Paso, Texas

November 5, 1957

DIRECT REPLY TO:
P. O. BOX 997
FARMINGTON, NEW MEXICO

Mr. A. L. Porter
Secretary and Director
Oil Conservation Commission
Box 871
Santa Fe, New Mexico



Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and the South Blanco Pictured Cliffs Pool Extension. The El Paso Natural Gas Company Florence No. 3-C (PM) is located 1450 feet from the South Line and 1750 feet from the West line of Section 19, Township 28 North, Range 8 West, N.M.P.M., San Juan County, New Mexico.

This well has been completed in the Point Lookout and Lower Menefee sections of the Mesa Verde formation and in the Pictured Cliffs formation. Completion has been accomplished in the following manner:

1. 10 3/4" surface casing set at 174 feet with 200 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 2290 feet with 250 sacks of cement. Top of the cement is at 1235 feet, which is above the top of the Pictured Cliffs formation at 2103 feet.
3. 5 1/2" liner set from 2211 feet to 4600 feet with 300 sacks of cement. The top of the liner was squeezed with 100 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout and Lower Menefee sections were perforated in seven intervals and fractured with water and sand.
6. The Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
7. All perforations were cleaned after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 2410 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1/4" Grade "B" line pipe was with the tubing perforations set opposite the Pictured Cliffs perforations, as a siphon string. The Point Lookout gas was produced through the 2" EUE tubing and the Pictured Cliffs through the casing.

COPY

100-33283

2000

1. *Journal of the American Medical Association*, 1997; 277: 1033-1038.



the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 250 million to 450 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

1. *Journal of the American Medical Association*, 1997; 278: 1025-1030.

14. The Commission has also been informed that the Government of India has been asked to take steps to ensure that the rights of the people of the State of Jammu and Kashmir are protected and that the people of the State are not discriminated against on the basis of their religion or caste.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

1. The first step is to identify the problem. This involves understanding the current situation and the goals that need to be achieved.

• 2011: 0.5

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1. *For the purpose of this section, the term "person" shall include any individual, partnership, corporation, association, trust, or other legal entity.*
 2. *For the purpose of this section, the term "person" shall include any individual, partnership, corporation, association, trust, or other legal entity.*

IN ABOVE CASE, THE CODE NAME WAS FIRST LISTED IN THE FBI FILE ON 11/1/54.

[illegible]

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthaler and Sponholz (1980).

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

• 1995: *Journal of the American Academy of Child and Adolescent Psychiatry*, 34: 1031-1040.

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D). The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D). The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D).

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

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8. A Garrett circulating sleeve was installed in the 2" EUE tubing string just below the Pictured Cliffs perforations. This will enable the bottom hole pressure tests to be taken at a future date if so required.
9. Initial potential tests have been run and commercial production has been found in both zones. A packer leakage test has been run and witnessed by a member of the Aztec office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

Administrative approval is requested for the dual completion to allow production from both known producing formations, eliminating the high initial cost of drilling two separate wells.

The offset operator to the drilling block has been notified of intentions to dually complete by registered letter and has returned a letter of approval of said intentions. Enclosed is a copy of the offset operator's letter of approval. Also enclosed are:

- (a) Two copies of the schematic diagram of the mechanical installations.
- (b) Two copies of the affidavit from the packer setting company stating that the packer used was set at the depth shown.
- (c) Two copies of the packer leakage test as observed by a member of the Oil Conservation Commission.
- (d) Two copies of the initial potential test showing commercial production from the two formations.
- (e) Two plats showing the location of the well and offset operator.

It is intended to dedicate the S/2 of Section 19, Township 28 North, Range 8 West, to the Mesa Verde formation and the SW/4 of Section 19, Township 28 North, Range 8 West to the Pictured Cliffs formations.

Any further information required will be furnished upon your request. Thank you for your consideration in this matter.

Yours very truly,

ORIGINAL SIGNED E. S. OBERLY

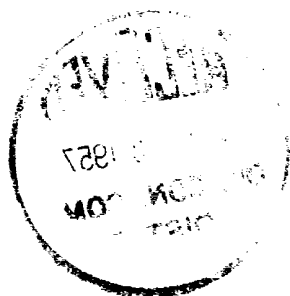
E. S. Oberly
Division Petroleum Engineer

ESO/dgb
Encl.

cc: Emery Arnold
Sam Smith
Phil McGrath



Y 19389 2 3 419012 JAN 9 80



PAN AMERICAN PETROLEUM CORPORATION

Roswell, New Mexico
February 27, 1957

File: D-52-986.510

Subject: Waiver of Objection
Final Completion Permit
Pictured Cliffs and
Mesaverde Formations
S/2 Section 19, T-28-N, R-9-E,
San Juan County, New Mexico

New Mexico Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Gentlemen:

The undersigned, being an authorized representative of the offset operator, has been duly informed by El Paso Natural Gas Company of their intention to finally complete their Florence "C" Well No. 3 in the Pictured Cliffs and Mesaverde Formations. Pan American Petroleum Corporation hereby waives all objections to the granting of a permit for this purpose.

This well is to be located in the S/2 of Section 19, T-28-N, R-9-E, San Juan County, New Mexico.

Yours very truly,

PAN AMERICAN PETROLEUM CORPORATION

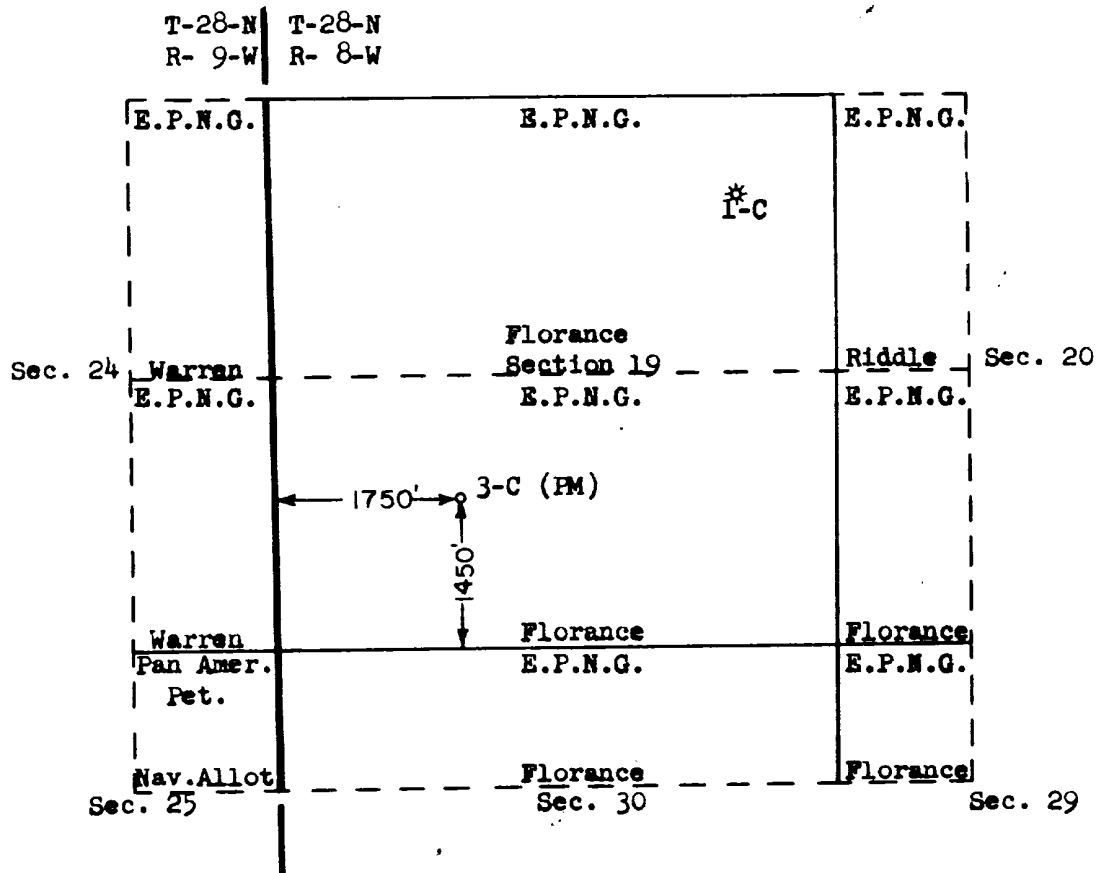
C. L. Kelley
District Superintendent

ml/me

cc: El Paso Natural Gas Company
P. O. Box 977
Farmington, New Mexico

COPY

PLAT SHOWING LOCATION OF DUALY COMPLETED
EL PASO NATURAL GAS COMPANY FLORANCE NO. 3-C (PM)
AND OFFSET ACREAGE



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE

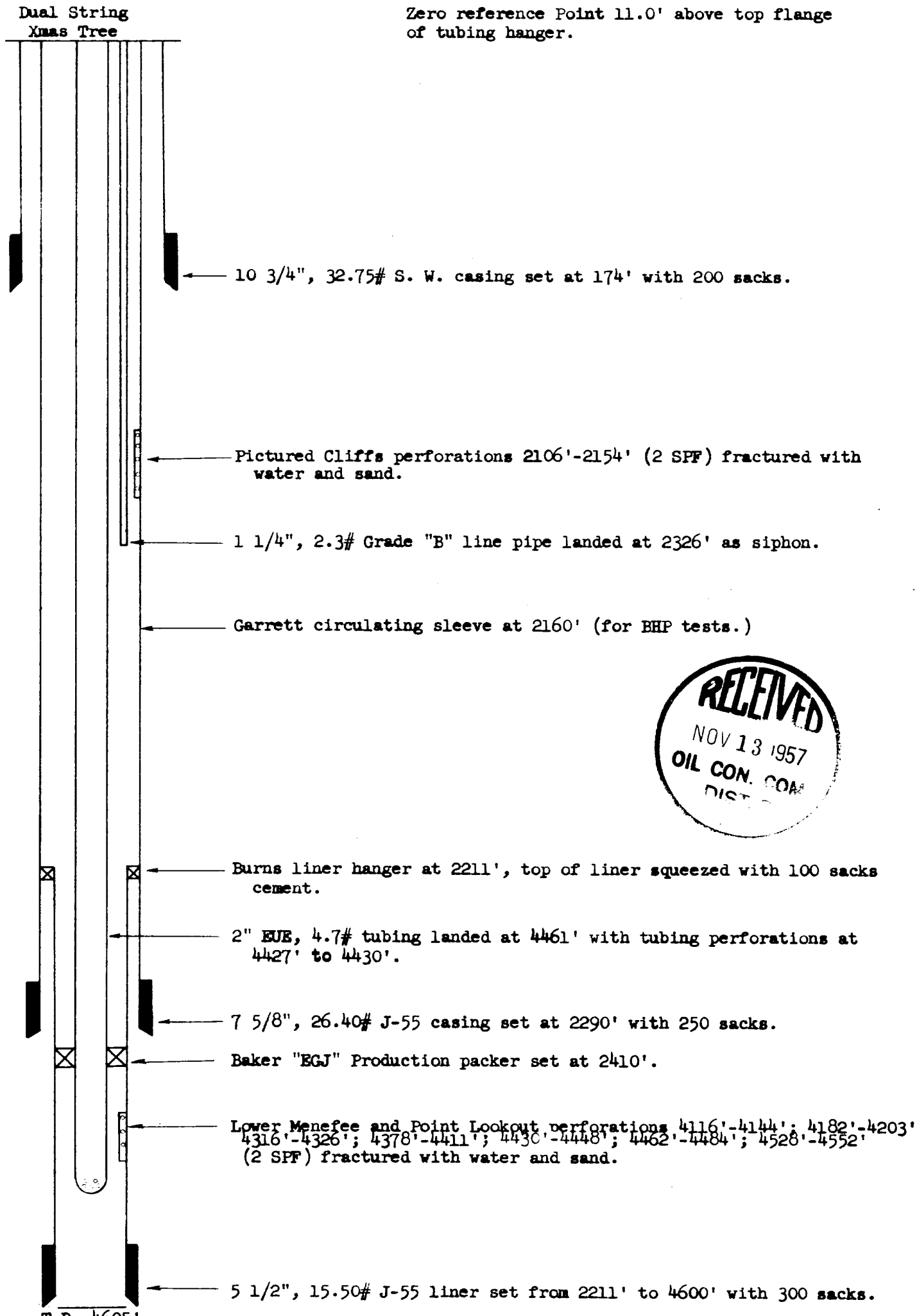
DATE

No.

DRAWN BY

CHECKED BY

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Florance No. 3-C (PM)
(SW Section 19, T-28-N, R-8-W)



STATE OF NEW MEXICO
COUNTY OF SAN JUAN

}

I, Mack M. Mahaffey, being first duly sworn upon my oath depose
and say as follows:

I am an employee of Baker Oil Tools, Inc., and that on October 7,
1957, I was called to the location of the El Paso Natural Gas Company
Florence No. 3-C (FM) Well located in the NE/4 SW/4 of Section 19, Township
28 North, Range 8 West, N.M.P.M., for advisory service in connection with
installation of a production packer. In my presence, a Baker Model "BJJ"
Production Packer was set in this well at 2410 feet in accordance with the
usual practices and customs of the industry.

Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan
County, New Mexico, the 8 day of Nov, 1957.

Donald D. MacLachlan
Notary Public in and for San Juan County,
New Mexico

My commission expires February 24, 1960.

STATE OF NEW MEXICO

COUNTY OF SAN JUAN

I, Frank H. Henshaw, being first duly sworn, depose

and say as follows:

I am an employee of Carter Oil Tools, Inc., and was on duty

1937. I was called to the location of the H. H. Carter Oil Company
Well No. 3-2 (15) well located in the NE 1/4 of Section 19, Township

36 North, Range 1 East, T. 36 N., R. 1 E., for the purpose of conducting a

test of the well. It is my recollection that the well was

located in the NE 1/4 of Section 19, Township 36 North, Range 1 East, T. 36 N., R. 1 E., and was

located in the NE 1/4 of Section 19, Township 36 North, Range 1 East, T. 36 N., R. 1 E., and was

located in the NE 1/4 of Section 19, Township 36 North, Range 1 East, T. 36 N., R. 1 E., and was

located in the NE 1/4 of Section 19, Township 36 North, Range 1 East, T. 36 N., R. 1 E., and was

Testimony of Frank H. Henshaw, Employee of Carter Oil Tools, Inc.,
San Juan County, New Mexico

Witness my hand and seal this 15th day of February, 1937.

EL PASO NATURAL GAS COMPANY

Box 997
Farmington, N.M.

October 30, 1957

Mr. E. C. Arnold
Oil Conservation Commission
120 East Chaco
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural
Gas Company Well, Florance No. 3-C, 1450'S,
1750'W, Sec. 19-28-8, San Juan County, N.M.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 2410 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours October 16, 1957 with the following data obtained:

Pictured Cliffs SIPC 805 psig; shut-in 9 days
Pictured Cliffs SIPT 805 psig

Mesa Verde SIPT 1052 psig; shut-in 9 days

| <u>Time</u>
<u>Minutes</u> | <u>PC Flowing Pressure</u>
<u>Casing Psig</u> | <u>MV SIPT Psig</u> | <u>PC Working</u>
<u>Pressure, Psig</u> | <u>Temp ° F</u> |
|-------------------------------|--|---------------------|--|-----------------|
| 0 | Open | 1052 | | |
| 15 | 492 | 1052 | | 61 |
| 30 | 423 | 1052 | | 61 |
| 45 | 359 | 1052 | | 62 |
| 60 | 323 | 1052 | | 62 |
| 180 | 210 | 1052 | 214 tbq. | 64 |

The choke volume for the Pictured Cliffs was 2693 MCF/D with an A.O.F. of 2882 MCF/D.

The Mesa Verde zone was tested October 28, 1957 with a 3/4" choke for three hours with the following data obtained:

Pictured Cliffs SIPC 847 psig; shut-in 9 days
Pictured Cliffs SIPT 847 psig

Mesa Verde SIPT 1077 psig; shut-in 21 days

| <u>Time
Minutes</u> | <u>MV Flowing Pressure
Tubing Psig</u> | <u>PC SIPC Psig</u> | <u>MV Working
Pressure, Psig</u> | <u>Temp ° F</u> |
|-------------------------|--|---------------------|--------------------------------------|-----------------|
| 0 | Open | 847 | | |
| 15 | 542 | 849 | | 68 |
| 30 | 506 | 849 | | 69 |
| 45 | 489 | 849 | | 69 |
| 60 | 473 | 850 | | 70 |
| 180 | 408 | 850 | Calculated 774 | 72 |

The choke volume for the Mesa Verde test was 4934 MCF/D with an A.O.F. of 8565 MCF/D.

The results of the above tests indicate there is no packer leakage.

Very truly yours,

S. V. Roberts

S. V. Roberts
Gas Engineer

SVR/jla

cc: W. M. Rodgers
E. S. Oberly (6)
File

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: October 28, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
FLORANCE NO. 3-C, San Juan County, New Mexico.

Tested By: S. V. Roberts

Location Sec. 19 T. 28N R. 8W 1450'S, 1750'W

Shut-in Pressure P.C. SIPC 847 psig ; (Shut-in 9 days)
P.C. SIPT 847 psig

M.V. SIPT 1077 psig: shut-in 21 days

0.750" Choke Volume 4934 MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through tubing for 3 hours.

Calculated 3 Hour Absolute Open Flow 8565 MCF/D

Working Pressure On Calculated = 774 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac.

Total Depth 4605

Field Blanco

H₂S Sweet to lead acetate.

Final SIPC (FC) - 850 psig; packer at 2410; 1-1/4 at 2315; sleeve at 2160 (upside down)

cc: D. H. Tucker

Bill Parrish

~~W. J. H. H. H. H.~~

Dean Rittmann

~~W. J. H. H. H. H.~~

E. S. Oberly (6)

~~C. J. H. H. H. H.~~

Samuel Smith

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

~~R. J. H. H. H. H.~~

Jack Purvis

~~W. J. H. H. H. H.~~

C. C. Kennedy

E. J. Goel, Jr.

A. J. Dudenhoeffer

File

L. D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE October 28, 1957

| | | | |
|---|-----------------------------|--|---------------------------------|
| Operator
El Paso Natural Gas Company | | Lease
Florance No. 3-C | |
| Location
1450'S, 1750'W, Sec. 19-28-8 | | County
San Juan | State
New Mexico |
| Formation
Mesa Verde | | Pool
Blanco | |
| Casing: Diameter
7-5/8 | Set At: Feet
2292 | Tubing: Diameter
2" | Set At: Feet
4450 |
| Pay Zone: From
4116 | To
4552 | Total Depth:
4605 - c/o 4560 | |
| Stimulation Method
Sand Water Frac. | | Flow Through Casing | Flow Through Tubing
X |

| | | | | | |
|---|---------------------------|------------------------------------|---|----------------------------|--|
| Choke Size, Inches
0.750 | | Choke Constant: C
12.365 | | 5-1/2" liner. 2211 - 4600 | |
| Shut-In Pressure, Casing, PSIG
PC 847 | - 12 - PSIA
859 | Days Shut-In
21 | Shut-In Pressure, Tubing PSIG
NY 1077 | - 12 - PSIA
1089 | |
| Flowing Pressure: P PSIG
408 | - 12 - PSIA
420 | | Working Pressure: Pw PSIG
Calculated | - 12 - PSIA
786 | |
| Temperature: T F
72 | n
0.75 | | Fpv (From Tables)
1.049 | Gravity
.715 | |

Initial SIPC (PC) - 847 psig; final - 850 psig. 1-1/4" at 2315. Packer at 2410. Sleeve at 2160 (upside down)

CHOKE VOLUME = $Q \cdot C \cdot P_r \cdot F_r \cdot F_g \cdot F_{pv}$

$$Q = 12.365 \times 420 \times .9887 \times .9161 \times 1.049 = 4934 \text{ MCF/D}$$

$$\text{OPEN FLOW } Aof \cdot Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$Aof \left(\frac{1,185,921}{508,125} \right)^n = 2.0374^{.75} \times 4934 = 1.736 \times 4934$$

$$Aof = 8565 \text{ MCF/D}$$

TESTED BY S. V. Roberts

WITNESSED BY _____

cc: E. S. Oberly (6)


L. D. Galloway

EL PASO NATURAL GAS COMPANY
GAS WELL TESTTo: Mr. E. E. Alsup
From: Gas Engineering DepartmentDate: October 16, 1957
Place: Farmington, New MexicoDUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
FLORANCE NO. 3-C, San Juan County, New Mexico.

Tested By: S. V. Roberts. Checked by: Bob Davis

Location Sec. 19 T. 28N R. 8W 1450'S, 1750'W

Shut-In Pressure P.C. SIPC 805 psig ; (Shut-in 9 days)
P.C. SIPT 805 psig
M.V. SIPT 1052 psig0.750" Choke Volume 2693 MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through casing for 3 hours.

Calculated 3 Hour Absolute Open Flow 2882 MCF/D

Working Pressure On tubing = 214 Psig

Producing Formation Pictured Cliffs

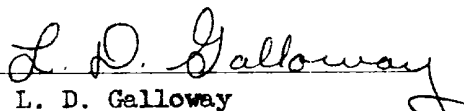
Stimulation Method Sand Water Frac.

Total Depth 4605

Field Undesignated

H2S Sweet to lead acetate.

Final SIPT (MV) - 1052 psig

cc: D. H. Tucker
~~R. W. W. +~~
~~W. E. W. +~~
~~C. D. W. +~~
W. M. Rodgers
Wayne Cheek
Drilling Department
B. D. Adams
~~R. W. W. +~~
Jack Purvis
~~W. E. W. +~~
C. C. Kennedy
E. J. Coel, Jr.
A. J. Dudenhoefter
FileBill Parrish
Dean Rittmann
E. S. Oberly (6)
Samuel Smith
L. D. Galloway
by TBG

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE October 16, 1957

| | | | |
|---|-----------------------------|----------------------------------|-----------------------------|
| Operator
El Paso Natural Gas | | Lease
Florance No. 3-C | |
| Location
1450'S, 1750'W, Sec. 19-28-8 | | County
San Juan | State
New Mexico |
| Formation
Pictured Cliffs | | Pool
Undesignated | |
| Casing: Diameter
7-5/8 | Set At: Feet
2292 | Tubing: Diameter
1-1/4 | Set At: Feet
2315 |
| Pay Zone: From
2106 | To
2154 | Total Depth:
4605 | |
| Stimulation Method
Sand Water Frac. | | Flow Through Casing
X | Flow Through Tubing |

| | | | | | |
|--|---------------------------|------------------------------------|---|------------------------------------|--|
| Choke Size, Inches
0.750 | | Choke Constant: C
12.365 | | 5-1/2" liner -- 2211 - 4600 | |
| Shut-In Pressure, Casing, PSIG
805 | - 12 = PSIA
817 | Days Shut-In
9 | Shut-In Pressure, Tubing PSIG
805 | - 12 = PSIA
817 | |
| Flowing Pressure: P PSIG
210 | - 12 = PSIA
222 | | Working Pressure: Pw PSIG
214 | - 12 = PSIA
226 | |
| Temperature: T °F
64 | n =
0.85 | | Fpv (From Tables)
1.021 | Gravity
0.646 | |

Initial SIPT (MV) 1052; Final - 1052 psig. 2" at 4450. Packer at 2410 - sleeve at 2160

$$\text{CHOKE VOLUME} = Q = C \times P_r \times F_r \times F_g \times F_{pv}$$

$$Q = 12.365 \times 222 \times .9962 \times .9645 \times 1.021 = \underline{2693} \text{ MCF/D}$$

$$\text{OPEN FLOW } Aof = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$Aof = \left(\frac{667,489}{616,413} \right)^n \times 1.0828^{.85} \times 2693 = 1.070 \times 2693$$

$$Aof = \underline{2882} \text{ MCF/D}$$

TESTED BY S. V. Roberts

WITNESSED BY _____

cc: E. S. Oberly (6)

L. D. Galloway
L. D. Galloway by T B G