

ARCO EC State No. 1, B-36-175-255

Calculation of Remaining Reserves for Allocation of Commingled Prod.

Eagle Creek Permian Penn. - Pfs 6534-6692. $P_c = 668$, $T_c = 400$, BHT = 581°R

7-16-79 Orig BHP = 2172 psig @ 6664' KB. $P_{R_0} = 3.271$, $T_{R_0} = 1.453$, $Z_0 = 743$ $\frac{P_0}{Z_0} = 2941.0$

8-21-79 Pres. BHP = 2075 psig @ 6664' KB $P_{R_1} = 3.126$, $Z_1 = 744$ $\frac{P_1}{Z_1} = 2806.7$

Cum. Prod. from pfs 6534-6692 = $N_p = 6893$ mcf + 35 bbls cond.

Abandonment BHP = 10% Orig BHP = 218.5 psia $P_{R_A} = 0.327$, $Z_A = 962$ $\frac{P_A}{Z_A} = 227.1$

Remaining Reserves = $\frac{P_{1/2} - P_{1/2A}}{P_{1/2} - P_{1/2A}} NP = \frac{2806.7 - 227.1}{2941.0 - 2806.7} (6893) = 132,400$ mcf gas

$$\frac{35}{2} \times \frac{132,400}{6893} = 336 \text{ b. cond.}$$

Eagle Creek Strawn - Pfs 7952-7978 $P_c = 680.5$ $T_c = 369.5$ BHT = 137° F

4-3-79 Orig BHP = 2222 psig @ 7956' KB. $P_{R_0} = 3.285$, $T_{R_0} = 1.615$, $Z_0 = 825$ $\frac{P_0}{Z_0} = 2709.3$

6-17-79 Pres. BHP = 2002 psig @ 7956' KB. $P_{R_1} = 2.961$, $Z_1 = 829$ $\frac{P_1}{Z_1} = 2430.9$

Cum. Prod. from pfs 7952-7978 = $N_p = 4789$ mcf + 33 bbls cond.

Abandonment Pres = 10% Orig = 223.5 psia $P_{R_A} = 0.328$, $Z_A = 975$ $\frac{P_A}{Z_A} = 229.2$

Remaining Reserves = $\frac{P_{1/2} - P_{1/2A}}{P_{1/2} - P_{1/2A}} NP = \frac{2430.9 - 229.2}{2709.3 - 2430.9} (4789) = 37,900$ mcf gas.

$$\frac{33}{2} \times \frac{37,900}{4789} = 130 \text{ b. cond.}$$

E. Eagle Creek Atoka Morrow, pfs 8338-8565 (1) $P_c = 671$ $T_c = 373$ BHT = 140° F

(1) Orig. BHP = 3129 psig @ 8344' KB; (2) 2741 psig @ 8445' KB $P_{R_0} = 4.683$ $T_{R_0} = 1.609$ $Z_{01} = 837$

11-24-78 BHP = 332.5 psig @ 8344' KB; 2/5/79, 762 psig @ 8445' KB. $P_{R_1} = 4.105$ $T_{R_1} = 1.611$ $Z_{02} = 824$

Cum. Prod. Pfs 8338-65 = 4,627,558 mcf + 16748 bbls; Pfs 8430-40 = 1230 mcf + 48 bbls.

Aband. Pres. = 222 psia. $P_{R_A} = 0.331$, $Z_A = 9735$ $\frac{P_A}{Z_A} = 220$

Remaining Reserves: (Upper) $\frac{3600 - 2280}{3750 - 3600} (4627558) = 44,400$ mcf gas.

$$\frac{16748}{4} \times \frac{44,400}{4627558} = 40 \text{ bbls cond.}$$

(Lower) $\frac{847.5 - 228.0}{3342.5 - 847.5} (1230) = 300$ mcf gas

$$\frac{4}{4} \times \frac{300}{1230} = 0 \text{ bbls cond.}$$

Suggested allocation formula for future commingled Prod is:

Eagle Creek Permian Penn:	132,400 mcf	= 62%	} gas	336 bbls	= 66%	} Cond
Eagle Creek Strawn:	37,900	= 18%		130	= 26%	
E. Eagle Creek Morrow:	44,700	= 20%		40	= 8%	

Yates Petroleum Corp
By Eddie L. Matipud 8-23-79

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$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -i \\ 0 & 1 \end{pmatrix}$

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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

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Figure 6

Days since start of study	Mean number of days per week in bed
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12
12	13
13	14
14	15

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YPC - ARCO EC State No. 1, B-36-17S-25E, Eddy County, N. Mex.
 Diagrammatic Sketch of Proposed Dual Completion and Downhole Communication

Elevation: 3453 GR = 3470 KB

Spudded: 3-20-70

Completed: 5-15-75 PF 8338-65 } Mw
 2-13-79 PF 8430-40 }
 3-28-79 PF 7952-78 Strn
 7-11-79 PF 6534-6692 Penn

Top of San Andres @ 810' KB

Base of Artesian Water Zone @

17 1/2" hole to 376
 12 3/4" 34" Csg set @ 376', cemented
 to surface w/ 250 sx.

11" hole to 1276'
 8 5/8" 24" JIS Csg set @ 1276', cemented
 to surface w/ 1150 sx.

Top of cement @ 5950' Est.

Top of Wolfcamp @ 5338'

Guiberson UNI-VI Pker on 2 7/8" Hg @ about
 6505' KB w/ Blast Joints opposite perforations

Top of Cisco @ 6550'
 PERMO PENN Completion

PF 6534-41/14 .50" PF 6546-50/8 .50"
 PF 6608-17/18 .50" PF 6681-92/22 .50"
 Tot PFS 6534-6692 w/ 8000g. 15% DS-30

Top of Strawn @ 7950'

Orig. top Cmt @ 7800', pld & Sld @ 7750' w/ 300 sx

EAGLE CREEK - STRAWN Completion
 IPF - 331 mcfpd

PF 7952-60/9 .50" 7975-78/4 .50"
 Tot 20000g. Ser 72 Acid + CO₂

Top of Atolca @ 8118'
 EAGLE CREEK Atolca Morrow

2 7/8" Sliding Sleeve open @ about 8203' KB
 Baker hole-set Packer w/ Standing
 Valve set @ 8235' KB

Top of Morrow @ 8299'

E. EAGLE CREEK Atolca Morrow Compl
 IPF - 15000 mcfpd + 142 bbls cond.

Perfs 8338-8365, 4 spf
 Natural Completion.

PF 8430-40, 4 spf
 Natural Completion.

PBTD: 8606

5 1/2" 15.5 & 17" K55 Csg set @ 8678' KB
 cemented w/ 200 sx & H. cement.
 TD: 8678' KB

