



EXHIBIT
 PERMEABILITY VS. POROSITY

Pennzoil
 J. B. Casto #120.
 Permit #1598
 Clay County, WV
 4701501598
 Injun Sandstone

(WV Tight Formation Committee)

PENNECOIL COMPANY
J. B. CASTO NO. 120 WELL
FRANNY'S CREEK FIELD
CLAY COUNTY, WEST VIRGINIA

JUNE 6, 1979
FILE NO: 3602-486
ANALYST: REINHEIMER

1598-41

SMP. NO.	DEPTH	GRN. DKS.	POROSITY GEX	PERMEABILITY		
				90°	FULL DIAMETER	VERT.
KEENER						
1	1954-55	2.77	0.6	<0.1	<0.1	<0.1
2	1955-56	2.83	2.4			
3	1956-57	2.89	5.5			<0.1
4	1957-58	2.75	6.5	<0.1	<0.1	
5	1958-59	2.69	8.5			<0.1
6	1959-60	2.69	7.2			
7	1960-61	2.70	6.5	0.2	0.1	<0.1
8	1961-62	2.71	13.6			
9	1962-63	2.75	8.8			<0.1
10	1963-64	2.69	6.2	<0.1	<0.1	
11	1964-65	2.66	7.0			<0.1
12	1965-66	2.67	6.1	1.2	1.0	
13	1966-67	2.68	4.7			0.1
14	1967-68	2.70	5.6			
15	1968-69	2.71	10.4			<0.1
16	1969-70	2.71	13.0	0.8	0.9	
17	1970-71	2.83	14.2			<0.1
18	1971-72	2.83	20.6			
19	1972-73	2.73	20.7	*	17	
20	1973-74	2.70	2.0	<0.1	<0.1	<0.1

Big Injun						
21	1974-75	2.71	20.3	*	11	
22	1975-76	2.76	21.7	*	16	
23	1976-77	2.68	20.0	8.4	8.7	5.7
24	1977-78	2.70	18.2			
25	1978-79	2.68	18.7	2.9	3.3	2.2
26	1979-80	2.68	19.1			
27	1980-81	2.69	19.1			2.7
28	1981-82	2.69	19.4	5.8	4.4	
29	1982-83	2.68	18.9			2.8
30	1983-84	2.64	19.2			
31	1984-85	2.69	18.6	3.0	3.1	1.4
32	1985-86	2.68	19.3			
33	1986-87	2.69	19.4			3.5
34	1987-88	2.69	18.8	3.3	3.4	
35	1988-89	2.72	18.8			2.2
36	1989-90	2.70	18.7			
37	1990-91	2.66	18.3	3.0	2.8	2.4
38	1991-92	2.71	17.6			
39	1992-93	2.75	16.6			0.1
40	1993-94	2.75	15.8	0.4	0.5	
41	1994-95	2.75	16.0			0.1
42	1996-97	2.79	7.5			

SQUAW						
43	2025-26	2.83	3.9			<0.1
44	2026-27	2.76	7.7	<0.1	<0.1	
45	2027-28	2.71	9.9			<0.1
46	2028-29	2.73	17.6	0.5	0.4	
47	2029-30	2.68	16.8			0.1
48	2030-31	2.70	18.2			
49	2031-32	2.70	18.2	0.8	0.8	0.3
50	2032-33	2.68	17.3			
51	2033-34	2.73	19.3			0.2
52	2034-35	2.72	19.3	1.0	1.4	
53	2035-36	2.73	20.1			1.5
54	2036-37	2.73	19.9			
55	2037-38	2.73	20.3	3.7	4.2	2.1
56	2038-39	2.63	15.4			
57	2039-40	2.73	19.2			0.4
58	2040-41	2.72	21.0	8.4	9.0	
59	2041-42	2.72	17.9			0.3
60	2042-43	2.71	16.3			