



**CORE LABORATORIES
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***A Profile Permeability Study
On Core 1
From
Well : GANGELL #1***

Australia

12 AUG 2002

Petroleum Development

Prepared for
LAKES OIL N.L.

July 2002

File: PRP-02020A

Rock Properties
Core Laboratories Australia Pty. Ltd.
Perth
Australia

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**CORE LABORATORIES
AUSTRALIA PTY LTD**

29th July, 2002

Lakes Oil NL
PO Box 300
Collins St West
MELBOURNE VIC 8007

Attention : Mr. J. Mulready

Subject : Profile Permeability
Well : Gangell #1
File : PRP-02020A

Dear Sir,

Presented herein is the final report of a profile permeability study conducted on core 1 from the above well that arrived at our Perth laboratory at the end of April 2002.

We appreciate the opportunity to present this service to you. Please contact us should you require any further information or assistance.

Yours sincerely,
Core Laboratories Australia Pty Ltd


James Brown
Senior Core Analyst

INTRODUCTION

Core Laboratories Australia Pty Ltd (Core Lab) conducted a profile permeability study on core 1 from the well Gangell #1 on behalf of Lakes Oil NL (Lakes Oil) as requested by an e-mail dated 17th July 2002. Services performed and presented in the report include:

- Profile Permeability

LABORATORY PROCEDURES

Profile Permeametry

Profile permeametry was conducted on the cut face of the two-third core section using the PDPK™300 profile permeameter. The frequency of the measurements was approximately every 3 inches. A total of 236 point measurements were made, the preliminary results of which were sent to Lakes Oil on the 22nd July. The final permeametry data is presented in tabular form on pages 1 to 5, and graphically on the Integrated Corelog. Included in this report is routine core analysis data previously run and reported in June 2002 (File: PRP-02020).

COMPANY :LAKES OIL N.L.
WELL :GANGELL #1

PROFILE PERMEAMETRY

SAMPLE POINT	DEPTH (m)	PERMEABILITY		COMMENTS
		Ka (md)	Kinf (md)	
1	1566.52	0.177	0.090	
2	1566.59	0.240	0.131	
3	1566.67	0.499	0.309	
4	1566.73	1.18	0.827	
5	1566.81	0.786	0.522	
6	1566.89	1.07	0.739	
7	1566.96	1.43	1.03	
8	1567.03	1.15	0.807	
9	1567.10	1.28	0.908	
10	1567.18	1.65	1.20	
11	1567.25	1.30	0.926	
12	1567.35	0.997	0.689	
13	1567.40	0.917	0.626	
14	1567.51	0.965	0.664	
15	1567.58	1.10	0.773	
16	1567.66	1.34	0.955	
17	1567.73	0.978	0.673	
18	1567.80	1.26	0.895	
19	1567.88	0.879	0.596	
20	1567.96	0.732	0.486	
21	1568.05	0.960	0.658	
22	1568.10	1.47	1.06	
23	1568.17	0.815	0.546	
24	1568.25	0.608	0.392	
25	1568.32	0.791	0.530	
26	1568.40	1.04	0.721	
27	1568.49	0.763	0.509	
28	1568.56	0.783	0.524	
29	1568.64	0.680	0.445	
30	1568.71	0.595	0.381	
31	1568.79	0.594	0.381	
32	1568.85	0.397	0.239	
33	1569.01	0.977	0.670	
34	1569.09	0.662	0.431	
35	1569.16	0.655	0.427	
36	1569.24	0.634	0.411	
37	1569.31	0.578	0.369	
38	1569.39	0.733	0.485	
39	1569.49	0.532	0.335	
40	1569.56	0.633	0.410	
41	1569.64	0.603	0.388	
42	1569.71	0.573	0.365	
43	1569.78	0.781	0.522	
44	1569.86	0.666	0.434	
45	1569.93	0.684	0.448	
46	1570.01	0.772	0.514	
47	1570.08	0.797	0.534	

PROFILE PERMEAMETRY

SAMPLE POINT	DEPTH (m)	PERMEABILITY		COMMENTS
		Ka (md)	Kinf (md)	
48	1570.16	0.777	0.519	
49	1570.24	0.675	0.441	
50	1570.30	0.621	0.401	
51	1570.37	0.851	0.573	
52	1570.45	0.862	0.581	
53	1570.54	0.749	0.497	
54	1570.62	0.639	0.414	
55	1570.69	0.628	0.406	
56	1570.77	0.627	0.406	
57	1570.84	0.666	0.412	
58	1570.91	0.673	0.440	
59	1570.98	0.523	0.328	
60	1571.06	0.482	0.298	
61	1571.14	0.374	0.222	
62	1571.21	0.411	0.248	
63	1571.28	0.480	0.297	
64	1571.36	0.597	0.382	
65	1571.43	0.617	0.398	
66	1571.51	0.512	0.321	
67	1571.59	0.590	0.377	
68	1571.66	0.387	0.232	
69	1571.74	0.139	0.068	
70	1571.81	0.115	0.054	
71	1571.88	0.037	0.013	
72	1571.96	0.079	0.033	
73	1572.03	0.079	0.034	
74	1572.11	0.102	0.046	
75	1572.18	0.138	0.067	
76	1572.25	0.167	0.085	
77	1572.33	0.201	0.107	
78	1572.40	3.24	2.51	Micro fractures, claystone clasts
79	1572.49	0.171	0.087	
80	1572.56	0.279	0.158	
81	1572.63	0.124	0.059	
82	1572.71	0.178	0.092	
83	1572.78	0.164	0.083	
84	1572.86	0.150	0.074	
85	1572.93	0.176	0.090	
86	1573.01	0.151	0.075	
87	1573.08	0.311	0.179	
88	1573.15	0.185	0.096	
89	1573.22	0.110	0.051	
90	1573.30	0.135	0.066	
91	1573.37	0.046	0.016	
92	1573.46	0.131	0.063	
93	1573.53	0.118	0.055	
94	1573.60	0.099	0.044	
95	1573.68	0.118	0.055	

PROFILE PERMEAMETRY

SAMPLE POINT	DEPTH (m)	PERMEABILITY		COMMENTS
		Ka (md)	Kinf (md)	
96	1573.75	0.111	0.051	
97	1573.83	0.070	0.029	
98	1573.90	0.075	0.031	
99	1573.97	0.077	0.032	
100	1574.05	0.098	0.044	
101	1574.12	0.203	0.108	
102	1574.20	0.350	0.206	
103	1574.27	0.701	0.460	
104	1574.35	0.301	0.172	
105	1574.44	0.208	0.111	
106	1574.52	0.188	0.098	
107	1574.59	0.256	0.142	
108	1574.67	0.341	0.199	
109	1574.74	0.319	0.185	
110	1574.82	0.286	0.162	
111	1574.88	0.695	0.456	
112	1574.96	1.29	0.915	
113	1575.03	0.828	0.555	
114	1575.10	0.821	0.549	
115	1575.18	0.776	0.518	
116	1575.26	0.927	0.630	
117	1575.34	0.634	0.410	
118	1575.41	1.02	0.706	
119	1575.50	0.803	0.538	
120	1575.59	0.350	0.206	
121	1575.65	0.766	0.510	
122	1575.73	0.202	0.107	
123	1575.80	0.628	0.406	
124	1575.88	0.137	0.067	
125	1575.96	0.182	0.095	
126	1576.02	0.127	0.060	
127	1576.10	0.182	0.094	
128	1576.17	0.353	0.208	
129	1576.33	0.381	0.228	
130	1576.24	1.04	0.718	
131	1576.40	0.268	0.150	
132	1576.49	0.222	0.119	
133	1576.56	0.396	0.237	
134	1576.64	0.395	0.237	
135	1576.72	0.370	0.219	
136	1576.79	0.429	0.260	
137	1576.86	0.446	0.272	
138	1576.93	0.307	0.176	
139	1577.04	0.438	0.266	
140	1577.08	0.251	0.138	
141	1577.15	0.466	0.286	
142	1577.23	0.487	0.301	
143	1577.30	0.640	0.413	

PROFILE PERMEAMETRY

SAMPLE POINT	DEPTH (m)	PERMEABILITY		COMMENTS
		Ka (md)	Kinf (md)	
144	1577.38	0.477	0.293	
145	1577.45	0.272	0.152	
146	1577.52	0.292	0.165	
147	1577.60	0.255	0.141	
148	1577.68	0.175	0.089	
149	1577.75	0.092	0.040	
150	1577.82	4.38	3.47	Carbonaceous parting
151	1577.90	0.099	0.044	
152	1577.97	1.57	1.13	Carbonaceous parting
153	1578.04	0.195	0.102	
154	1578.12	0.220	0.118	
155	1578.19	0.146	0.071	
156	1578.26	0.235	0.128	
157	1578.33	0.379	0.224	
158	1578.41	0.237	0.129	
159	1578.52	0.151	0.075	
160	1578.59	0.192	0.100	
161	1578.64	0.146	0.072	
162	1578.74	0.141	0.068	
163	1578.81	0.185	0.095	
164	1578.89	0.110	0.050	
165	1578.97	0.094	0.041	
166	1579.04	0.088	0.038	
167	1579.11	0.112	0.051	
168	1579.19	0.155	0.077	
169	1579.26	0.127	0.060	
170	1579.32	0.053	0.020	
171	1579.40	0.107	0.049	
172	1579.49	0.114	0.053	
173	1579.57	0.130	0.062	
174	1579.64	0.139	0.067	
175	1579.71	0.123	0.058	
176	1579.79	0.135	0.065	
177	1579.86	0.152	0.075	
178	1579.93	0.163	0.082	
179	1580.02	0.006	0.001	
180	1580.08	0.136	0.065	
181	1580.16	0.143	0.070	
182	1580.23	0.157	0.078	
183	1580.31	0.147	0.072	
184	1580.38	0.171	0.087	
185	1580.50	0.202	0.106	
186	1580.58	0.073	0.030	
187	1580.64	0.030	0.009	
188	1580.72	0.018	0.005	
189	1580.80	0.107	0.048	
190	1580.88	0.109	0.049	
191	1580.95	0.120	0.056	

PROFILE PERMEAMETRY

SAMPLE POINT	DEPTH (m)	PERMEABILITY		COMMENTS
		Ka (md)	Kinf (md)	
192	1581.03	0.270	0.150	
193	1581.10	0.225	0.121	
194	1581.17	0.172	0.087	
195	1581.23	0.068	0.027	
196	1581.32	0.100	0.045	
197	1581.39	0.045	0.016	
198	1581.50	0.017	0.004	
199	1581.57	0.032	0.010	
200	1581.65	0.036	0.012	
201	1581.72	0.019	0.005	
202	1581.80	0.036	0.012	
203	1581.87	0.019	0.005	
204	1581.95	0.046	0.016	
205	1582.02	0.088	0.038	
206	1582.10	0.267	0.148	
207	1582.17	0.261	0.145	
208	1582.25	0.217	0.116	
209	1582.32	0.201	0.105	
210	1582.39	0.293	0.165	
211	1582.49	0.159	0.079	
212	1582.56	0.125	0.059	
213	1582.62	0.150	0.074	
214	1582.71	0.140	0.067	
215	1582.78	0.250	0.137	
216	1582.86	0.206	0.108	
217	1582.93	0.231	0.124	
218	1582.98	0.192	0.100	
219	1583.08	0.219	0.117	
220	1583.15	0.311	0.177	
221	1583.23	0.355	0.207	
222	1583.30	0.350	0.204	
223	1583.38	0.404	0.241	
224	1583.46	0.343	0.199	
225	1583.53	0.312	0.178	
226	1583.61	0.215	0.114	
227	1583.68	0.236	0.128	
228	1583.75	0.249	0.136	
229	1583.83	0.282	0.158	
230	1583.90	0.250	0.137	
231	1583.97	0.245	0.134	
232	1584.05	0.270	0.150	
233	1584.12	0.325	0.187	
234	1584.20	0.346	0.201	
235	1584.27	0.365	0.214	
236	1584.38	0.327	0.188	

POROSITY, PERMEABILITY AND GRAIN DENSITY

SAMPLE NUMBER	DEPTH (m)	Original data					SCAL data					COMMENTS
		800psig NOB PRESSURE		GRAIN DENSITY (g/cc)	800psig NOB PRESSURE		GRAIN DENSITY (g/cc)					
		PERMEABILITY	POROSITY (%)		PERMEABILITY	POROSITY (%)						
				Kinf (md)			Kair (md)	Kinf (md)	Kair (md)			
1	1566.7	0.445	0.606	18.9	2.68	0.445	0.684	20.0	2.68			
2	1568.7	0.394	0.538	18.6	2.68							
3	1570.7	0.416	0.577	19.5	2.68							
4	1572.7	0.044	0.093	18.5	2.69	0.066	0.137	19.4	2.70			
5	1574.7	0.119	0.202	18.3	2.69							
6	1576.7	0.148	0.242	18.0	2.68	0.206	0.334	18.6	2.69			
7	1578.7	0.037	0.078	17.4	2.68	0.055	0.117	18.3	2.70			
8	1580.7	0.001	0.002	2.7	2.70	0.004	0.007	7.6	2.73			
9	1582.7	0.035	0.058	16.2	2.70							
10	1584.4	0.068	0.129	16.8	2.70	0.107	0.192	17.6	2.70			

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INTEGRATED CORELOG

VERTICAL SCALE
1 : 200

