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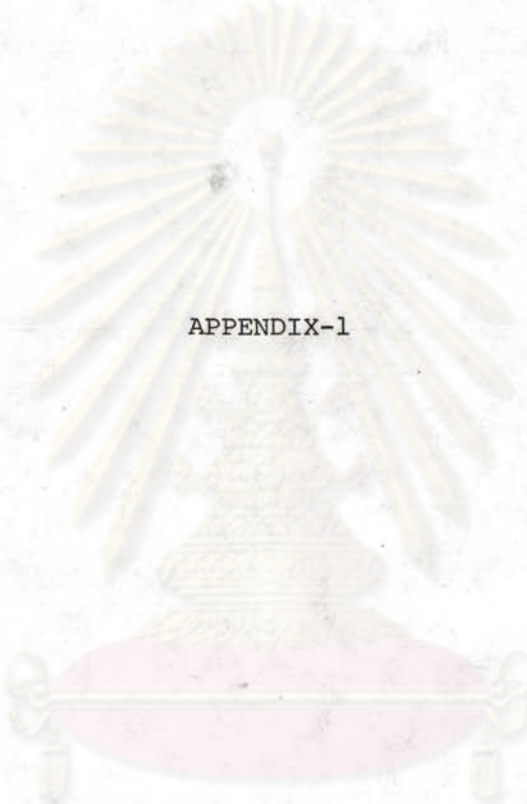
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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย



APPENDIX-1

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

CHEMICAL ANALYSIS

U Exploratory Shaft no. 1 S-1
 Location: San Nua San Si, Tamboh Nam Jo, Amphoe Nam Tho, Changwat Lampang
 Rock Name: Diatomite

Depth in ft.	Color	Quantities Percentages										
		SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO	TiO ₂	CaO	Na ₂ O	K ₂ O	MgO	H ₂ O ⁺	H ₂ O ⁻
22		38.90	17.13	20.29	0.003	0.49	0.18	0.19	0.35	0.31	8.25	2.54
23	moderate yellowish brown (10 YR 5/4)	38.45	20.67	7.77	0.002	0.63	0.6	0.25	0.94	0.42	7.13	3.07
24	very pale orange (10 YR 8/2)	34.33	22.10	8.99	0.002	0.84	0.40	0.24	0.84	0.44	7.20	2.59
25	pinkish gray (5 YR 8/1)	58.94	18.24	9.18	0.001	0.66	0.17	0.21	0.87	0.40	7.28	2.88
26	pinkish gray (5 YR 8/1)	54.23	20.28	12.47	0.002	0.75	0.07	0.22	0.92	0.44	7.74	2.81
27	dark yellowish orange (10 YR 6/6)	41.19	16.78	29.37	0.005	0.73	0.42	0.20	0.79	0.39	8.53	1.49
28	very pale orange (10 YR 8/2)	50.60	21.15	15.26	0.002	0.73	0.07	0.23	0.93	0.38	7.48	2.85
29	pinkish gray (5 YR 8/1)	40.85	17.15	28.44	0.003	0.55	0.21	0.16	0.75	0.31	8.58	2.95
30	pinkish gray (5 YR 8/1)	39.79	16.58	30.11	0.003	0.49	0.18	0.19	0.61	0.28	8.70	3.00
31	very pale orange (10 YR 8/2)	59.10	19.85	7.34	0.002	0.74	0.26	0.22	0.56	0.32	6.93	9.84
32	grayish orange (10 YR 7/4)	62.04	19.77	4.91	0.002	0.71	0.32	0.22	0.82	0.34	6.84	3.70
33	pinkish gray (5 YR 8/1)	51.54	18.41	15.97	0.003	0.40	0.17	0.21	0.80	0.32	7.96	3.70
34	pinkish gray (5 YR 8/1)	57.22	21.64	8.28	0.002	0.44	0.27	0.24	0.96	0.34	7.25	3.08
36	pinkish gray (5 YR 8/1)	62.32	16.48	8.28	0.002	1.16	0.17	0.19	0.75	0.30	6.83	3.28
35	very pale orange (10 YR 8/2)	54.82	15.55	16.98	0.03	0.41	0.04	0.14	1.52	0.34	7.17	0.79
36	pinkish gray (5 YR 8/1)	64.85	18.10	5.70	0.02	0.46	0.23	0.17	1.81	0.38	6.74	1.51
37	pinkish gray (5 YR 8/1)	64.89	20.48	3.24	0.02	0.48	0.04	0.20	2.04	0.39	6.87	1.09
38	pinkish gray (5 YR 8/1)	57.54	19.30	10.87	0.03	0.47	0.05	0.20	2.04	2.42	7.44	1.14
39	very pale orange (10 YR 8/2)	64.51	17.14	7.14	0.03	0.48	0.27	0.18	1.84	0.43	6.48	1.12
40	pinkish gray (5 YR 8/1)	61.21	19.30	8.24	0.04	0.42	0.04	0.18	1.88	0.42	7.18	1.58
41	very pale orange (10 YR 8/2)	70.46	14.03	5.45	0.03	0.41	0.05	0.13	1.14	0.28	5.82	1.66
42	pinkish gray (5 YR 8/1)	61.94	20.34	5.93	0.04	0.42	0.17	0.26	2.09	0.45	7.19	0.69
43	very pale orange (10 YR 8/2)	68.70	13.71	7.85	0.03	0.25	0.19	0.13	1.50	0.34	6.15	1.01
44	very pale orange (10 YR 8/2)	62.58	21.86	3.80	0.04	0.40	0.24	0.21	2.34	0.42	7.11	0.82
45	pinkish gray (5 YR 8/1)	62.28	19.30	4.62	0.04	0.34	0.25	0.17	2.24	0.42	7.13	1.03
46	pinkish gray (5 YR 8/1)	54.53	14.48	19.21	0.04	0.32	0.23	0.13	1.70	0.19	8.04	0.73
47	dark yellowish orange (10 YR 6/6)	56.59	15.44	16.44	0.04	0.31	0.19	0.15	1.43	0.35	7.93	0.85
48	very pale orange (10 YR 8/2)	69.78	14.41	4.43	0.04	0.24	0.27	0.14	1.81	0.39	6.47	1.75
49	pinkish gray (5 YR 8/1)	58.44	16.53	4.42	0.04	0.31	0.25	0.12	1.47	0.41	6.85	1.14
50	very pale orange (10 YR 8/2)	65.60	18.60	4.00	0.04	0.40	0.25	0.14	1.84	0.42	7.07	1.14
51	very pale orange (10 YR 8/2)	36.82	13.32	26.30	0.06	0.35	0.17	0.21	0.92	0.27	8.94	1.60
52	very pale orange (10 YR 8/2)	64.82	14.25	7.90	0.04	0.39	0.18	0.12	1.36	0.37	6.08	2.56
53	pinkish gray (5 YR 8/1)	70.20	14.40	4.16	0.04	0.35	0.19	0.11	1.57	0.38	6.14	1.94
54	very pale orange (10 YR 8/2)	70.81	14.54	3.91	0.04	0.40	0.20	0.15	1.54	0.38	5.57	2.13
55	very pale orange (10 YR 8/2)	74.53	10.77	3.24	0.03	0.29	0.15	0.09	1.02	0.29	5.24	1.24
56	very pale orange (10 YR 8/2)	74.13	11.53	4.53	0.04	0.37	0.18	0.11	1.19	0.29	5.36	2.11
57	pinkish gray (5 YR 8/1)	69.42	14.81	0.04	0.04	0.42	0.15	0.11	1.32	0.34	5.56	2.09
58	very pale orange (10 YR 8/2)	49.02	13.51	7.12	0.03	0.39	0.22	0.13	1.26	0.32	5.84	2.23
59	very pale orange (10 YR 8/2)	72.14	14.46	5.19	0.02	0.33	0.14	0.11	1.21	0.35	5.67	0.30
60	pinkish gray (5 YR 8/1)	73.82	13.32	4.45	0.02	0.34	0.11	0.11	1.27	0.33	5.44	0.35
61	pinkish gray (5 YR 8/1)	70.51	15.40	5.23	0.04	0.41	0.15	0.13	1.37	0.39	5.83	0.44
62	pinkish gray (5 YR 8/1)	59.91	16.42	13.56	0.04	0.41	0.14	0.14	1.59	0.40	7.05	0.08
63	very pale orange (10 YR 8/2)	62.37	17.38	11.01	0.05	0.44	0.12	0.15	1.55	0.33	6.28	0.08
64	pinkish gray (5 YR 8/1)	66.54	15.68	6.52	0.04	0.39	0.14	0.14	1.55	0.42	6.52	n11
65	pinkish gray (5 YR 8/1)	61.81	13.70	13.85	0.04	0.40	0.17	0.14	1.54	0.39	7.89	n11
66	pinkish gray (5 YR 8/1)	69.44	15.75	5.80	0.05	0.44	0.17	0.14	1.40	0.39	6.25	0.08
67	pinkish gray (5 YR 8/1)	65.02	13.83	8.79	0.04	0.39	0.20	0.14	1.39	0.40	7.11	1.97
68	pinkish gray (5 YR 8/1)	64.69	15.76	7.47	0.05	0.44	0.21	0.14	1.43	0.40	6.95	1.91

I.) Exploratory Shaft no. : S-1

Depth in ft.	Color	Constituent Percentages										
		SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO	TiO ₂	CaO	Na ₂ O	K ₂ O	MgO	H ₂ O ⁺	H ₂ O ⁻
69	very pale orange (10 YR 8/2)	62.90	15.19	10.25	0.04	0.39	0.17	0.14	1.43	0.28	5.93	1.80
70	pinkish gray (5 YR 8/1)	54.11	12.68	20.82	0.05	0.25	0.28	0.13	1.29	0.24	8.11	1.84
71	pinkish gray (5 YR 8/1)	67.04	14.20	7.77	0.06	0.27	0.19	0.13	1.41	0.28	5.69	1.92
72	grayish orange (10 YR 7/2)	64.13	19.04	4.82	0.06	0.44	0.24	0.20	1.82	0.44	6.24	2.37
73	pinkish gray (5 YR 8/1)	65.41	18.61	4.74	0.04	0.44	0.19	0.15	1.75	0.41	5.81	1.74
74	pinkish gray (5 YR 8/1)	67.26	14.11	8.13	0.05	0.25	0.19	0.12	1.19	0.23	5.80	1.88
75	very pale orange (10 YR 8/2)	66.78	14.37	8.19	0.04	0.44	0.18	0.13	1.43	0.40	4.51	1.29
76	very pale orange (10 YR 8/2)	64.07	14.96	6.95	0.05	0.28	0.16	0.14	1.43	0.28	6.47	1.27
77	pinkish gray (5 YR 8/1)	67.92	14.42	7.12	0.04	0.42	0.18	0.13	1.24	0.28	6.43	1.54
78	very pale orange (10 YR 8/2)	68.03	16.45	4.87	0.05	0.49	0.24	0.13	1.48	0.43	6.20	1.35
79	very pale orange (10 YR 8/2)	67.03	15.85	6.80	0.05	0.40	0.21	0.13	1.48	0.43	4.48	1.05
80	very pale orange (10 YR 8/2)	41.35	11.87	33.49	1.30	0.53	0.13	0.06	0.49	0.19	9.54	0.60
81	very pale orange (10 YR 8/2)	64.10	14.41	9.07	0.09	0.44	0.15	0.13	1.45	0.39	4.13	1.26
82	pinkish gray (5 YR 8/1)	66.14	18.19	4.48	0.05	0.45	0.16	0.16	1.83	0.45	6.33	1.64
83	very pale orange (10 YR 8/2)	73.18	13.09	4.03	0.05	0.26	0.15	0.12	1.25	0.26	5.51	1.66
84	pinkish gray (5 YR 8/1)	74.44	13.26	2.82	0.04	0.20	0.20	0.13	1.42	0.28	5.08	1.24
85	pinkish gray (5 YR 8/1)	73.53	14.12	2.24	0.03	0.23	0.26	0.15	1.41	0.20	5.41	1.20
86	pinkish gray (5 YR 8/1)	72.97	14.00	3.22	0.03	0.26	0.22	0.14	1.57	0.29	5.31	1.28
87	pinkish gray (5 YR 8/1)	67.84	13.91	8.01	0.04	0.20	0.28	0.13	1.54	0.24	6.24	1.28
88	pinkish gray (5 YR 8/1)	73.27	14.48	2.52	0.04	0.26	0.25	0.15	1.56	0.25	5.47	1.24
89	pinkish gray (5 YR 8/1)	72.25	13.47	4.49	0.04	0.21	0.29	0.14	1.48	0.24	5.41	1.00
90	pinkish gray (5 YR 8/1)	74.84	12.74	3.53	0.04	0.21	0.25	0.13	1.28	0.25	5.13	0.73
91	very pale orange (10 YR 8/2)	72.79	14.85	2.33	0.04	0.48	0.25	0.15	1.60	0.26	5.47	0.91
92	pinkish gray (5 YR 8/1)	72.94	13.84	3.08	0.06	0.20	0.27	0.15	1.45	0.28	5.40	1.24
93	pinkish gray (5 YR 8/1)	75.34	12.08	2.70	0.26	0.24	0.24	0.12	1.35	0.23	5.09	1.05
94	pinkish gray (5 YR 8/1)	75.64	12.24	2.42	0.22	0.22	0.26	0.11	1.37	0.25	4.93	1.12
95	grayish orange (10 YR 7/4)	62.87	12.27	12.25	0.24	0.24	0.28	0.12	1.25	0.24	6.12	1.53
96	pinkish gray (5 YR 8/1)	75.26	13.02	4.20	0.04	0.18	0.16	0.10	1.25	0.18	4.66	1.33
97	grayish orange pink (5 YR 7/2)	68.12	15.24	5.50	0.32	0.22	0.27	0.14	1.90	0.26	3.91	0.98
98	dark yellowish orange (10 YR 6/4)	64.72	10.24	15.83	0.18	0.18	0.25	0.09	1.03	0.22	5.73	0.73

CHEMICAL ANALYSES

II.) Exploratory Shaft no. : S-2

Location: San Kiat Phae, Tasean Kiat Phae, Amphoe Phang, Changwat Lampang.

Rock Name: Diatomite

Depth in ft.	Color	Constituent Percentages		
		Al ₂ O ₃	SiO ₂	Fe ₂ O ₃
6	white	10.88	55.73	12.81
7	white	10.88	62.05	8.83
8	white	13.46	50.67	11.06
9	very pale orange (10 YR 8/2)	14.03	57.99	6.24
10	white	12.02	62.05	6.24
11	pinkish gray (5 YR 8/1)	15.75	51.23	4.53
12	pinkish gray (5 YR 8/1)	18.04	50.47	2.94
13	white	13.17	54.61	4.20
14	very pale orange (10 YR 8/2)	13.17	51.79	15.75
15	pinkish gray (5 YR 8/1)	16.32	53.48	11.45
16	very pale orange (10 YR 8/2)	18.60	55.73	5.01
17	pinkish gray (5 YR 8/1)	17.18	60.24	2.22
18	white	12.21	59.68	14.80
19	white	13.45	46.80	8.11
20	white	10.02	54.05	20.74
21	pinkish gray (5 YR 8/1)	16.60	64.74	4.46
22	very pale orange (10 YR 8/2)	12.88	57.99	19.09
23	very pale orange (10 YR 8/2)	17.44	59.68	5.45
24	very pale orange (10 YR 8/2)	15.75	61.93	3.58
25	very pale orange (10 YR 8/2)	13.45	64.74	4.61
26	very pale orange (10 YR 8/2)	10.02	63.05	5.01
27	very pale orange (10 YR 8/2)	12.02	64.74	4.93
28	very pale orange (10 YR 8/2)	12.21	66.99	4.69
29	very pale orange (10 YR 8/2)	11.45	64.74	10.34
30	very pale orange (10 YR 8/2)	12.21	68.69	9.17
30	very pale orange (10 YR 8/2)	12.88	68.68	3.72
31	pale yellowish orange (10 YR 8/4)	12.74	61.26	12.52
32	pale yellowish orange (10 YR 8/4)	12.02	66.99	7.25
33	very pale orange (10 YR 8/2)	13.17	59.11	13.68
34	pale yellowish orange (10 YR 8/4)	12.02	60.80	12.59
35	pale yellowish orange (10 YR 8/4)	11.49	60.61	10.72
36	very pale orange (10 YR 8/2)	12.06	62.75	7.15
37	very pale orange (10 YR 8/2)	12.51	54.20	19.04
38	very pale orange (10 YR 8/2)	11.23	62.75	6.04
39	very pale orange (10 YR 8/2)	12.51	62.04	5.21
40	pinkish gray (5 YR 8/1)	10.21	64.89	11.73
41	very pale orange (10 YR 8/2)	11.75	66.32	8.16
42	very pale orange (10 YR 8/2)	12.00	71.21	4.27
43	pinkish gray (5 YR 8/1)	13.06	62.04	5.75
44	very pale orange (10 YR 8/2)	13.24	62.04	6.22
45	pinkish gray (5 YR 8/1)	12.22	67.74	5.47
46	pinkish gray (5 YR 8/1)	11.95	67.74	6.40
47	very pale orange (10 YR 8/2)	12.78	70.40	4.51
48	very pale orange (10 YR 8/2)	10.28	49.92	7.15
49	very pale orange (10 YR 8/2)	10.56	69.88	4.82
50	pinkish gray (5 YR 8/1)	10.00	67.03	9.25
51	very pale orange (10 YR 8/2)	10.28	74.16	5.33

II.) Exploratory Shaft no. : S-2

Depth in ft.	Color	Constituent Percentages		
		Al ₂ O ₃	SiO ₂	Fe ₂ O ₃
52	pinkish gray (5 YR 8/1)	9.72	72.03	4.97
53	pale yellowish orange (10 YR 8/6)	10.84	63.47	10.12
54	pinkish gray (5 YR 8/1)	12.23	57.76	14.61
55	pinkish gray (5 YR 8/1)	10.00	67.03	7.43
55	pinkish gray (5 YR 8/1)	10.56	66.32	6.76
56	very pale orange (10 YR 8/2)	10.56	62.75	7.85
57	very pale orange (10 YR 8/2)	12.67	68.17	5.13
58	very pale orange (10 YR 8/2)	12.50	67.03	3.96
59	very pale orange (10 YR 8/2)	10.84	67.74	7.23
60	pinkish gray (5 YR 8/1)	13.06	65.61	6.22
61	pinkish gray (5 YR 8/1)	10.56	64.89	4.13
62	very pale orange (10 YR 8/2)	6.29	37.08	55.04
63	very pale orange (10 YR 8/2)	12.50	72.45	4.12
64	pinkish gray (5 YR 8/1)	11.94	72.02	6.40
65	pinkish gray (5 YR 8/1)	12.50	74.16	4.64

II.) Exploratory Shaft no. 1 S-2

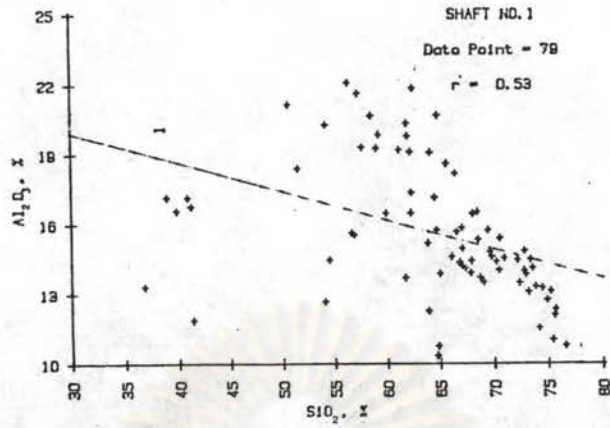
Depth in ft.	Color	Constituent Percentages		
		Al ₂ O ₃	SiO ₂	Fe ₂ O ₃
66	pinkish gray (5 YR 8/1)	11.39	61.67	7.77
67	pinkish gray (5 YR 8/1)	9.73	67.74	3.19
68	pinkish gray (5 YR 8/1)	8.61	71.21	4.82
69	very pale orange (10 YR 8/2)	10.56	74.80	3.03
70	pinkish gray (5 YR 8/1)	8.34	74.14	3.73
71	very pale orange (10 YR 8/2)	8.61	79.87	1.55
72	pinkish gray (5 YR 8/1)	8.89	71.31	6.53
73	very pale orange (10 YR 8/2)	9.17	70.60	10.80
74	pinkish gray (5 YR 8/1)	8.61	74.02	6.29
75	pinkish gray (5 YR 8/1)	2.72	74.88	1.72
76	pinkish gray (5 YR 8/1)	11.41	68.46	7.23
77	very pale orange (10 YR 8/2)	13.28	60.33	10.03
78	pinkish gray (5 YR 8/1)	12.72	64.18	5.67
79	very pale orange (10 YR 8/2)	11.41	68.46	3.21
80	very pale orange (10 YR 8/2)	13.04	68.46	3.26
81	very pale orange (10 YR 8/2)	9.54	72.31	5.91
82	very pale orange (10 YR 8/2)	9.92	67.60	8.39
83	pale yellowish orange (10 YR 8/6)	10.85	54.34	22.16
84	pinkish gray (5 YR 8/1)	14.03	54.77	4.27
85	pinkish gray (5 YR 8/1)	17.21	51.77	0.78
86	pinkish gray (5 YR 8/1)	11.97	51.34	2.10
87	pinkish gray (5 YR 8/1)	10.85	60.76	2.41
88	pinkish gray (5 YR 8/1)	10.85	58.19	2.10
89	pinkish gray (5 YR 8/1)	10.85	21.20	1.86
90	pinkish gray (5 YR 8/1)	11.97	18.40	1.79
91	pinkish gray (5 YR 8/1)	13.66	22.68	1.86
92	pinkish gray (5 YR 8/1)	14.59	44.93	1.86
93	pinkish gray (5 YR 8/1)	14.03	24.94	2.02
94	pinkish gray (5 YR 8/1)	14.22	63.67	2.18
95	pinkish gray (5 YR 8/1)	12.16	61.12	1.24
95	pinkish gray (5 YR 8/1)	12.25	64.69	1.09
96	pinkish gray (5 YR 8/1)	11.41	64.22	1.40
97	pinkish gray (5 YR 8/1)	8.79	89.27	1.09
98	pinkish gray (5 YR 8/1)	10.10	71.31	1.63
99	pinkish gray (5 YR 8/1)	9.17	71.31	1.24
100	pinkish gray (5 YR 8/1)	10.66	70.80	1.79
101	pinkish gray (5 YR 8/1)	12.35	57.05	11.34
102	pinkish gray (5 YR 8/1)	12.53	62.14	1.63
103	pale yellowish brown (10 YR 8/2)	13.66	64.14	1.01
104	moderate yellowish brown (10 YR 8/4)	12.53	57.04	1.84

CHRONOLOGICAL ANALYSIS

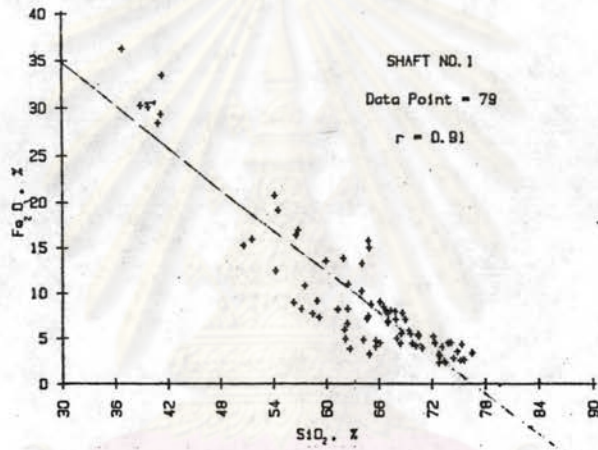
III.) Exploratory Shaft no. 1 S-3

Location: Ban Ouan (Lai Thong), Tamboon Nok Tho, Changsat Lengang
Rock Name: Diatomite

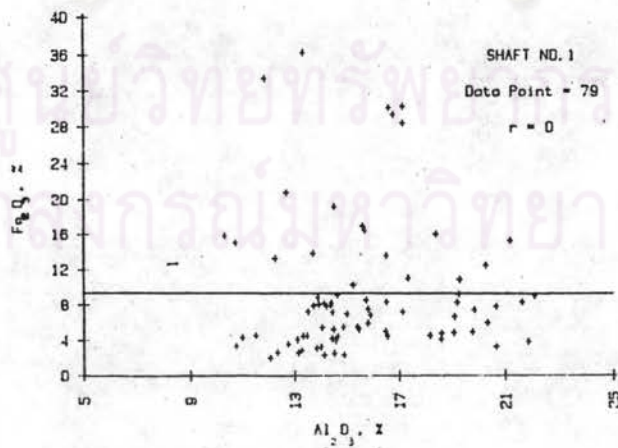
Depth in ft.	Color	Constituent Percentages			
		Al ₂ O ₃	SiO ₂	Fe ₂ O ₃	CaO
4	dark yellowish orange (10 YR 6/6)	14.67	66.00	6.14	2.73
7	grayish orange (10 YR 7/4)	9.11	73.28	6.64	1.33
9	dark yellowish orange (10 YR 6/6)	8.44	77.83	7.87	0.47
12	dark yellowish orange (10 YR 6/6)	6.89	75.10	9.39	0.24
13	dark yellowish orange (10 YR 6/6)	15.78	50.98	17.14	0.96
14	pale yellowish orange (10 YR 8/6)	13.56	41.88	6.54	8.64
15	very pale orange (10 YR 8/2)	15.36	59.63	4.25	3.78
16	white	14.89	60.54	1.71	3.46
19	white	10.45	70.55	1.59	0.20
20	very pale orange (10 YR 8/2)	11.11	75.10	1.90	0.49
21	very pale orange (10 YR 8/2)	10.00	78.75	2.22	0.23
22	pinkish gray (5 YR 8/1)	13.56	64.73	2.73	0.26
23	very pale orange (10 YR 8/2)	10.00	70.55	1.90	0.23
24	very pale orange (10 YR 8/2)	10.00	75.54	1.78	0.28
27	very pale orange (10 YR 8/2)	14.45	71.01	3.81	0.38
28	white	14.89	67.37	1.97	0.33
29	very pale orange (10 YR 8/2)	14.00	61.83	2.16	4.38
30	white	14.22	69.19	8.82	0.40
31	very pale orange (10 YR 8/2)	10.45	71.46	3.17	0.38
32	white	12.67	70.55	3.63	0.43
33	white	8.22	84.66	1.65	0.25
34	very pale orange (10 YR 8/2)	12.23	72.83	2.93	0.36
35	pinkish gray (5 YR 8/1)	10.67	64.28	2.54	0.33
36	very pale orange (10 YR 8/2)	10.89	71.92	2.92	0.26
37	pinkish gray (5 YR 8/1)	13.56	70.10	2.92	0.27
39	very pale orange (10 YR 8/2)	13.56	67.37	2.79	0.30
40	very pale orange (10 YR 8/2)	10.67	78.75	2.09	0.19
42	very pale orange (10 YR 8/2)	12.67	72.83	2.22	0.25
43	very pale orange (10 YR 8/2)	12.00	77.38	1.90	0.22
44	very pale orange (10 YR 8/2)	10.89	69.64	2.60	0.22
45	very pale orange (10 YR 8/2)	10.23	75.54	1.64	0.18
46	very pale orange (10 YR 8/2)	11.11	71.01	2.28	0.21
49	very pale orange (10 YR 8/2)	11.34	67.37	4.25	0.25
50	very pale orange (10 YR 8/2)	12.45	64.00	1.78	0.26
51	pinkish gray (5 YR 8/1)	9.84	68.73	1.59	0.22
52	pinkish gray (5 YR 8/1)	11.78	69.19	1.65	0.22
53	pinkish gray (5 YR 8/1)	13.12	74.65	1.59	0.22
54	pinkish gray (5 YR 8/1)	13.34	74.19	1.27	0.19
58	very pale orange (10 YR 8/2)	16.23	68.28	3.75	0.22
59	very pale orange (10 YR 8/2)	13.12	64.66	2.60	0.23
60	very pale orange (10 YR 8/2)	10.89	60.08	5.71	0.25
62	grayish orange (10 YR 7/4)	16.67	64.91	1.71	0.26



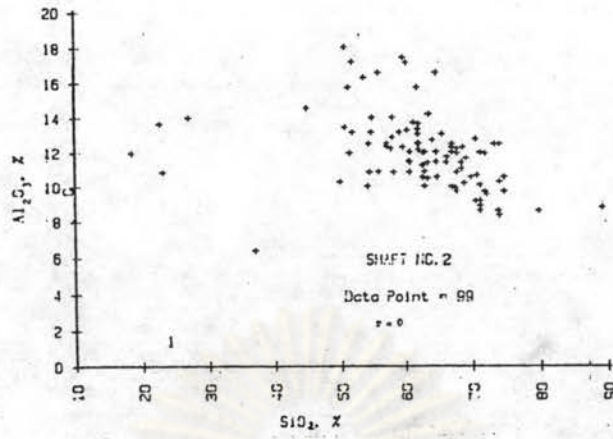
CROSSPLOT OF Al_2O_3 VS. SiO_2



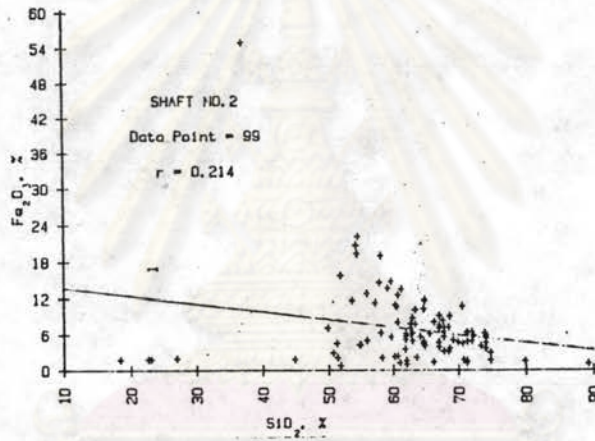
CROSSPLOT OF Fe_2O_3 VS. SiO_2



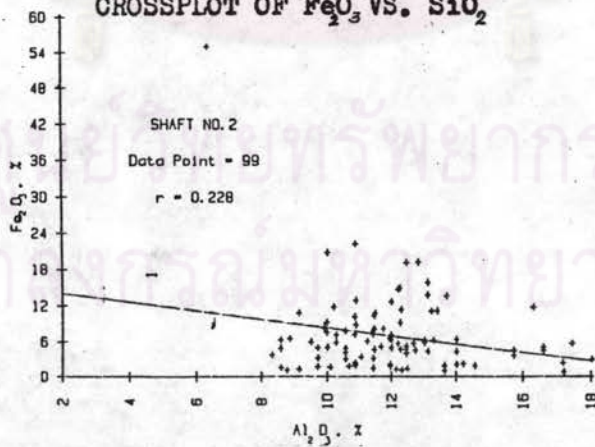
CROSSPLOT OF Fe_2O_3 VS. Al_2O_3



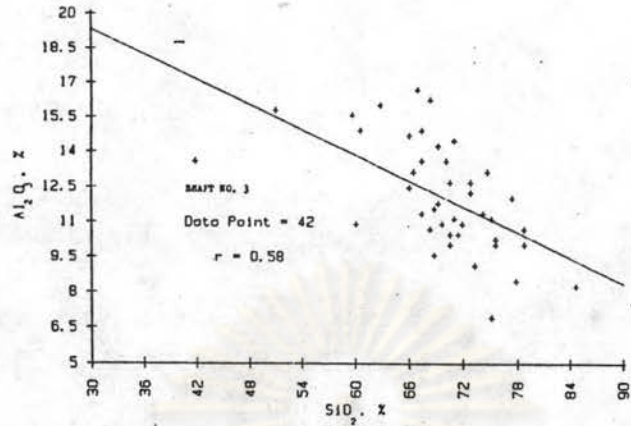
CROSSPLOT OF Al_2O_3 VS. SiO_2



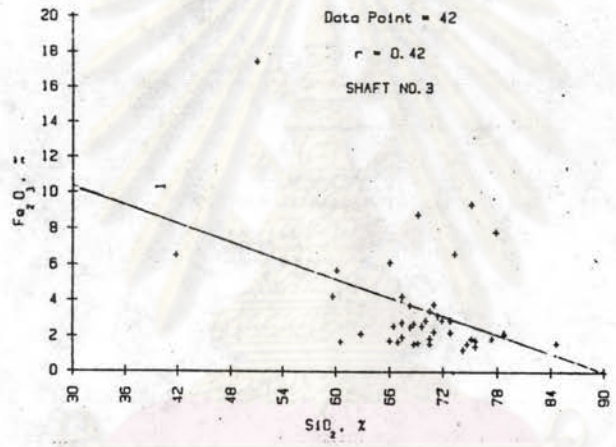
CROSSPLOT OF Fe_2O_3 VS. SiO_2



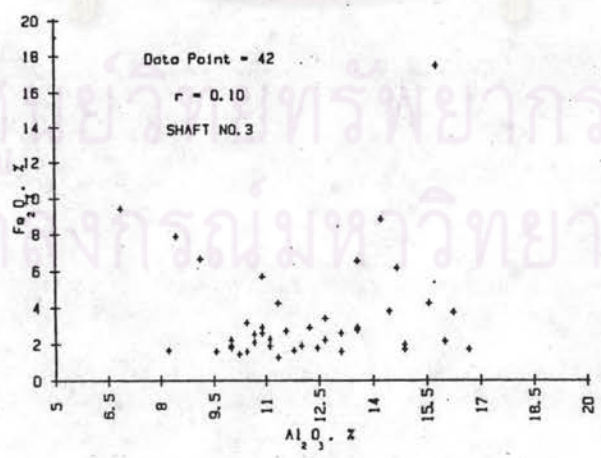
CROSSPLOT OF Fe_2O_3 VS. Al_2O_3



CROSSPLOT OF Al_2O_3 VS. SiO_2



CROSSPLOT OF FeO VS. SiO_2



CROSSPLOT OF FeO VS. Al_2O_3

PHYSICAL PROPERTIES

I.) Exploratory Shaft no. : S-1
 Location: Ban Mon Saen Si, Tambon Nam Jo, Amphoe Mae Tha, Changwat
 Lampang

Rock Name: Diatomite

Depth in ft.	Density gm./c.c. (105°C)	
	bulk	loosed-140 mesh
24	0.90	
27	0.87	
29		0.16
30		0.18
32	0.87	
34	0.87	0.30
35	0.84	0.26
36		0.20
38		0.21
39	0.76	
40	0.58	
46		0.28
48	0.57	
49		0.31
53		0.31
56	0.55	
57		0.30
58	0.62	0.24
60		0.26
62	0.49	
66		0.30
68		0.29
71	0.57	
74		0.25
79		0.26
81	0.72	
83		0.24
88	0.61	
91		0.20
92	0.58	
96		0.18

Depth in ft.	Wt. % oil absorption
34	125
55	223

Refractive index
All specimens range from 1.45 to 1.47

PHYSICAL PROPERTIES

II.) Exploratory Shaft no. : S-2
 Location: Ban Kluai Phae, Tambon Kluai Phae, Amphoe Muang, Changwat
 Lampang

Rock Name: Diatomite

Depth in ft.	Density gm./c.c. (105°C)	
	bulk	loosed-140 mesh
13	0.75	0.29
14	0.17	
16	0.77	
21	0.83	
22	0.76	0.41
24		0.36
25	0.81	0.37
29	0.83	0.42
30	0.78	0.40
36	0.80	0.38
37	0.86	0.35
38		0.38
40	0.65	0.31
42		0.34
43	0.66	0.34
45	0.67	0.25
46	0.67	0.23
48	0.68	0.25
56	0.88	0.34
57	0.85	0.35
58	0.86	0.35
61	0.72	0.34
66	0.88	0.33
67	0.85	0.34
68	0.86	0.34
70	0.69	0.35
77	0.96	0.32
78	0.82	0.32
81	0.93	0.29
84		0.36
85	0.76	
88	0.81	0.36
91	0.84	0.34
92	0.85	0.35
93	0.87	0.34
94		0.33
95	0.89	
96	0.81	0.33
97	0.72	0.33
99	0.87	
100		0.34
101		0.30
102		0.35

II.) Exploratory Shaft no. : S-2

Depth in ft.	Wt. % oil absorption
48	164
56	146
70	144
90	160

Refractive index
All specimens range from 1.45 to 1.47

III.) Exploratory Shaft no. : S-3
 Location: Ban Ouan, Tambon Na Krua, Amphoe Mae Tha,
 Changwat Lampang

Depth in ft.	Density gm./c.c. (105°C)	
	bulk	loosed-140 mesh
16		0.15
19	0.41	0.16
21	0.59	0.22
22	0.57	0.21
23	0.57	0.22
24	0.58	0.21
27	0.52	0.17
28		0.14
30	0.49	0.15
32	0.50	0.15
33		0.15
34	0.50	
35		0.18
36	0.46	0.16
37	0.58	0.16
42	0.53	0.15
44	0.55	0.23
45	0.55	0.20
46	0.50	0.21
49	0.52	0.21
51	0.44	0.16
52	0.46	0.14
53	0.46	0.14
54	0.50	0.15
58	0.60	
59	0.61	0.19

I.) Exploratory Shaft no. : S-1

Depth in ft.	Specific gravity
23	2.30
24	2.26
25	2.36
26	2.25
27	2.17
28	2.25
30	2.58
31	2.52
32	2.37
33	2.30
34	2.31
36	2.16
37	2.20
39	2.18
40	2.28
41	2.29
42	2.30
43	2.32
44	2.24
45	2.33
46	2.33
47	2.38
48	2.31
49	2.25
50	2.34
51	2.23
52	2.35
53	2.26
54	2.22

III.) Exploratory Shaft no. : S-3

Depth in ft.	Specific gravity
4	2.50
7	2.60
9	2.43
12	2.41
13	2.40
14	2.42
15	2.31
16	2.31
19	2.26
20	2.27
21	2.25
22	2.20
23	2.27
24	2.25
27	2.28
28	2.26
29	2.21
30	2.39
32	2.35
33	2.20
34	2.31
35	2.27
36	2.33
37	2.30
39	2.28
40	2.30
42	2.22
43	2.32
44	2.30
45	2.30
46	2.48
49	2.35
50	2.31
51	2.28
52	2.26
53	2.27
54	2.23
58	2.30
59	2.37
60	2.40
62	2.35

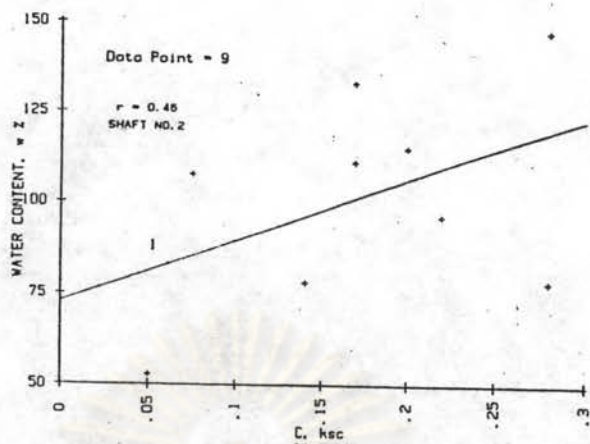
III.) Exploratory Shaft no. : S-3

Depth in ft.	Refractive index
19	1.457
21	1.451
28	1.459
30	1.457
33	1.455
39	1.479
40	1.456
44	1.472
46	1.476
49	1.461
53	1.478

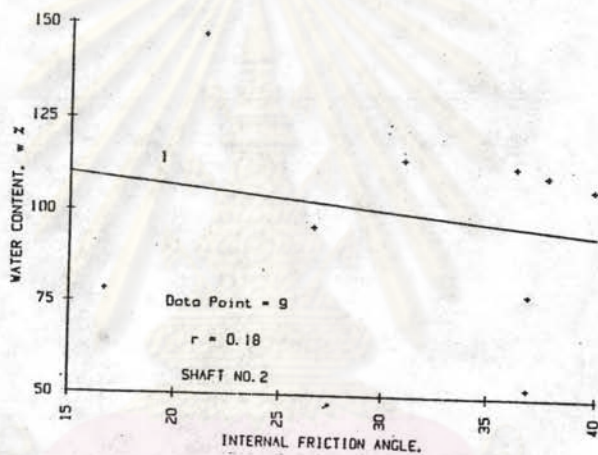
Depth in ft.	Wt. % oil absorption
19	276
34	200
37	245
44	244
59	211

DRILLHOLE NO D1

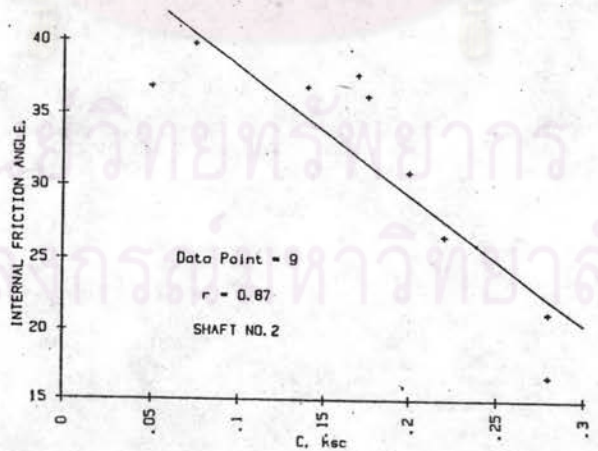
Sample no	Depth in ft	Shale oil content	
		% wt	rel/ton
1	296' - 306'	6.13	16.22
2	306' - 315'	6.73	17.80
3	315' - 320' 5"	2.65	7.56
4	320' 5" - 331' 6"	0.89	2.35
5	331' 6" - 341' 5"	0.30	0.80
6	351' - 359'	1.40	3.82
7	359' - 372'	0.43	1.14
8	584' - 588'	1.20	3.23
9	596' - 603'	1.29	3.46
10	610' - 623' 2"	2.45	6.51
11	702' - 706' 3"	6.32	17.02
12	768' - 775'	5.18	14.12
13	776' - 782' 2"	3.12	8.16
14	815' - 819'	2.79	7.34
15	856' - 862' 8"	0.50	1.35



CROSSPLOT OF WATER CONTENT VS. COHESIVE FORCE



CROSSPLOT OF WATER CONTENT VS. INTERNAL FRICTION ANGLE



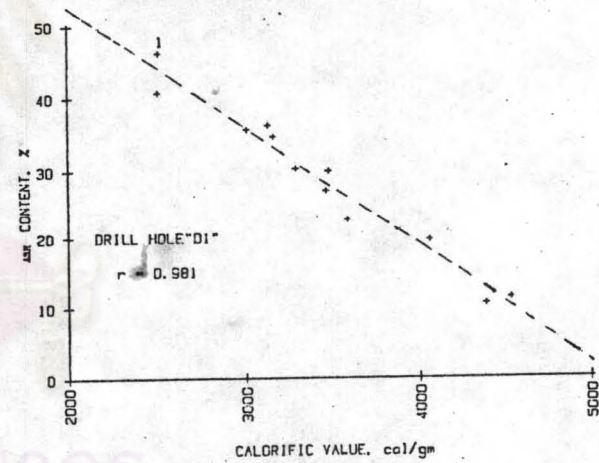
CROSSPLOT OF INTERNAL FRICTION ANGLE VS. COHESIVE FORCE

DRILLHOLE NO D1

Sample No.	1	2	3	4	5	6	7	8	9	10	11	12
Depth in ft	341'2"-343'2"	343'2"-345'2"	345'2"-347'2"	347'2"-349'2"	349'2"-351'2"	351'2"-353'2"	353'2"-355'2"	355'2"-357'2"	357'2"-359'2"	359'2"-361'2"	361'2"-363'2"	363'2"-365'2"
Moisture, %	17.31	12.11	12.19	12.09	13.71	15.22	19.59	16.46	15.78	17.26	21.12	18.90
Ash, %	11.21	31.12	46.08	34.55	35.56	40.69	10.40	29.84	30.19	26.98	19.56	22.58
Volatile Matter, %	31.05	29.56	24.54	30.18	28.20	27.32	34.70	25.93	26.54	30.76	27.94	28.21
Fixed Carbon, %	35.53	22.11	17.19	22.28	3.05	2.74	3.54	1.63	27.49	25.60	31.36	30.31
Sulphur, %	3.02	3.40	2.32	3.13	3,009.0	2,510.0	4,379.9	3,477.5	2.80	3.48	2.46	4.37
Calorific Value Cal/gm	4,525.4	3,130.9	2,514.0	3,161.1	1,6273	1,7877	1,4141	1,4141	3,288.8	3,462.4	4,058.0	3,585.9
Specific Gravity	1.4235	1.5684	1.6557	1.6770	Subbituminous C coal	Subbituminous C coal	Subbituminous C coal	Subbituminous C coal	1.5073	1.5716	1.4014	1.4693
Class and Group of sample	Subbituminous, Subbituminous C Coal								Subbituminous Subbituminous C coal			

DRILLHOLE NO D1

Oil Content		Water Content		Specific gravity		Spent Shale %	Moisture %	Ash %
%wt/wt	gal/ton	%wt/wt	gal/ton	Oil Shale	Shale Oil			
9.84	26.26	5.40	12.94	1.5784	0.8983	82.00	24.78	66.64



CROSSPLOT OF ASH CONTENT VS. CALORIFIC VALUE

SHAFT NO 1		SHAFT NO 2		SHAFT NO 3	
Depth(ft)	% Clay	Depth(ft)	% Clay	Depth (ft)	% Clay
22.	42.88	6	27.2	4	36.68
23	51.68	7	27.2	7	22.78
24	55.25	8	33.65	9	21.10
25	48.15	9	35.08	12	17.22
26	50.70	10	30.05	13	39.45
27	41.90	11	39.38	14	33.50
28	52.98	12	45.10	15	38.90
29	42.88	13	32.93	16	37.22
30	41.45	14	32.93	19	26.12
31	49.63	15	40.80	20	27.78
32	49.43	16	41.50	21	25.00
33	46.03	17	42.95	22	28.90
34	54.10	18	30.78	23	25.00
35	35.88	19	28.63	24	25.00
36	41.20	20	25.05	27	36.12
36	45.25	21	41.50	28	37.22
37	51.70	22	32.20	29	40.00
38	48.25	23	43.65	30	35.55
39	42.85	24	39.38	31	26.12
40	48.00	25	28.63	32	31.68
41	35.08	26	25.05	33	20.55
42	50.85	27	30.05	34	30.58
43	34.28	28	30.78	35	26.68
44	54.05	29	28.63	36	27.22
45	47.75	30	30.78	37	33.90
46	36.2	31	34.35	39	33.90
47	39.1	32	30.05	40	26.68
48	36.52	33	32.93	42	31.68
49	41.32	34	30.05	43	30.00
50	46.50	35	26.73	44	27.22
51	33.30	36	30.00	45	25.58
52	35.88	37	31.28	46	27.78
53	36.00	38	28.05	49	28.35
54	36.35	39	31.28	50	31.12
55	26.92	40	25.53	51	23.90
56	28.75	41	29.38	52	29.45
57	37.02	42	30.00	53	32.80
58	33.78	43	32.65	54	28.35
59	36.15	44	33.36	58	40.58
60	33.30	45	30.55	59	32.80
61	38.50	46	29.88	60	27.22
62	41.20	47	31.55	62	41.67
63	43.40	48	25.70		
64	39.20	49	26.40		
65	34.25	50	25.00		
66	39.38	51	25.7		
67	34.70	52	24.33		
68	35.40	53	27.00		
69	37.98	54	30.58		
70	31.70	55	25.00		

SHAFT NO 1

SHAFT NO 2

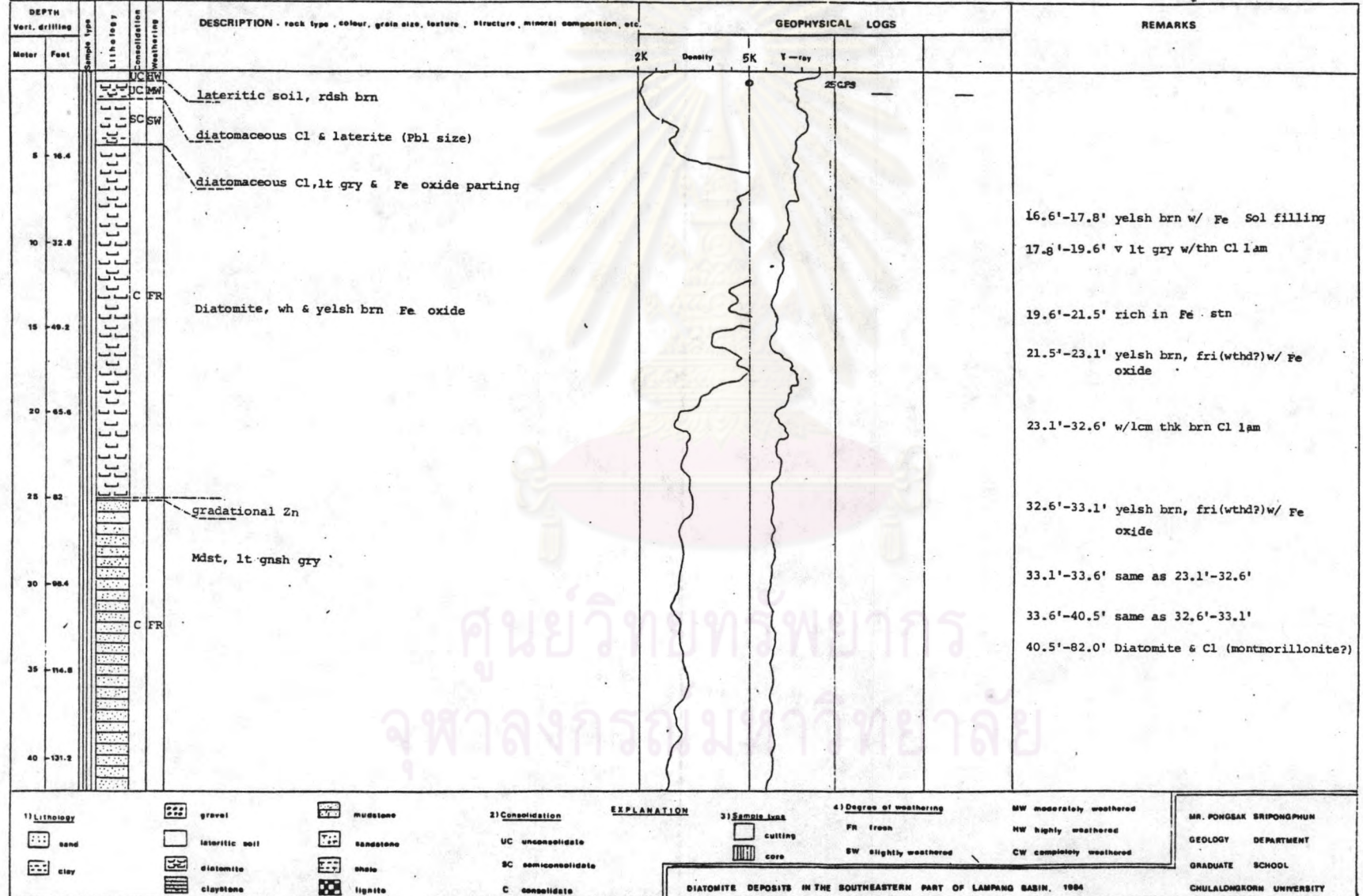
Depth(ft)	% Clay	Depth(ft)	%Clay
71	35.50	56	26.40
72	47.70	57	29.18
73	46.52	58	31.25
74	35.28	59	27.1
75	35.92	60	32.65
76	37.40	61	26.4
77	36.05	62	15.98
78	41.12	63	31.25
79	39.62	64	29.85
80	29.68	65	31.25
81	36.52	66	26.48
82	45.48	67	24.32
83	32.72	68	21.52
84	33.15	69	26.40
85	35.30	70	20.85
86	35.00	71	21.52
87	34.78	72	22.22
88	36.20	73	22.92
89	33.68	74	21.52
90	31.85	75	24.30
91	37.12	76	28.52
92	34.60	77	33.20
93	30.20	78	31.00
94	30.85	79	28.52
95	30.68	80	27.60
96	27.55	81	23.68
97	38.35	82	24.80
98	25.85	83	27.12
99	32.82	84	35.08
100	26.90	85	43.02
		86	29.52
		87	27.12
		88	27.12
		89	27.12
		90	29.92
		91	34.15
		92	36.48
		93	35.08
		94	35.55
		95	30.40
		96	28.52
		97	21.98
		98	25.25
		99	22.92
		100	26.65
		101	30.88
		102	31.32
		103	34.15
		104	31.32



APPENDIX-2

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

PROJECT DIATOMITE DRILL NO.&TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 1
 DRILLHOLE NO DLY1-54-DAL DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845II GROUND ELEVATION 259.734 m. GEOLOGIST'S T. Aswin, K. Natthapong, S. Pongsak (D1)



PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 2

DRILLHOLE NO DLY1-54-D1 DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,250 feet

LOCATION 506062, 4845 II

GROUND ELEVATION 259.734 m. GEOLOGIST'S: T. Aswin, K. Natthaporn, S. Pongsak (D1)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS			REMARKS	
Vert drilling							2K	Density	5K		T-ray
Meter	Foot										
45	147.6					Mdst, yelsh gry 5Y7/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5 to core axis 1% peat Tr					
50	164.0										
55	180.4										
60	196.8				C FR						
65	213.2										223.0'-286.3' Lig Tr 1%
70	229.6										254.2'-256.0' vert Jt
75	246.0										257.6'-263.0' vert Jt
											266.0'-267.6' vert Jt
											269.4'-270.7' Foss Gast & Pelec
80	262.4										274.3'-275.7' sbvert Jt

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 3
 DRILLHOLE NODLY1-54-DAL DRILLHOLE SIZE 3. inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II GROUND ELEVATION 259.734 m. GEOLOGIST(S) T. Aswin, K. Natthaporn, S. Pongsak
 (D1)

DEPTH Vert drilling Meter	Foot	Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS					REMARKS		
							Density	γ-ray	% SHALE OIL					
									25 CPS	2	4	6	8	
85-278.0														277.6'-278.5' calc
														281.4'-286.3' calc
90-295.2						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								286.3'-289.0' Lig Tr 5%
						Clst dk yelsh brn 10YR4/2(dry), dusky yelsh brn 10YR2/2(wet), parallel Jts set 5' to core axis								289.0'-293.9' Foss Gast & Pelec
						OSh, dk yelsh brn 10YR4/2(dry), dusky yelsh brn 10YR2/2(wet), parallel Jts set 5' to core axis								289.0'-296.0' Lig Tr 1%
95-311.8						OSh, dk yelsh brn 10YR4/2(dry), dusky yelsh brn 10YR2/2(wet), parallel Jts set 5' to core axis								296.0'-306.7' Lig Tr 5%
						OSh, pale yelsh brn 10YR6/2(dry), grysh brn 5YR3/2(wet), parallel Jts set 5' to core axis								297.4' Foss fish scales
						OSh, pale yelsh brn 10YR6/2(dry), grysh brn 5YR3/2(wet), parallel Jts set 5' to core axis								307.4'-315.0' Lig Tr 10%
100-328.0						OSh, yelsh brn 10YR4/2(dry), grysh brn 5YR3/2(wet), parallel Jts set 5' to core axis, calc.								308.0' Foss Pelec
						OSh, lt olv gry 5Y6/1(dry), olv gry 5Y4/1(wet), parallel Jts set and sbvert Jt, calc.								310.7' Foss fish scales
105-344.4						Lig, blk, frac								315.0'-320.4' Lig Tr 1%
						Clst, pale yelsh brn 6YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								318.4'-320.0' vert Jt
						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis, calc.								320.4'-331.5' Lig Tr 1%
						Lig, blk, sd								331.5'-341.1' Lig Tr 1%
						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								346.0'-348.0' shear Zn
110-360.8						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								346.0'-350.2' Lig Tr 1%
						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								350.2'-359.5' Lig Tr 1%
						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis								359.5'-372.0' Lig Tr 1% & Foss fish scales
115-377.2						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis, calc.								359.5'-367.8' sbvert Jt
						Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet), parallel Jts set 5' to core axis, calc.								
						Lig, blk, sd								
120-393.6						Clst, gnsn gry 5GY6/1, olv gry 5Y4/1, shear Zn								
						Clst, pale gnsn yel 10Y8/2(dry), gnsn gry 5GY6/1(wet), parallel Jts set 5' to core axis, sbvert Jts, pt sheared								
						Clst, pale yelsh brn 10YR6/2(dry) mod brn 5YR3/4(wet)								
125-410.0														

1) Lithology sand clay	gravel lateritic soil diatomite claustone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 4

DRILLHOLE NO DLY1-54-D1 DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II

GROUND ELEVATION 259.734 m. GEOLOGIST'S: T. Aswin, K. Natthaporn, S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS			REMARKS
Vert	grilling						Density	Y-ray	25 CPS	
Meter	Foot									
130	428.4			C FR		Clst, pkish gry 5YR8/1(dry), lt olv gry 5Y6/1(wet)				403.7'-405.2' Lig Tr 1%
						Clst, lt olv gry 5Y6/1(dry), olv gry 5Y4/1, silly calc				405.2'-407.0' Foss fish scales
				C FR		Clst, pale yelsh brn 10YR6/2(dry), dk yelsh brn 10YR4/2(wet)				403.7'-446.6' parallel Jts set 5 to core axis
						Clst, lt olv gry 5Y6/1(dry), olv blk 5Y2/1(wet), parallel Jts set 5 to core axis				407.0'-416.0' Lig Tr 1%
135	442.8					Clst, lt olv gry 5Y6/1(dry), olv blk 5Y2/1(wet), parallel Jts set 5 to core axis				416.0'-446.6' Foss fish scales
				C FR		OSh, mod yelsh brn 10YR5/4(dry), grysn brn 5YR3/2(wet), sbvert Jts at 453.8'-457.0', Lig Tr 1%				425.0'-426.0' shear Zn
				C FR		OSh, mod yelsh brn 10YR5/4(dry), grysn brn 5YR3/2(wet), sbvert Jts at 453.8'-457.0', Lig Tr 1%				444.8'-446.0' vert Jt
140	456.2					OSh, mod yelsh brn 10YR5/4(dry), grysn brn 5YR3/2(wet), sbvert Jts at 453.8'-457.0', Lig Tr 1%				446.6'-453.2' Lig Tr 1%
				C FR		Clst, lt olv gry 5Y6/1(dry), olv gry 5Y4/1(wet), fri, parallel Jts set 5 to core axis, Lig Tr 1%				449.8' Foss fish spine
				C FR		Clst, lt olv gry 5Y6/1(dry), olv gry 5Y4/1(wet), fri, parallel Jts set 5 to core axis, Lig Tr 1%				486.0'-487.0' fri
				C FR		Liq, blk, frac				494.5'-496.0' vert Jt
				C FR		OSh, pale yelsh brn 10YR6/2(dry), dusky brn 5YR2/2(wet)				506.8'-511.5' shear Zn
145	475.6					OSh, pale yelsh brn 10YR6/2(dry), dusky brn 5YR2/2(wet)				521.5'-522.8' vert Jt
				loss		Lig Tr 1%				524.2'-526.0' frac
						Lig, blk				526.0'-530.3' sbvert Jts set
150	492.0					Lig, blk				
				C FR		Clst, yelsh gry 5Y8/1(dry), mod olv brn 5Y4/4(wet) Jts set 5 to core axis				
				C FR		Clst, pale yelsh brn 10YR6/2(dry), dusky yelsh brn 10YR2/2(wet), pt calc				
155	508.4					Clst, pale yelsh brn 10YR6/2(dry), dusky yelsh brn 10YR2/2(wet), pt calc				
				C FR		Clst, mod yelsh brn 10YR5/4(dry), dk yelsh brn 10YR4/2(wet) mass, pt calc				
160	524.8					Clst, mod yelsh brn 10YR5/4(dry), dk yelsh brn 10YR4/2(wet) mass, pt calc				
				C FR		Clst, lt olv gry 5Y6/1(dry), dk yelsh brn 10YR4/2(wet), calc, Lig Tr 1%, Foss fish spine				
				C FR		Clst, lt olv gry 5Y6/1(dry), dk yelsh brn 10YR4/2(wet), calc, Lig Tr 1%, Foss fish spine				
				C FR		Clst, dk yelsh brn 10YR4/2(dry), dusky brn 5YR3/2(wet), parallel Jts set 5 to core axis, Lig Tr 1%, Foss fish scales				
165	541.2					Clst, dk yelsh brn 10YR4/2(dry), dusky brn 5YR3/2(wet), parallel Jts set 5 to core axis, Lig Tr 1%, Foss fish scales				
				C FR		OSh, pale yelsh brn 10YR6/2(dry), dusky yelsh brn 10YR2/2(wet), pt calc Lig Tr 3-5%, Foss fish scales				

1) Lithology

- sand
- clay

2) Consolidation

- isabritic soil
- diatomite
- claystone

3) Sediment type

- mudstone
- sandstone
- shale
- lignite

4) Degree of weathering

- UC unconsolidate
- SC semi-consolidate
- C consolidate

EXPLANATION

5) Sample type

- cutting
- core

6) Degree of weathering

- FR fresh
- SW slightly weathered
- MW moderately weathered
- NW highly weathered
- CW completely weathered

MR PONGSAK SRIPONGPHUN

GEOLOGY DEPARTMENT
GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 5
 DRILLHOLE NO DLY1-54-DALDRILLHOLE SIZE 3 inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II GROUND ELEVATION 259.734 m. GEOLOGIST(S): T. Aswin, K. Natthaporn, S. Pongsak (D1)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS					REMARKS
Meter	Feet						Density	γ-ray	% SHALE OIL			
								20	40	60	80	
170	552.7	C-FR	lig, grysh brn 5YR3/2 to blk			Clst, lt gry N7(dry), m gry N5(wet), pt sheared w/thn Lig, Foss fish scales						558.5'-565.5' pt sheared w/thn bd of Lig, Foss fish scales
175	574.0	C-FR	lig, blk, frac			Clst, lt brnsh gry 5Y6/1(dry), dusky yelsh brn 10YR2/2(wet), Foss fish scales						573.3'-576.0' calc 580.5'-582.5' calc 584.0'-588.7' Foss fish scales & lig 5-10%
180	590.4	C-FR	lig, blk			Clst, pale yelsh brn 10YR6/2(dry), dusky brn 5YR2/2						582.5'-586.0' calc 588.7'-596.0' sheared & Lig Tr 1%
185	606.8	C-FR				Clst, lt olv gry 5Y6/1(dry), gnsh gry 5GY6/1(wet), sheared						599.5'-602.6' Foss fish scales 602.6'-609.3' sheared & calc 609.3'-617.4' Lig Tr 1% & Foss fish scales
185	606.8	C-FR				OSH, grysn brn 5YR3/2(dry), brnsh blk 5YR2/1(wet)						
185	606.8	C-FR				Clst, lt olv gry 5Y6/1(dry), lt olv gry 5Y5/2(wet)						
185	606.8	C-FR				OSH, dk yelsh brn 10YR4/2(dry), grysh brn 5YR3/2(wet), Lig Tr 1% Foss fish scale						622.5'-623.2' Lig Tr 2% 646.0'-667.0' Lig Tr 1%
190	623.2	C-FR				Clst, pale yelsh brn 10YR6/2(dry), pale brn 5YR5/2(wet), sbvert Jt, Lig Tr 1%						
195	639.6	C-FR				Clst, pale olv 10Y6/2(dry), lt olv gry 5Y5/2						
195	639.6	C-FR				Clst, pale yelsh brn 10YR6/2(dry), mod brn 5YR3/4(wet), parallel Jts set 5 to core axis						
200	656.0	C-FR				OSH, dk yelsh brn 10YR3/2(dry), dusky yelsh brn 10YR2/2(wet), Lig 10%						
205	672.4	loss	lig, blk			OSH, grysn brn 5YR3/2, grysh blk 5YR2/1						
205	672.4	C-FR				Clst, yelsh gry 5Y8/1, gnsh gry 5Y6/1, frac						
205	672.4	loss				Clst, pale yelsh brn 10YR6/2, dk yelsh brn 10YR4/2, parallel Jts set 5 to core axis						
210	688.8	C-FR				Clst, pale yelsh brn 10YR6/2, dk yelsh brn 10YR4/2, Lig Tr 1% Foss fish scales						

1) Lithology sand clay	gravel interitic soil diatomite claystone	2) Consolidation UC unconsolidate SC semi-consolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 6
 DRILLHOLE NO DLY1-54-DR# DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II GROUND ELEVATION 259.734 m. GEOLOGIST (S) T. Aswin, K. Natthaporn, S. Pongsak (D1)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS					REMARKS	
Meter	Feet						Density	γ-ray	% SHALE OIL				
								2	4	4	8		
						Clst, pale yelsh brn 10YR6/2, dk yelsh brn 10YR4/2, Lig Tr 1% Foss fish scales							685.0'-702.0' parallel Jts set 5 to core axis, Lig Tr 1%, Foss fish scale
						Clst, pale yelsh brn 10YR6/2, dk yelsh brn 10YR4/2							702.0'-706.3' Lig Tr 1% & Foss fish scales
218	705.2					Clst, dk yelsh brn 10YR4/2, dusky brn 5YR2/2							
						Clst, lt olv gry 5Y6/1, olv gry 5Y4/1, Foss fish scales							767.3'-779.8' Lig Tr 1% & Foss fish scales
						Clst, pale yelsh brn 10YR6/2, dk yelsh brn 10YR4/2, parallel Jts set 5 to core axis, Lig Tr 1%							
220	721.6					Clst, lt olv gry 5Y6/1, olv gry 5Y4/1, fri w/thn lam of Lig							
						loss							
						Clst, mod yelsh brn 10YR5/4, dk yelsh brn 10YR4/2, fri							
						loss							
230	754.4					Clst, pale yelsh brn 10YR6/2, grysh brn 5YR3/2, parallel Jts set 5 to core axis, thn bd Lig lam							
						Lig, blk, frac							
235	770.8					Clst, dk yelsh brn 10YR2/2, grysh blk N2, Lig Tr 10%							
						Lig, blk, frac							
240	787.2					silty Mdst, lt gry N7, m gry N5, sft fri							
						Lig, blk, frac							
245	803.6					Clst, lt gry N7, olv gry 5Y6/1, Lig Tr 1%							
						OSh, lt brnsh gry 5YR6/1, dusky brn 5YR2/2, parallel Jts set 5 to core axis, Lig Tr 1%							
250	820.0					Lig, blk w/thn lam of Clst							
						silty Mdst, m gry N5, m blsh cry 5B5/1, sft							

1) Lithology sand clay gravel isleritic soil diatomite claystone mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE Longyear Hercules

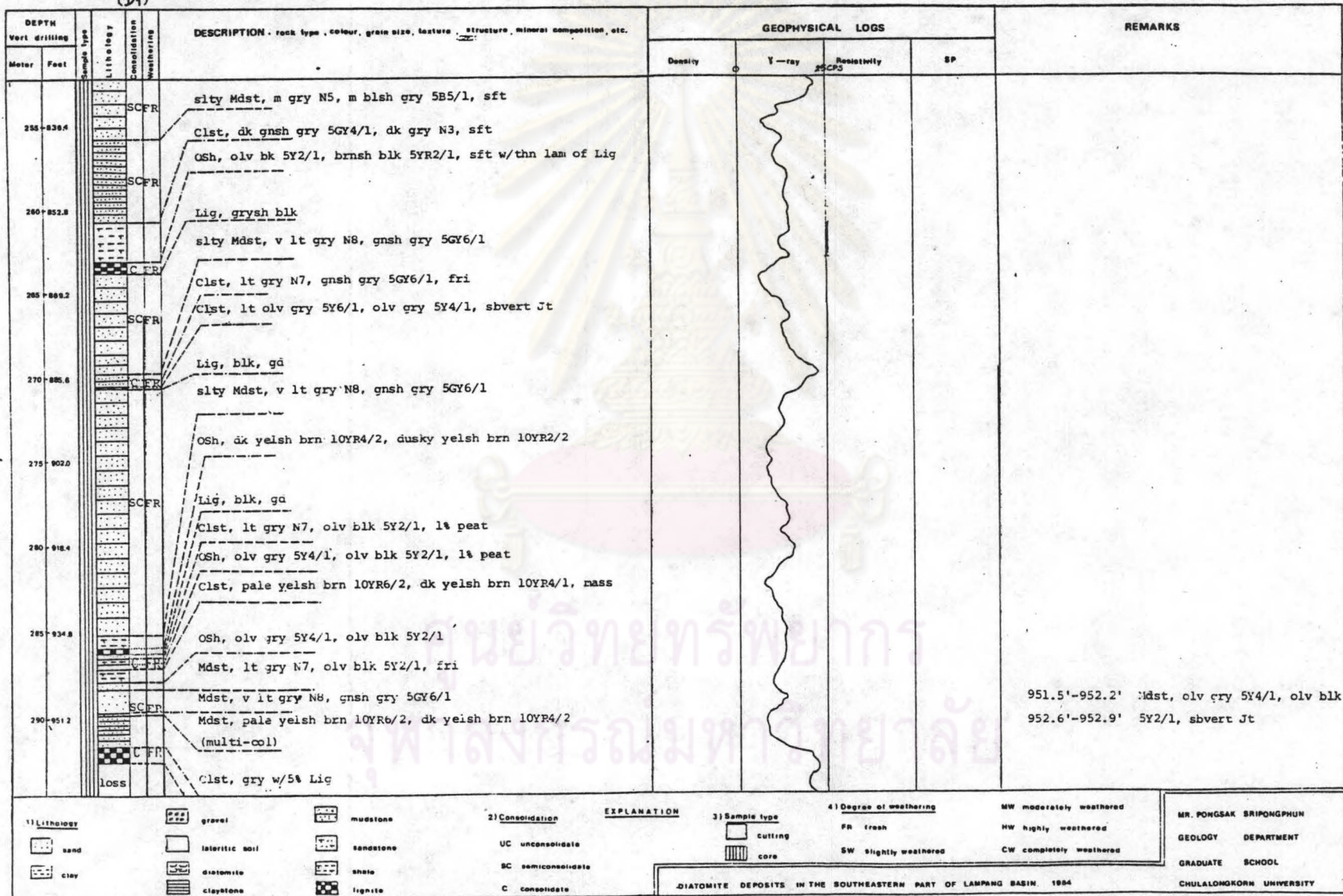
GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 7

DRILLHOLE NODLY1-54-DAL DRILLHOLE SIZE 3 inches (D1)

TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II

GROUND ELEVATION 259.734 m. GEOLOGIST (S): T. Aswin, K. Natthaporn, S. Pongsak



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GEOLOGY DEPARTMENT
GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 8
 DRILLHOLE NO DLY1-54-DAL DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II GROUND ELEVATION 259.734 m. GEOLOGIST(S): T. Aswin, K. Natthaporn, S. Pongsak (D1)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
Meter	Feet						Density	γ-ray	Resistivity	SP		
295-997.8			loss			Clst, gry w/5% Lig						
			SCFR			Lig, blk, gd						
300-994.8			loss			slty Mdst, v lt gry N8, gnsh gry 5GY6/1						
						slty Mdst, v .lt gry N8, gnsh. gry 5GY6/1						
305-1000.4												
			SCFR									
310-1016.8												
			SCFR			Mdst, v lt gry N8, gnsh gry 5GY6/1						
315-1033.2						Mdst, lt olv gry 5Y6/1(dry), olv gry 5Y4/1(wet), sbvert Jts						
320-1049.6												
			C SW									
325-1066.0												
330-1082.4												
335-1098.8												

1) Lithology	gravel	mudstone	2) Consolidation	3) Sample type	4) Degree of weathering	MW moderately weathered	MR PONGSAK SRIPONGPHUN
sand	lateritic soil	sandstone	UC unconsolidate	cutting	FR fresh	HW highly weathered	GEOLOGY DEPARTMENT
clay	diatomite	shale	SC semiconsolidate	core	SW slightly weathered	CW completely weathered	GRADUATE SCHOOL
	claystone	lignite	C consolidate				CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 23/9/81-9/10/81 NO 9
 DRILLHOLE NODLY1-54-DA1 DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,250 feet LOCATION 506062, 4845 II GROUND ELEVATION 259.734 m. GEOLOGIST (S): T. Aswin, K. Natthaporn, S. Pongsak (P1)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	γ-ray	SP	BP	
340	1115.2		C SW			Mdst, lt olv gry 5Y6/1, olv gry 5Y4/1, sbvert Jts					
345	1131.8		UCCW			Cl, pale brn 5YR5/2					
350	1148.0		loss			an In-thk gnsh gry calc Mdst w/Pyr Xls					
355	1164.4		UCCW			Cl, grysh rd 10R4/2(dry), dk rdsh brn 10R3/4(wet)					
360	1180.8		C MW			Sst, pale yelsh brn 10R5/4, mod brn 5YR4/4, v f gr					
365	1197.2		UCCW			Cl, pale brn 5YR5/2					
370	1213.6										
375	1230.0										

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div, D.M.R. DATE 23/9/81-9/10/81 NO 10

DRILLHOLE NODDY1-54-DR1 (D1)

DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,250 feet

LOCATION 506062, 4845 II

GROUND ELEVATION 259.734 m.

GEOLOGIST'S: T. Aswin, K. Natthaporn, S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	V-ray	Resistivity	SP	
380	1246.4			UC		Sst, v lt gry, v f gr					
385	1262.8										
390	1279.2										
395	1295.6										
400	1312.0										
405	1328.4										
410	1344.8										
415	1361.2										
420	1377.6										

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จุฬาลงกรณ์มหาวิทยาลัย

1) Lithology	gravel	mudstone	2) Consolidation	EXPLANATION	3) Sample type	4) Degree of weathering	MW moderately weathered	MR. PONGSAK SRIPONGPHUN
sand	lateritic soil	sandstone	UC unconsolidate		cutting	FR fresh	HW highly weathered	GEOLOGY DEPARTMENT
clay	diatomite	shale	SC semiconsolidate		core	SW slightly weathered	CW completely weathered	GRADUATE SCHOOL
	claystone	lignite	C consolidate					CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE
DRILLHOLE NO D 3

DRILL NO & TYPE diamond
DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 16/2/82-25/2/82 NO 1
TOTAL DEPTH 600' LOCATION 556087, 4845 II GROUND ELEVATION 273.500 m. GEOLOGIST'S: V. Tawayitibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	Porosity	Resistivity	SP	
0	0.4					Lat, mod rdsh brn 10R4/6 Cl, lt brn 5YR5/6, pale yelsh or 10YR8/6, v calc					
10	10.4					Cl, mod rdsh brn 10R4/6, mod brn 5YR4/4, v calc					
15	14.2					Cl w/f Sd & Slt, mod yelsh brn 10YR5/4, grysh or 10YR7/4, v calc					
20	20.4	000				Grv_Bd which have tr Sst as Mtrx w/CaCO ₃ as cmt Mat Cl w/f Sd & Slt, lt blsh gry 5B7/1, mod brn 5YR4/4, v calc					
25	22										
35	114.8										
45	147.6										
55	180.4										

- 1) Lithology
- sand
 - clay

- gravel
- lateritic soil
- diatomite
- slaystone

- mudstone
- sandstone
- shale
- lignite

- 2) Consolidation
- UC unconsolidate
 - SC semiconsolidate
 - C consolidate

EXPLANATION

- 3) Sample type
- cutting
 - core

- 4) Degree of weathering
- FR fresh
 - SW slightly weathered

- MW moderately weathered
- HW highly weathered
- CW completely weathered

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GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

GEOLOGIC DRILL CHART

PROJECT

DRILL NO & TYPE

DRILLER

DATE

NO 2

DRILLHOLE NO D3

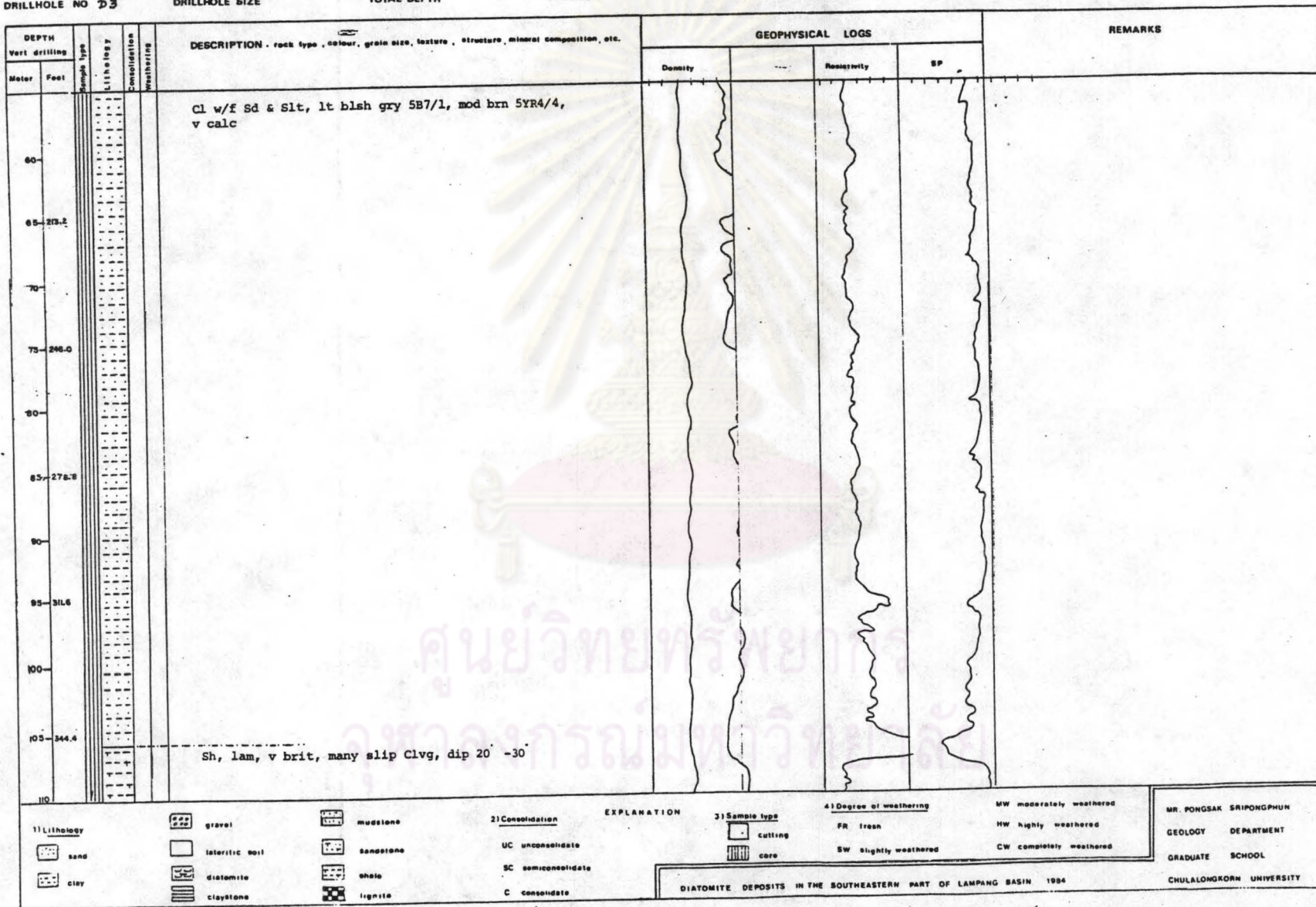
DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GROUND ELEVATION

GEOLOGIST (S)



1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

GEOLOGIC DRILL CHART

PROJECT: DRILL NO & TYPE: TOTAL DEPTH: LOCATION: GROUND ELEVATION: GEOLOGIST (S):
 DRILLHOLE NO D3 DRILLHOLE SIZE: DATE: NO 3

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS			REMARKS	
							Density	Resistivity	SP		
Motor	Foot										
			UC			Sd w/Cl (e ab) Sh, lam (e ab) Sd w/Cl (e ab) Sh, lam (e ab) OSh (v low grade), lt olv gry 5Y5/2, olv gry 5Y3/2 v brit, hkl frac, dip 20° -30°					
115	377.2										
120						Sh, lt olv gry 5Y5/2, lam, dip 20° -30° , w/Foss Gast along Bdg OSh (v low grade), lt olv gry 5Y5/2, dip 20° -30° , Foss Gast as spot along Bdg from 395'-422'7"					
125	40.0										
130						Cl & Sd, mod brn 5YR4/4 & 5YR3/4, lt brn 5YR6/4, pale bl 5PB7/2, Sd: f to mod Sd, wl srt, sbrndd w/Mod of Sh, calc					
135	424.4										
140											
145	475.6		SC								
150											
155	508.4										
160											
165	551.2										

1) Lithology
 sand
 clay

gravel
 lateritic soil
 diatomite
 claystone

mudstone
 sandstone
 shale
 lignite

2) Consolidation
 UC unconsolidate
 SC semiconsolidate
 C Consolidate

EXPLANATION

3) Sample type
 cutting
 core

4) Degree of weathering

FR fresh
 SW slightly weathered

MW moderately weathered

HW highly weathered
 CW completely weathered

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 GRADUATE SCHOOL
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

GEOLOGIC DRILL CHART

PROJECT: DRILL NO & TYPE: DRILLER: DATE: NO 4
 DRILLHOLE NO D3 DRILLHOLE SIZE: TOTAL DEPTH: LOCATION: GROUND ELEVATION: GEOLOGIST (S):

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
							Density	γ	Resistivity	SP		
Meter	Foot											
						Cl & Sd, mod brn 5YR4/4 & 5YR3/4, lt brn 5YR6/4, pale bl 5PB7/2, Sd: f to mod Sd, wl srt, sbrndd w/Nod of Sh, calc						
170						Sd w/Cl, mod brn 5YR4/4, Sd: f to mod Sd, wl srt, sbrndd, v calc						
175	574.0			SC								
180				SC		Cl w/Sd w/some Pbl, mod brn 5YR4/4, crs to f Sd, Pbl of Qtz & Qtzt						
185	606.8											

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE diamond

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 5/3/82-7/3/82 NO 1

DRILLHOLE NO D-4

DRILLHOLE SIZE 3"

TOTAL DEPTH 200'

LOCATION 560110 4845 II

GROUND ELEVATION 310.976 m. GEOLOGIST (S) S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling							Density	Y-ray	Resistivity	SP	
Meter	Feet										
5	16.4					Top soil & Cl, brn Sd, m Qtz gr, sbang w/ some Cl, lt gry Sd & Cl w/ Pbl, brn, sbang Cl, lt yelsh brn					
10						Three cyclic repetitions having a sequential order of Sltst & Clst, lt yelsh brn, brn					
15	49.2										
20											
25	82										
30											
35	114.8										
40						Sltst, lt gnsh gry					
45	147.6										
50											
55	180.4										

EXPLANATION	
1) Lithology	2) Consolidation
<ul style="list-style-type: none"> sand clay gravel lateritic soil diatomite claystone mudstone sandstone shale lignite 	<ul style="list-style-type: none"> UC unconsolidate SC semiconsolidate C consolidate
3) Sample type	4) Degree of weathering
<ul style="list-style-type: none"> cutting core 	<ul style="list-style-type: none"> FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered

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CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT

DRILL NO & TYPE

GEOLOGIC

DRILL CHART

DRILLER

DATE

NO 2

DRILLHOLE NO D 4

DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GROUND ELEVATION

GEOLOGIST (S)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling							Density	γ-ray	Resistivity	SP	
Meter	Feet										
						sltst, lt gnsh gry					
80-											
65-	213.2										

1) Lithology	gravel	mudstone	2) Consolidation	EXPLANATION	3) Sample type	4) Degree of weathering	MW moderately weathered	MR. PONGSAK SRIPONGPHUN
sand	lateritic soil	sandstone	UC unconsolidate	cutting	core	FR fresh	MW highly weathered	GEOLOGY DEPARTMENT
clay	diatomite	shale	SC semiconsolidate			SW slightly weathered	CW completely weathered	GRADUATE SCHOOL
	claystone	lignite	C consolidate					CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE

DRILL NO & TYPE diamond

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 19/3/82-21/3/82 NO 1

DRILLHOLE NO D 6

DRILLHOLE SIZE 3"

TOTAL DEPTH 200'

LOCATION 550120 4845 II

GROUND ELEVATION 345.698 m. GEOLOGIST S. S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
Vert drilling							Density	Y-ray	Resistivity	SP		
Meter	Feet											
						Top soil w/ Qtz Pbl & Cl, brn						
						Cl, brn						
5-6.4						diatomaceous Cl, bu, lt rdsh brn w/ some Fe oxide						
10												
15-49.2												
						Osh, blksh gn						
20						Mdst, lt gr, Foss fish & peat						
25-62												
						Osh, brn						
						Mdst, lt gn						
						carb Sh						
30						Mdst, lt gn, @ 162'-165' rd mott Mdst						
35-14.8												
40												
45-47.5												
50												
55-180.4												

1) Lithology sand clay	isaltic soil diatomite claystone	gravel mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

ศูนย์วิทยากร
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PROJECT DRILL NO & TYPE **GEOLOGIC DRILL CHART** DRILLER DATE NO 2
 DRILLHOLE NO D 6 DRILLHOLE SIZE TOTAL DEPTH LOCATION GROUND ELEVATION GEOLOGIST (S)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling							Density	γ-ray	Resistivity	SP	
Meter	Feet										
60						Mdst, lt gn, @ 162'-165' rd mott Mdst					
65	213.2										

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering PR fresh SW slightly weathered MW moderately weathered NW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE diamond

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 27/3/82-5/4/82 NO 1

DRILLHOLE NO D 7

DRILLHOLE SIZE 3"

TOTAL DEPTH 350'

LOCATION 560120 4845 II

GROUND ELEVATION 315.304 m. GEOLOGIST'S S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Foot						Density	γ-ray	Resistivity	SP	
5	15.4					Cl & Pbl, lt brn cl sd, yelsh gry (5Y8/1), (5Y7/2), grysh or (10YR7/4), w/ Ls Pbl are present @ 13'-50', 60'-91'					
10											
15	49.2										
20											
25	82										
30											
35	114.6					Grv Bd, milk, blk, lt gn, Dia of Grv 1 cm to ≥ 20 cm, sbrndd to rndd					
40											
45	147.8										
50											
55	180.4					Mdst, pale olv (10Y6/2) dry, grysh olv (10Y4/2) wet,					

1) Lithology

- sand
- clay

- gravel
- lateritic soil
- diatomite
- claystone

- mudstone
- sandstone
- shale
- lignite

2) Consolidation

- UC unconsolidate
- SC semiconsolidate
- C consolidate

EXPLANATION

3) Sample type

- cutting
- core

4) Degree of weathering

- FR fresh
- SW slightly weathered

MW moderately weathered

- MW highly weathered
- CW completely weathered

MR PONGSAK SRIPONGPHUN

GEOLOGY DEPARTMENT

GRADUATE SCHOOL

GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 2
 DRILLHOLE NO D 7 DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
							Density	γ-ray	Resistivity	SP	
Meter	Feet										
60						Mdst, pale olv (10Y6/2) dry, grysh olv (10Y4/2) wet, @ 177', dk gn Lam @ 187', Pyr @ 225'-235', shear plane & Frag of peat					
65	213.2										
70											
75	246.0										
80											
85	278.8										
90											
95	311.6										
100											
105	344.4										
110											

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE diamond

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 10/4/82-15/4/82 NO 1

DRILLHOLE NO D 8

DRILLHOLE SIZE 3"

TOTAL DEPTH 350'

LOCATION 555120 4845 II

GROUND ELEVATION 310.156 m. GEOLOGIST S. S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	γ-ray	Resistivity	SP	
5	16.4					Sd, dk yelsh or (10YR6/6), calc Cl, creamy, gen Fe oxide stn, @ 17' gn mott Cl & Gyp (Selenite)					
10						diatomaceous Cl, wh, bu lt yelsh brn, w/ some Fe oxide stn, & a one-foot creamy Cl Lyr @ 22'-23', @ 22'-23' & 36'-37' gn mott Cl					
15	49.2										
20						Osh, olv gry 5Y3/2, fis, lt weighted Clst, lt olv gry (5Y5/2), @ 63'-65' Osh w/ gsy shear plane @ 85' gsy shear plane, @ 65'-227' gen found Foss of fish & peat					
25	82										
30											
35	114.8										
40											
45	147.6										
50											
55	180.4										

1) Lithology

- sand
- clay

- gravel
- lateritic soil
- diatomite
- claystone

- mudstone
- sandstone
- shale
- lignite

2) Consolidation

- UC unconsolidate
- SC semiconsolidate
- C consolidate

EXPLANATION

3) Sample type

- cutting
- core

4) Degree of weathering

- FR fresh
- SW slightly weathered
- MW moderately weathered
- HW highly weathered
- CW completely weathered

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GEOLOGY DEPARTMENT
GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 2
 DRILLHOLE NO D 8 DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
							Density	γ-ray	Resistivity	SP	
60						Clst, lt olv gry (5Y5/2), @ 63'-65' OSh w/ gsy shear plane @ 85' gsy shear plane, @ 65'-227' gen found Foss of fish & peat					
65	213.2										
70						OSh, olv gry. (5Y3/2) when wet w/ Lig ≈ 30%					
75	246.0					slty cl, lt olv gn (5Y5/2), (5G6/1), olv blk (5Y2/1) when wet, gen found Frag of peat					
80											
85	278.8					Slstst, (5G6/1) wet, @ 337'-345' brn mott slstst, @ 296' pyrite					
90											
95	311.6										
100											
105	344.4										
110											

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT DIATOMITE

DRILL NO & TYPE diamond

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 21/4/82-4/5/82 NO 1

DRILLHOLE NO D 9

DRILLHOLE SIZE 3"

TOTAL DEPTH 350'

LOCATION 570110 4645 II

GROUND ELEVATION 298.87 m. GEOLOGIST (S) P. Visak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
Vert drilling							Density	γ-ray	Resistivity	SP		
Meter	Feet											
						Top soil, m gry N5 to dk gry N3						
5	16.4					Cl, dk yelsh or 10YR6/6, m rd 5R4/6, Ls Frag, @ 18'± satin spar						
10						Sltst, grysh or 10YR7/4, dk yelsh or 10YR6/6						
15	49.2					Cl, pale yelsh or 10YR8/6, dk yelsh or 10YR6/6, m gry N5 @ 43'-45' hi calc						
20												
25	82					Sltst, lt gry N7, silly calc						
30						Cl, dk yelsh or 10YR6/6, lt gry N7						
35	114.8					silty Cl, lt gry N7 w/ satin spar @ 126'5"-126'7", 127'-127'3", Sltst @ 126'7"-127'						
40						Clst, lt gry N7, pale purp (7P6/2), dk gnsh gry 5GY4/1						
45	147.6					Sltst, dk gnsh gry (5GY4/1)						
60						Clst, v pale or 10YR8/2, dk yelsh or 10YR6/6, silly calc						
55	180.6											

1) Lithology sand clay gravel interstic soil diatomite claystone mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUM GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT

DRILL NO & TYPE

GEOLOGIC DRILL CHART

DRILLER

DATE

NO 2

DRILLHOLE NO D 9

DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GROUND ELEVATION

GEOLOGIST (S)

DEPTH Vert drilling		Sample type Lithology Consolidation Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet			Density	γ-ray	Resistivity	SP	
60			Clst, v pale or 10YR8/2, dk yelsh or 10YR6/6, silly calc					
65	213.2							
70								
75	246.0							
80								
85	278.8							
90			LS, m dk gry N4					
95	311.8							
100			Clst, lt gry N4					
105			LS, m dk gry N4					
105	344.4		Clst, lt gry N7					
110								

Lithology		EXPLANATION		Sample type		Degree of weathering	
	sand		mudstone		cutting		FR fresh
	clay		sandstone		core		SW slightly weathered
	lateritic soil		shale				MW moderately weathered
	diatomite		lignite				HW highly weathered
	claystone						CW completely weathered
	gravel		UC unconsolidate				
			SC semiconsolidate				
			C consolidate				

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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 1
 DRILLHOLE NO DAK6-100- DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m. GEOLOGIST'S Valai Tawaytibhorz
 OSH176 (D-ID).

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	γ-ray	Resistivity	SP	
						Lat, Qtz & Fe oxide gr w/Cl, pale yelsh or 10YR8/6 w/ v pale or 10YR8/2 spt of Cl					
5	16.4					Sd, f to v f w/Cl & Grv intbd, dk yelsh or 10YR6/6 to mod yelsh brn 10YR5/4, calc w/Brec of CaCO ₃ Mat @ depth 42' (grysh or pk 10R8/2)					
15	49.2										
20	65.6										
28	82					Lat (@ ab)					
30	98.4					Sd w/Grv of Qtz & Qtzt (@ ab)					
38	114.8										
40	131.2					Cl w/Ls Frag from 186'-196', mod yelsh brn 10YR5/4 to mod brn 5YR4/4, lsh wh 5B9/1 (Ls)					

1) Lithology sand clay	gravel sterile soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 2

DRILLHOLE NO DAK6-100-

DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,500 feet

LOCATION 529087, 4845 II

GROUND ELEVATION 269.322 m

GEOLOGIST (S) Valai Tawaytibhong

OSH176 (D.10)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling							Density	γ-ray	Resistivity	SP	
Motor	Feet										
	45-47.8										
	50-104.0										
	55-180.4										
	60-196.8					Sd w/sm Grv @ depth 206' & 234'-236'					
						Sd: f to crs Gr, sbrnd, wl srt					
						Ls Frag @ depth 209', blksh wh 5B9/1					
	65-213.2				UC						
	70-228.6										
	75-246.0					Sd & Cl, yelsh gry 5Y7/2 w/Ls Frag @ 248' w/Grv Bd @ 273'4"-276', lt brn 5YR6/4, size of Grv 2" to v crs Sd					236'-282' Grv = Qt ₃ & Qt ₃ t, blk, wh & gry
	80-262.4				UC						

1) Lithology

sand
clay

gravel
lateritic soil
diatomite
claystone

mudstone
sandstone
shale
lignite

2) Consolidation
UC unconsolidate
SC semiconsolidate
C consolidate

EXPLANATION

3) Sample type
cutting
core

4) Degree of weathering

FR fresh
SW slightly weathered

5) Degree of weathering

MW moderately weathered
HW highly weathered
CW completely weathered

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PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 3
 DRILLHOLE NO DAK6-100 - DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m. GEOLOGIST'S: Valai Tawaytibhong
 OSH176 (D10)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Foot						Density	γ-ray	Resistivity	SP	
85-278.8						Cl & Grv, dusky yel gn 5GY5/2					282'-283'8" Grv = Qt. & Qt t, wh to v dk rd 5R2/6 to blk
90-285.2						Cl & Sd, mod or pk 5YR8/4, grysh olv 10Y4/2, w/Ls Frag, grysh olv 10Y4/2 & Grv of Qt. & Qt.t, wh, dk gry & gry, Col of this Sd v vary from lt to dk Col					
95-311.6											
100-328.0						Sd w/Cl, gry olv 10Y4/2 (@ ab)					
105-344.4											
110-360.8						Cl w/Sd, gry olv 10Y4/2					366'-369' more Cl than Sd
115-377.2						Sd w/Cl, gry olv 10Y4/2, lt olv gry 5Y5/2					369'-580' more Sd than Cl
120-393.6											
125-410.0											

1) Lithology sand clay gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate mudstone sandstone shale igneite	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUM GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 4
 DRILLHOLE NO DAK61004 DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II. GROUND ELEVATION 269.322 m. GEOLOGIST'S Valai Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	γ-ray	Resistivity	SP	
130	426.4					Sd w/Cl, gry olv 10Y4/2, lt olv gry 5Y5/2					
135	442.8										
140	459.2										
145	475.6			UC							
150	492.0										
155	508.4										
160	524.8										
165	541.2										

ศูนย์วิทยุทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

1) Lithology sand clay gravel lateritic soil diatomite claystone mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 5
 DRILLHOLE NO DAK6-100- OSH176(D10) DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m. GEOLOGIST (S) Valai Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling							Density	γ-ray	Resistivity	SP	
Meter	Feet										
170	557.7										
175	574.0										
180	590.4					Mst, lt olv gry 5Y5/2, dusky yel gn 5GY5/2, some Tr of lam from gradational Bdg of Slt & sd, dip 30 -45 , many slip Clvg, w/ Foss Plt & insect					
185	606.8										
190	623.2			C							
195	639.6										
200	656.0										
205	672.4										
210	688.8										

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN. 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 6
 DRILLHOLE NO DAK6-100- DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m. GEOLOGIST'S Valai Tawaytibhong
 OSH176 (DIO)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Foot						Density	γ-ray	Resistivity	SP	
215-705.2						Mdst, lt olv gry 5Y5/2, dusky yel gn 5GY5/2, some Tr of lam from gradational Bdg of Slt & Sd, dip 30-45, many slip Clvg, w/ Foss Pit & insect					
220-721.6											
225-738.0											
230-754.4											
235-770.8											
240-787.2											
245-803.6											
250-820.0						Sh (v low grade OSH), grysh olv gn 5GY3/2, olv gry 5Y4/1, lam dip 30-45					

1) Lithology sand clay diatomite claystone gravel lateritic soil mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUM GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 7

DRILLHOLE NO DAK6-100-OSH176 (D10)

DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,500 feet

LOCATION 529087, 4845 II.

GROUND ELEVATION 269.322 m. GEOLOGIST(S) Valai Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	γ-ray	Resistivity	SP	
255	836.4					Sh (v low grade OSH), grysh olv gn 5GY3/2, olv gry 5Y4/1, lam dip 30 -45					
260	852.8										
265	869.2										
270	885.6										
275	902.0										
280	918.4										
285	934.8					Sst, lt olv gry 5Y6/1 m Gr, sbrnd, wl srt, v wl Qnt Sh (v low grade OSH), grysh olv gn 5GY3/2, olv gry 5Y4/1, lam, dip 30 Sst (@ ab) OSh (low grade), dk gnsh gry 5GY4/1, v brit along Bdg, dip 30 intbd w/Sst at depth 938'7"-940'					
290	951.2					Sh, dk gnsh gry 5GY4/1, olv gry 5Y4/1, lam, v brit, many slip Clvg, dip 0 -10					

1) Lithology

- sand
- clay

2) Consolidation

- UC unconsolidate
- SC semiconsolidate
- C consolidate

- gravel
- lateritic soil
- diatomite
- claystone

- mudstone
- sandstone
- shale
- lignite

- cutting
- core

EXPLANATION

3) Sample type

- cutting
- core

4) Degree of weathering

- FR fresh
- SW slightly weathered

- MW moderately weathered
- HW highly weathered
- CW completely weathered

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PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 8

DRILLHOLE NO DAK6-100- DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m. GEOLOGIST'S: Valai Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
Vert drilling							Density	γ-ray	Resistivity	SP		
Motor	Feet											
	295-887.8					Sh, dk gnsh gry 5GY4/1, olv gry 5Y4/1, lam, v brit, many slip Clvg, dip 0 -10 Cl, dk gnsh gry 5GY4/1, Foss Plt which look peat						
	300-894.0											
	305-1000.4					Sh (@ ab) OSh (low grade), olv gry 5Y4/1, v brit, w/slip Clvg, dip 0 - 10 w/Foss Plt and fish, intbd w/Cl (sc) @ depth 993'-994'						
	310-1016.8											
	315-1033.2											
	320-1049.6					Cl (sc), olv gry 5Y4/1, intbd w/Sh & Lig @ depth 1,047' OSh (low grade), olv gry 5Y4/1 (@ ab) Lig, blk, v brit, Wd Tex Cl intbd w/ f Sd to Slt, lt blsh gry 5B7/1, calc						
	325-1066.0											
	330-1082.4											
	335-1098.8					Lig Cl (@ ab)						

1) Lithology

	sand		clay		gravel		mudstone		sandstone		shale		claystone		lignite
	diatomite		interitic soil												

2) Consolidation

UC	unconsolidate	SC	semiconsolidate	C	consolidate
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EXPLANATION

3) Sample type

	cutting		core
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4) Degree of weathering

FR	fresh	MW	moderately weathered
SW	slightly weathered	NW	highly weathered
		CW	completely weathered

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PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 9
 DRILLHOLE NO DAK6-100- DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m GEOLOGIST'S Valai Tawaytibhong
 OSH176 (DIO)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet						Density	Y-ray	Resistivity	SP	
						Cl (@ ab)					
340	1115.2										
						SC					
345	1131.8										
						OSh (low grade), olv gry 5Y4/1 lam, mand Sd intbd (lt olv gry 5Y5/2), v brit along Bdg plane, many slip Clvg dip 20 -30 , w/Foss Plt & fish @ depth 1,150'					
350	1148.0					Sh, gnsh gry 5GY6/1, lam, microfold, dip 20 -30 , Foss peat & fish					
						OSh, low grade(@ ab)					
355	1164.4										
						Sh, lt olv gry 5Y6/1, lam, hkl Frac, dip 20 -30 , slip Clvg, Foss Plt (as sml hen of Lig) & fish					
360	1180.8										
						Lig (@ ab)					
						Sh, lam (@ ab)					
365	1197.2					Lig (@ ab)					
						Cl w/Sd, m lt gry N6, pale brn 5YR5/2, calc					
						SC					
370	1213.6					Cl					
						SC					
375	1230.0					Cl w/some f Sd & Slt, lt bish gry 5B7/1, dk yelsh brn 10YR4/2, calc (especially from depth 1,243'10"-1,259')					
						SC					

1) Lithology

sand
clay

gravel
lateritic soil
diatomite
claystone

mudstone
sandstone
shale
lignite

2) Consolidation

UC unconsolidate
SC semiconsolidate
C consolidate

EXPLANATION

3) Sample type

cutting
core

4) Degree of weathering

FR fresh
SW slightly weathered

MW moderately weathered

NW highly weathered
CW completely weathered

MR. PONGSAK SRIPONGPHUM

GEOLOGY DEPARTMENT

GRADUATE SCHOOL

CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE DRILL NO & TYPE Longyear - Hercules **GEOLOGIC DRILL CHART** DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 10
 DRILLHOLE NO DAK6-100- OSH176(Dio) DRILLHOLE SIZE 3 inches TOTAL DEPTH 1,500 feet LOCATION 529087, 4845 II GROUND ELEVATION 269.322 m GEOLOGIST'S Valai Tawaytibhong

DEPTH		Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Feet					Density	γ-ray	Resistivity	SP	
380-1248.4					Cl w/some f Sd & Slt, lt blsh gry 5B7/1, dk yeish brn 10YR4/2, calc (especially from depth 1,243'10"-1,259')					
385-1262.8										
390-1276.2										
395-1290.6										
400-1312.0					Mdst, lt blsh gry 5B7/1, hkl Frac, calc					
405-1328.4					OSh (low grade), lam, hkl Frac, dip 20 -30 ,calc Lig (@ ab)					
410-1344.8					Mdst, gnsh gry 5GY6/1, calc					
415-1361.2					Sh, lam intbd w/low grade OSH, olv gry 5Y4/1, many slip Clvg, dip 20 -30 OSh (low grade @ ab Lig @ ab Sh, lam, @ ab					
420-1377.6					OSh (low grade @ ab Sh, lam, @ ab					

1) Lithology sand clay diatomite claystone	gravel lenticular soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION cutting core	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE Longyear - Hercules

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 8/2/82-1/3/82 NO 11

DRILLHOLE NO DAK6-100-OSH176(D10)

DRILLHOLE SIZE 3 inches

TOTAL DEPTH 1,500 feet

LOCATION 529087, 4845 II

GROUND ELEVATION 269.322 m. GEOLOGIST'S Valai Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Meter	Foot						Density	Y-ray	Resistivity	SP	
425-1394.0						Sh, lam, @ ab OSH (low grade) intbd w/Sh, lam (from 1,387'2"-1,395') dip 20 -30 ,w/Foss Plt & fish					
430-1410.4						Mst w/v f Sd & Slt, lt olv gry 5Y6/1, calc					
435-1426.8											
440-1443.2											
445-1459.6						Mst, intbd w/Sltst, grysh gn 5G5/2, calc					
450-1476.0											
455-1492.4						OSH (low grade), dip 20 -30 , @ ab					
455-1492.4						Sh, lt olv gry 5Y5/2, lam, dip 20 -30 OSH (low grade), dk yelsh brn 10YR4/2, lam, dip 20 -30 Foss Plt & fish & Pyr					
1500		SC				Mst w/Sltst intbd, gmsh gry 5GY6/1					
480-1508.8											

1) Lithology

- sand
- clay

2) Consolidation

- UC unconsolidate
- SC semiconsolidate
- C consolidate

3) Sample type

- cutting
- core

4) Degree of weathering

- MW moderately weathered
- HW highly weathered
- CW completely weathered

EXPLANATION

gravel	mudstone	sandstone	shale	lignite
lateritic soil	diatomite	claystone		

MR PONGSAK SRIPONGPHUM
GEOLOGY DEPARTMENT
GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

PROJECT DIATOMITE
 DRILLHOLE NO D 11

DRILL NO & TYPE diamond
 DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Engineering Div. D.M.R. DATE 9/3/82 - 21/3/82 NO 1
 TOTAL DEPTH 1,400' LOCATION 465102, 4845 II GROUND ELEVATION 264.500 m. GEOLOGIST (S. V. Tawaytibhong

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS		REMARKS
Meter	Feet						Density	Resistivity	
						Top soil, Lat, Sd, Grv & org Mat, mod rdsh brn 10R4/6			
5	16.4					diatomite, wh N9, v brit w/Fe oxides impurity which show by dk yelsh or 10YR6/6			
						diatomaceous Cl, v lt gry N8-8, v brit, w/Fe oxides @ ab			
15	49.2					Mdst, gnsh gry 5GY6/1, v brit w/Fe oxides along Ptg Surf			
25	82					Lig, blk, v brit			
						carb Mdst, olv gry 5Y3/2, calc, w/Foss Plt & fish			
						Mdst, lt olv gry 5Y6/1, calc			
35	114.8					Lig, blk, v brit			
						Mdst, grysh gn 10GY5/2, many slip Clvg			
45	147.6			SC		f Sd & Slt, dk yelsh or 10YR6/6 Mdst, gnsh gry 5G6/1			
50				SC		f Sd & Slt, gnsh gry 5GY6/1 Mdst, gnsh gry 5G6/1, intbd w/Lig from 168'-169' Lig, blk, v brit			
55	180.4					Mdst, pale olv 10Y6/2, w/many slip Clvg, v brit			

EXPLANATION	
1) Lithology	2) Consolidation
<ul style="list-style-type: none"> gravel sand clay lateritic soil diatomite claystone mudstone sandstone shale lignite 	<ul style="list-style-type: none"> UC unconsolidate SC semiconsolidate C consolidate
3) Sample type	4) Degree of weathering
<ul style="list-style-type: none"> cutting core 	<ul style="list-style-type: none"> MW moderately weathered FR fresh SW slightly weathered CW completely weathered NW highly weathered

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

MR. PONGSAK SRIPONGPHUN
 GEOLOGY DEPARTMENT
 GRADUATE SCHOOL
 CHULALONGKORN UNIVERSITY

GEOLOGIC DRILL CHART

PROJECT

DRILL NO & TYPE

DRILLER

DATE

NO 2.

DRILLHOLE NO D11

DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GROUND ELEVATION

GEOLOGIST (S)

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS		REMARKS
							Density	Resistivity	
Meter	Foot								
						Mdst, pale olv 10Y6/2, w/many slip Clvg, v brit			
60						Sh, pale olv 10Y6/2, grysh olv 10Y4/2, many slip Clvg, dip nearly hor, Foss Plt & fish & from 239'-258' Gast			
66	213.2								
70									
75	246.0								
80									
85	278.8					Mdst w/f Sd & Slt intbd, 5GY6/1			
						OSh (low grade), olv blk 5Y2/1, v brit, Foss Plt & fish			
						Mdst w/f Sd (from 291'6"-293'), gnsh gry 5GY6/1, Foss Plt			
						OSh (low grade) @ ab			
						Mdst intbd w/Sst, olv gry 5Y4/1, v calc & Lig from 302'6"-303'			
95	314.6					Cl, olv gry 5Y4/1, mod rdsh brn 10R4/6, m blsh gry 5B5/1, many slip Clvg, v brit, calc			
100									
105	346.4								
110						Sltst, m blsh gry 5B5/1, calc			

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 3
 DRILLHOLE NO D11 DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS		REMARKS
							Density	Resistivity	
115	377.2		-	-	-	Sltst, m blsh gry 5B5/1, calc			
120			-	-	-	Cl, gnsh gry 5GY6/1, grysh rd 10R4/2, many slip Clvg, calc			
125	40.0		-	-	-	Sd, gnsh gry 5GY6/1, f to crs Gr, Qtz:wh, sbrnrd, wl srt, poor Cmt CaCO ₃ as cmt Mat			
130			-	-	-	Cl @ ab			
135	442.8		-	-	-				
140			-	-	-				
145	475.6		-	-	-				
150			-	-	-				
155	508.4		-	-	-				
160			-	-	-	Sd @ ab			
165	541.2		-	-	-				

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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PROJECT
DRILLHOLE NO D11

DRILL NO & TYPE
DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GEOLOGIC DRILL CHART

DRILLER

DATE

NO 4

GROUND ELEVATION

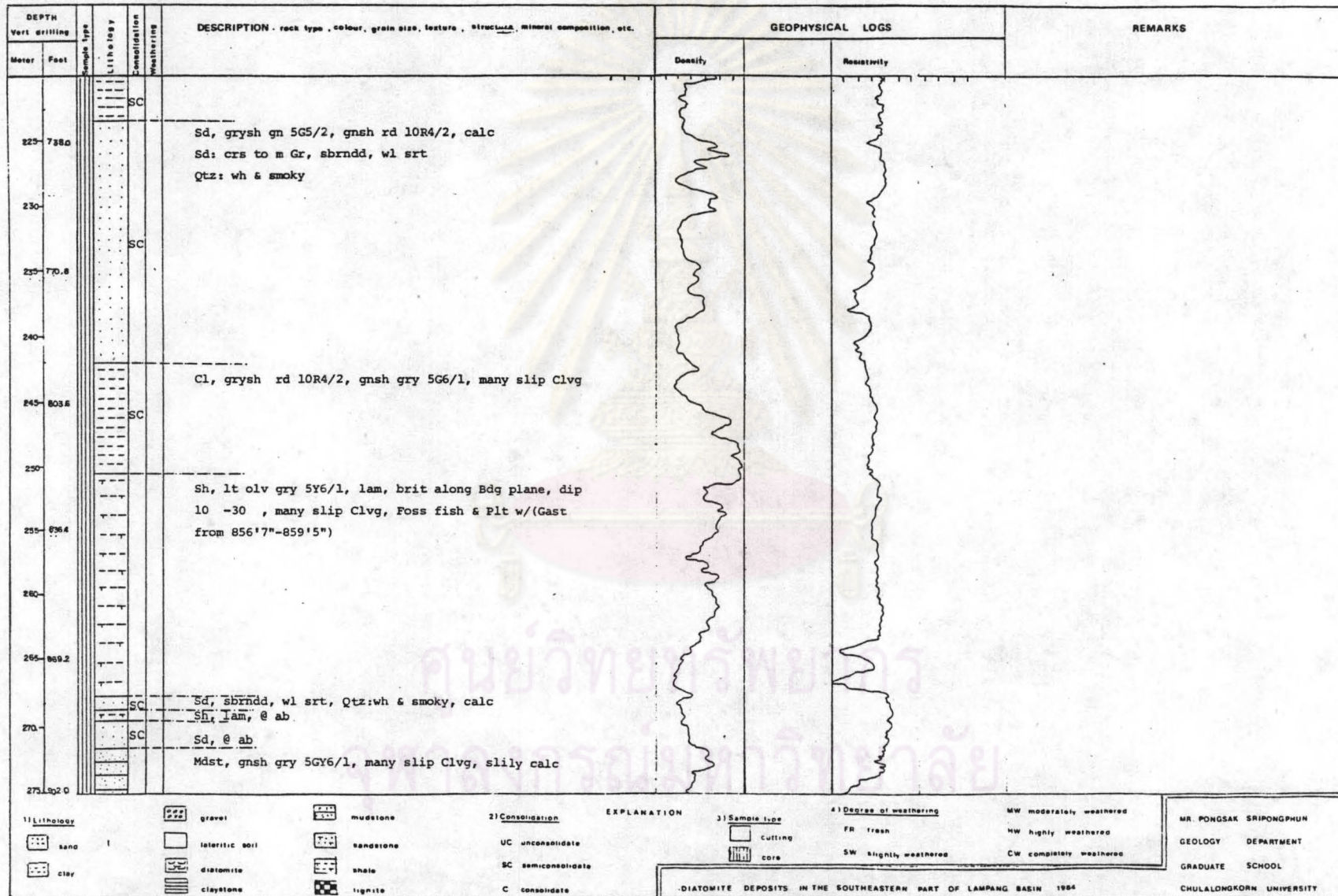
GEOLOGIST(S)

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS		REMARKS
Meter	Feet						Density	Resistivity	
170				SC		Sd @ ab			
170	574.0			SC		Cl & from 575'-599' v f to f Sd intbd, lt blsh gry 5B7/1, grysh rd 10R4/2			
185	608.8			SC		Cl @ ab			
195	639.6			SC		Sd, grysh gn 10GY5/2, Qtz:wh, smoky, sbrndd, wl srt, poor Cmt, calc Cl @ ab			
205	672.4			SC					
210				SC		Sd @ ab			
215				SC		Cl @ ab			
215	705.2			SC		Sd & slit @ ab			
220						Cl, dusky yel gn 5GY5/2, many slip Clvg			

1 Lithology sand clay	gravel lateritic soil diatomite claystone	2 Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3 Sample type cutting core	4 Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 5
 DRILLHOLE NO D II _____ DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____



PROJECT

DRILL NO & TYPE

GEOLOGIC DRILL CHART

DRILLER

DATE

NO 6

DRILLHOLE NO D11

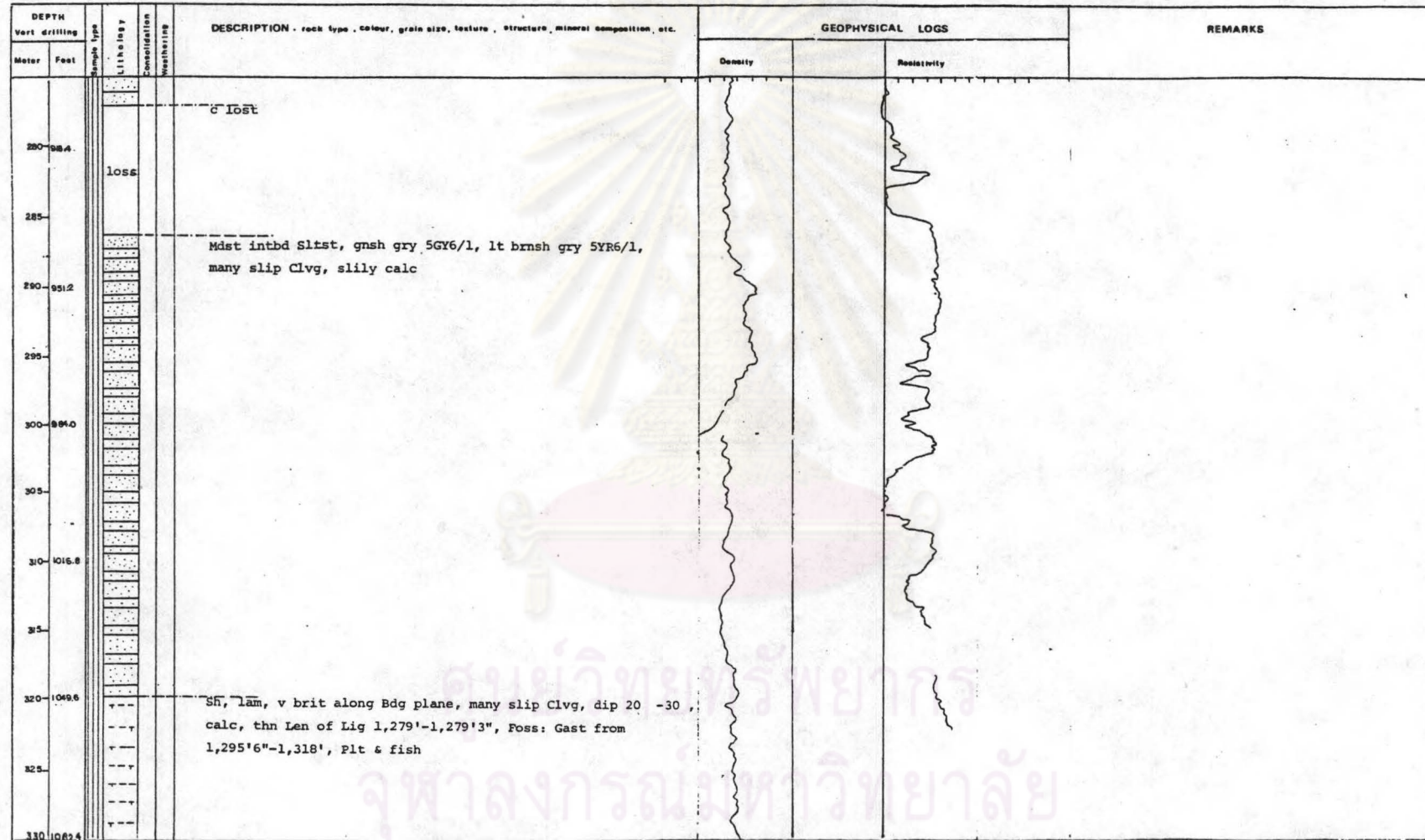
DRILLHOLE SIZE

TOTAL DEPTH

LOCATION

GROUND ELEVATION

GEOLOGIST (S)



1) Lithology

- sand
- clay

- gravel
- lateritic soil
- diatomite
- claystone

- mudstone
- sandstone
- shale
- lignite

2) Consolidation

- UC unconsolidate
- SC semiconsolidate
- C consolidate

EXPLANATION

3) Sample type

- cutting
- core

4) Degree of weathering

- FR fresh
- SW slightly weathered

MW moderately weathered

- MW highly weathered
- CW completely weathered

MR. PONGSAK SRIPONGPHUN

GEOLOGY DEPARTMENT

GRADUATE SCHOOL

CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____
 DRILLHOLE NO DII _____ DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____ NO 7

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS		REMARKS
							Density	Resistivity	
Meter	Feet								
335	1098.8					Sh, lam, v brit along Bdg plane, many slip Clvg, dip 20 -30 , calc, thn Len of Lig 1,279'-1,279'3", Foss: Gast from 1,295'6"-1,318', Plt & fish			
340									
348	1131.5								
350									
355	1164.4								
360									
365	1197.2								
370									
375	1230.0								
380									
385	1262.8								

1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1994

GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 8
 DRILLHOLE NO D11 DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS
Vert drilling	Meter						Foot	Density	Porosity	Resistivity	
	390	1279.2				Sh, lam, v brit along Bdg plane, many slip Clvg, dip 20 -30 , calc, thn Len of Lig 1,279'-1,279'3", Foss: Gast from 1,295'6"-1,318', Plt & fish					
	395										
	400	1312									
	405		SC			Slt, lt blsh gry 5B7/1, v calc, Qtz:wh, smoky, sbrndd, wl srt w/Musc & cmt Mat CaCO ₃					
	410	1344.8				Cl, lt blsh gry 5B7/1, dk yelsh brn 10YR4/2, grysh rd purp 5RP4/2, many slip Clvg w/Ls & Calc Xl @ depth 1,345'-1,346'; 1,349'6"-1,350'3"; 1,352'-1,352'4"; 1,360'9"-1,362'; calc					
	415	1361.2									
	420		SC			Sd, lt blsh gry 5B7/1, calc, Qtz:wh, smoky sbrndd, wl srt, m Gr Cl, pale brn 5YR5/2, many slip Clvg, v brit, v calc					
	425	1394				c lost					
	425		SC			Cl, lt olv gry 5Y6/1, many slip Clvg, slily calc					
	430										

1) Lithology sand clay	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION gravel interitic soil diatomite claystone mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE
 DRILLHOLE NO H 1

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 5/2/81-17/2/81 NO 1

TOTAL DEPTH 183'

LOCATION 486108 4845II

GROUND ELEVATION 274.69 m. GEOLOGIST(S) C. Benjawan, S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS			
Meter	Foot						Density	γ-ray	Resistivity	SP	% SHALE DIL			
										1	2	3	4	
										1	1	1	1	
						Lat, rdsh brn, ang to sbang, n Conc								
8						Cl, lt yelsh brn, Shw gd fis & Wtr absorb								
10-32.8						UCFR								
15						diatomaceous Cl, wh, lt yel, lt brn								
20-83.6						C FR								
25														
30-96.4														
35						Clst, lt gnsh gry(dry), dk gnsh gry(wet)								
40-131.2						C FR								
45														
50-164.0														
55														

1) Lithology
 sand
 clay

2) Consolidation
 UC unconsolidate
 SC semi-consolidate
 C consolidate

3) Sample type
 cutting
 core

4) Degree of weathering
 FR fresh
 SW slightly weathered
 MW moderately weathered
 HW highly weathered
 CW completely weathered

EXPLANATION

MR. PONGSAK SRIPONGPHUM
 GEOLOGY DEPARTMENT
 GRADUATE SCHOOL
 CHULALONGKORN UNIVERSITY

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 22/2/81-9/3/81 NO 1

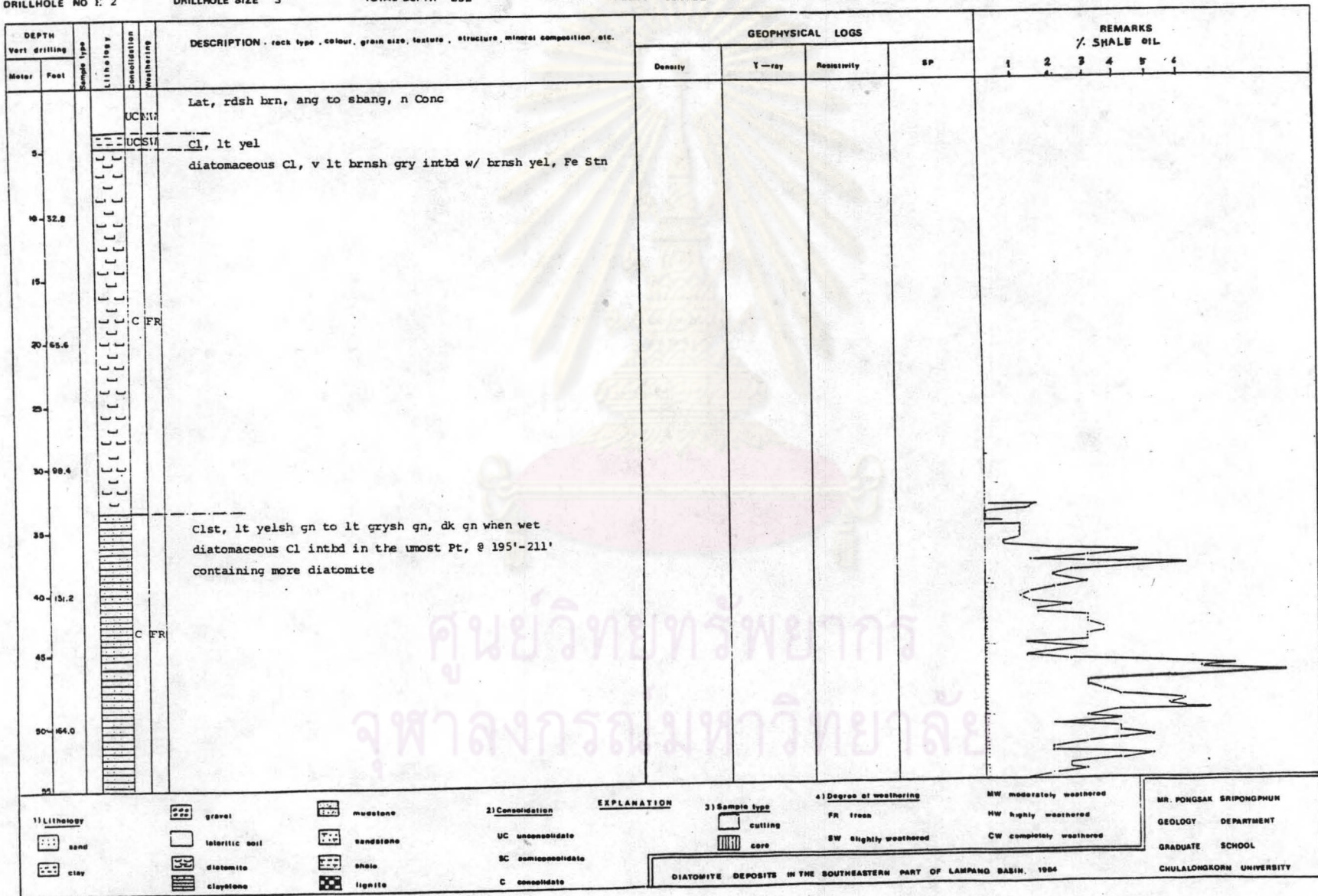
DRILLHOLE NO I: 2

DRILLHOLE SIZE 3"

TOTAL DEPTH 232'

LOCATION 491108 484511

GROUND ELEVATION 272.89 m. GEOLOGIST'S: C. Lanjawan, S. Pongsak



GEOLOGIC DRILL CHART

PROJECT _____ DRILL NO & TYPE _____ DRILLER _____ DATE _____ NO 2
 DRILLHOLE NO H 2 DRILLHOLE SIZE _____ TOTAL DEPTH _____ LOCATION _____ GROUND ELEVATION _____ GEOLOGIST (S) _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS % SHALE OIL						
							Density	γ-ray	Resistivity	SP	1	2	3	4			
Meter	Foot																
60-196.8					C FR	Clst, lt yelsh gn to lt grysh gn, dk gn when wet diatomaceous Cl intbd in the most Pt, @ 195'-211' containing more diatomite											
70-229.6					C FR	Clst, dk gry bcm v dk when wet											
75-																	

ศูนย์วิทยทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

Lithology sand clay	gravel lateritic soil diatomite claystone	Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale siltstone	Sample type cutting core	Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 19/3/81-12/4/81 NO 1

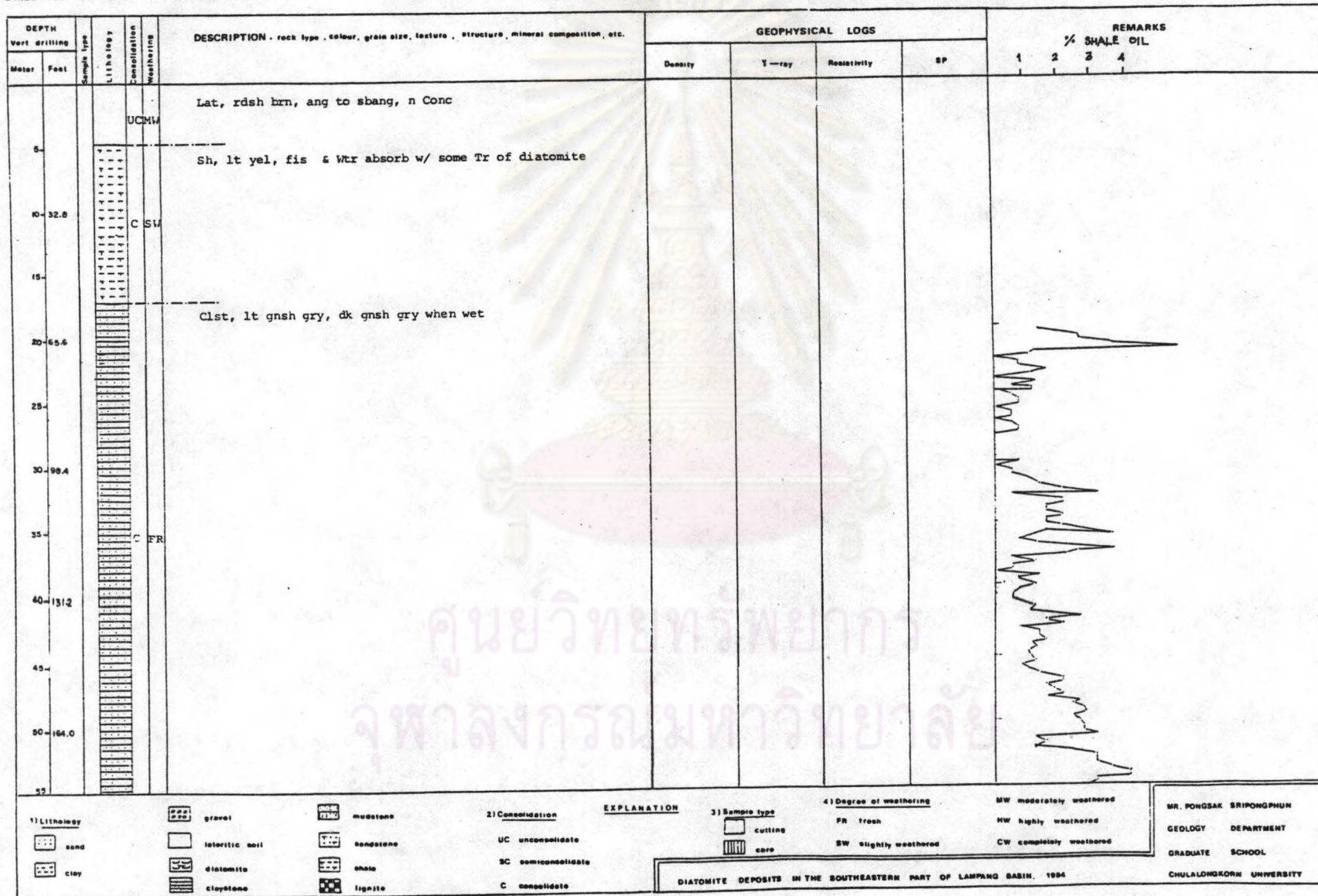
DRILLHOLE NO H 3

DRILLHOLE SIZE 3"

TOTAL DEPTH 266'

LOCATION 500110 4845II

GROUND ELEVATION 263.82 m. GEOLOGIST'S: C. Benjawan, S. Pongsak



GEOLOGIC DRILL CHART

PROJECT: DRILL NO & TYPE: DRILLER: DATE: NO 2
 DRILLHOLE NO II 3: DRILLHOLE SIZE: TOTAL DEPTH: LOCATION: GROUND ELEVATION: GEOLOGIST (S):

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION . rock type . colour . grain size . texture . structure . mineral composition . etc.	GEOPHYSICAL LOGS				REMARKS			
							Density	Y-ray	Resistivity	SP	% SHALE OIL			
Meter	Foot										1	2	3	4
60	196.8					Clst, lt gnsh gry, dk gnsh gry when wet								
65					C FR									
70	229.6													
75														
80	262.4													
85														

Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	EXPLANATION 2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUM GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPUNG BASIN 1984

ศูนย์วิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 13/4/81-12/5/81 NO 1

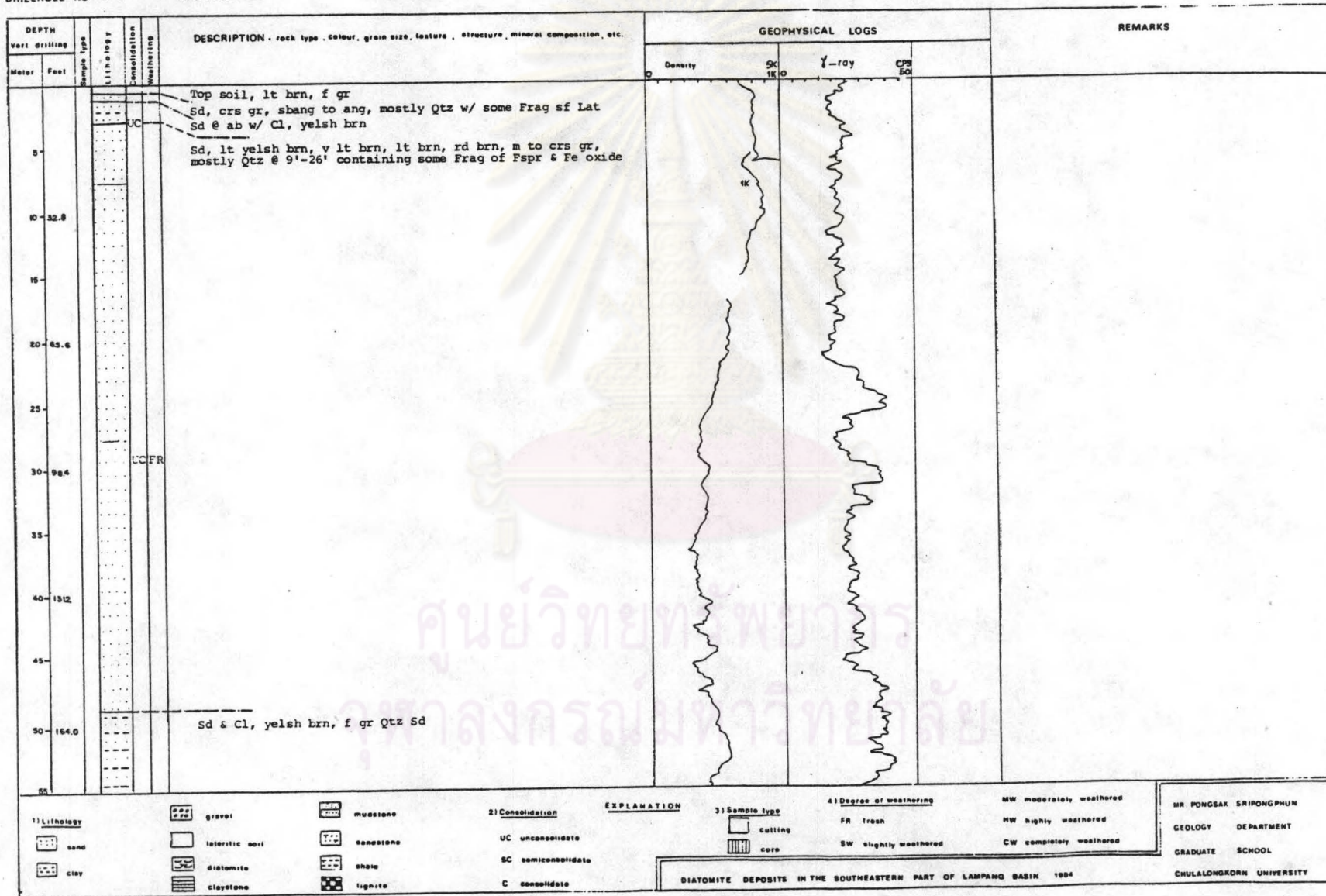
DRILLHOLE NO H 4

DRILLHOLE SIZE 3"

TOTAL DEPTH 260'

LOCATION 520110 4845II

GROUND ELEVATION 262.19 m. GEOLOGIST'S: C. Benjawan, S. Pongsak



MR PONGSAR SRIPONGPHUN
GEOLOGY DEPARTMENT
GRADUATE SCHOOL
CHULALONGKORN UNIVERSITY

GEOLOGIC DRILL CHART

PROJECT: _____ DRILL NO & TYPE: _____ DRILLER: _____ DATE: _____ NO 2
 DRILLHOLE NO H 4 DRILLHOLE SIZE: _____ TOTAL DEPTH: _____ LOCATION: _____ GROUND ELEVATION: _____ GEOLOGIST (S): _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS			REMARKS
							Density	γ-ray		
Meter	Foot									
60-196.8						Sd, v pale brn, f to m gr, mostly Qtz				
65										
70-229.6			UC/FR			Sd & Cl, lt gnsh gry, f gr Qtz Sd				
75										
80-262.4						Sd, f cr, mostly Qtz & abd Frag of lt gry Sh				

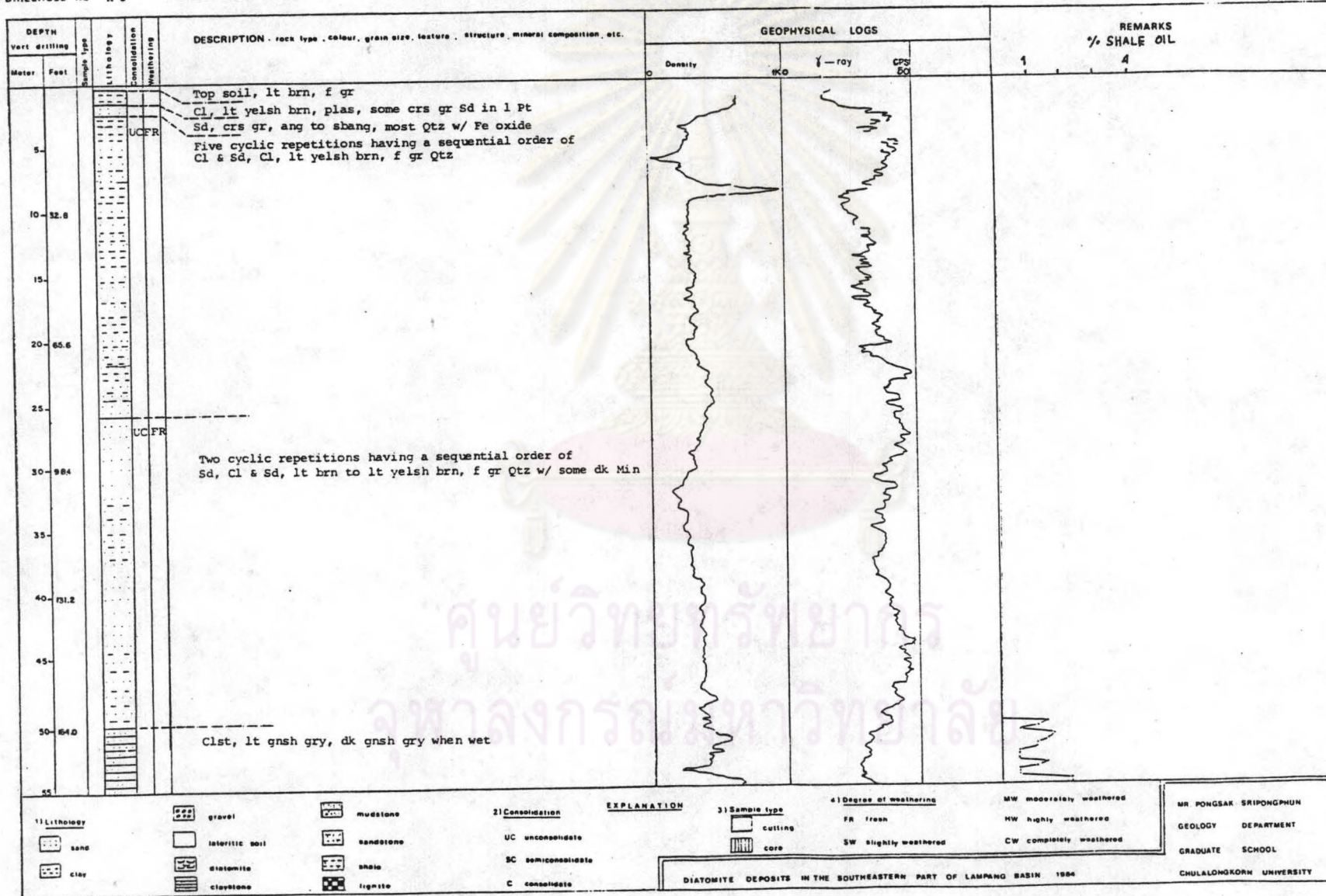
1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite
3) Sample type cutting core		4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

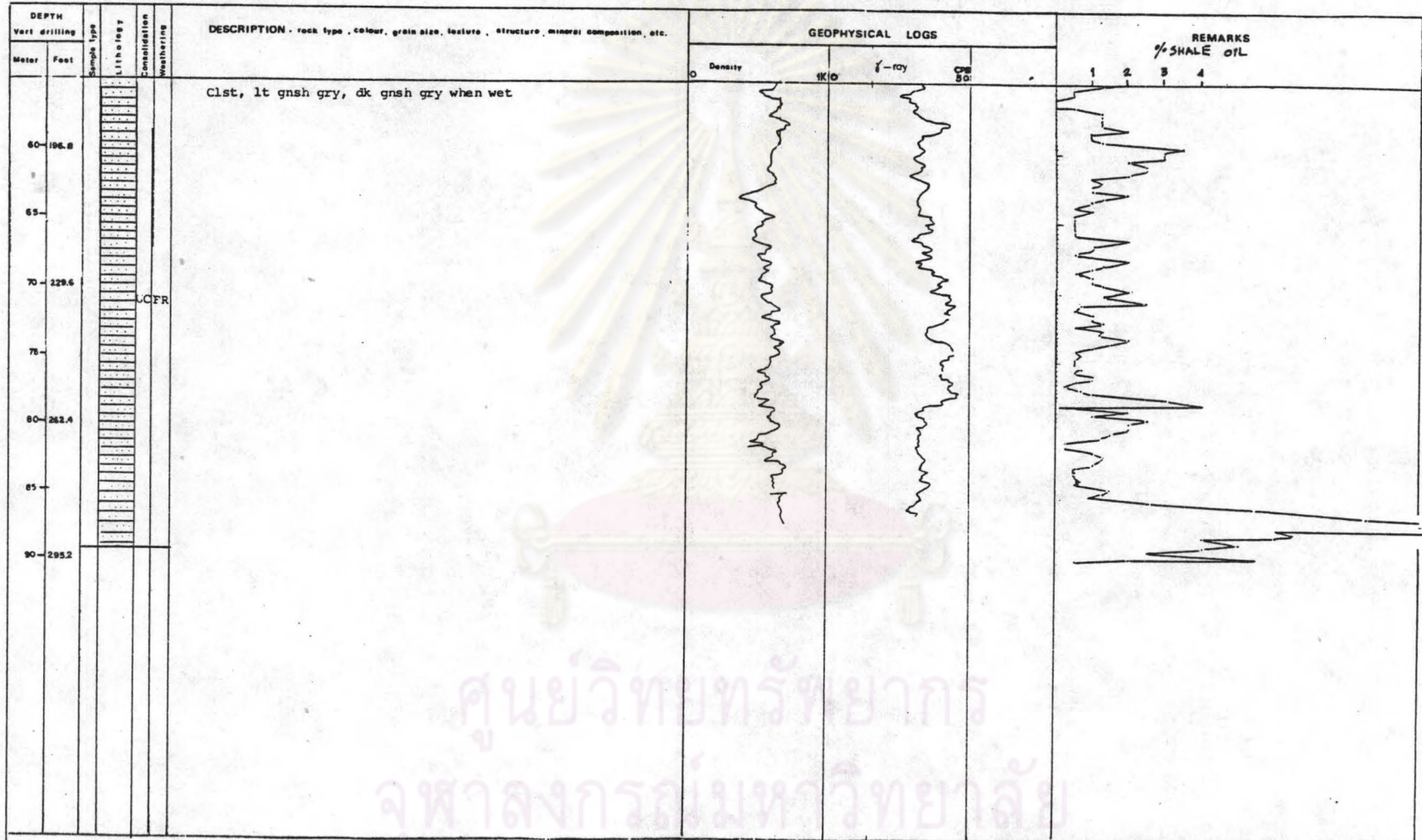
MR PONGSAK SRIPONGPHUN
 GEOLOGY DEPARTMENT
 GRADUATE SCHOOL
 CHULALONGKORN UNIVERSITY

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จุฬาลงกรณ์มหาวิทยาลัย

PROJECT DIATOMITE DRILL NO & TYPE rotary **GEOLOGIC DRILL CHART** DRILLER Economic Geology Div. DATE 14/5/81-31/5/81 NO 1
 DRILLHOLE NO H 5 DRILLHOLE SIZE 3" TOTAL DEPTH 292'10" LOCATION 500130 4845II GROUND ELEVATION 274.67 m. GEOLOGIST'S: C. Ienjawan, S. Pongsak



PROJECT DRILL NO & TYPE **GEOLOGIC DRILL CHART** DRILLER DATE NO 2
 DRILLHOLE NO H 5 DRILLHOLE SIZE TOTAL DEPTH LOCATION GROUND ELEVATION GEOLOGIST (S)



1) Lithology sand clay	gravel lateritic soil diatomite claystone	mudstone sandstone shale lignite	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION 3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

ศูนย์วิทยธรณีวิทยา
 จฬาลงกรณ์มหาวิทยาลัย

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 2/6/81-15/6/81 NO 1

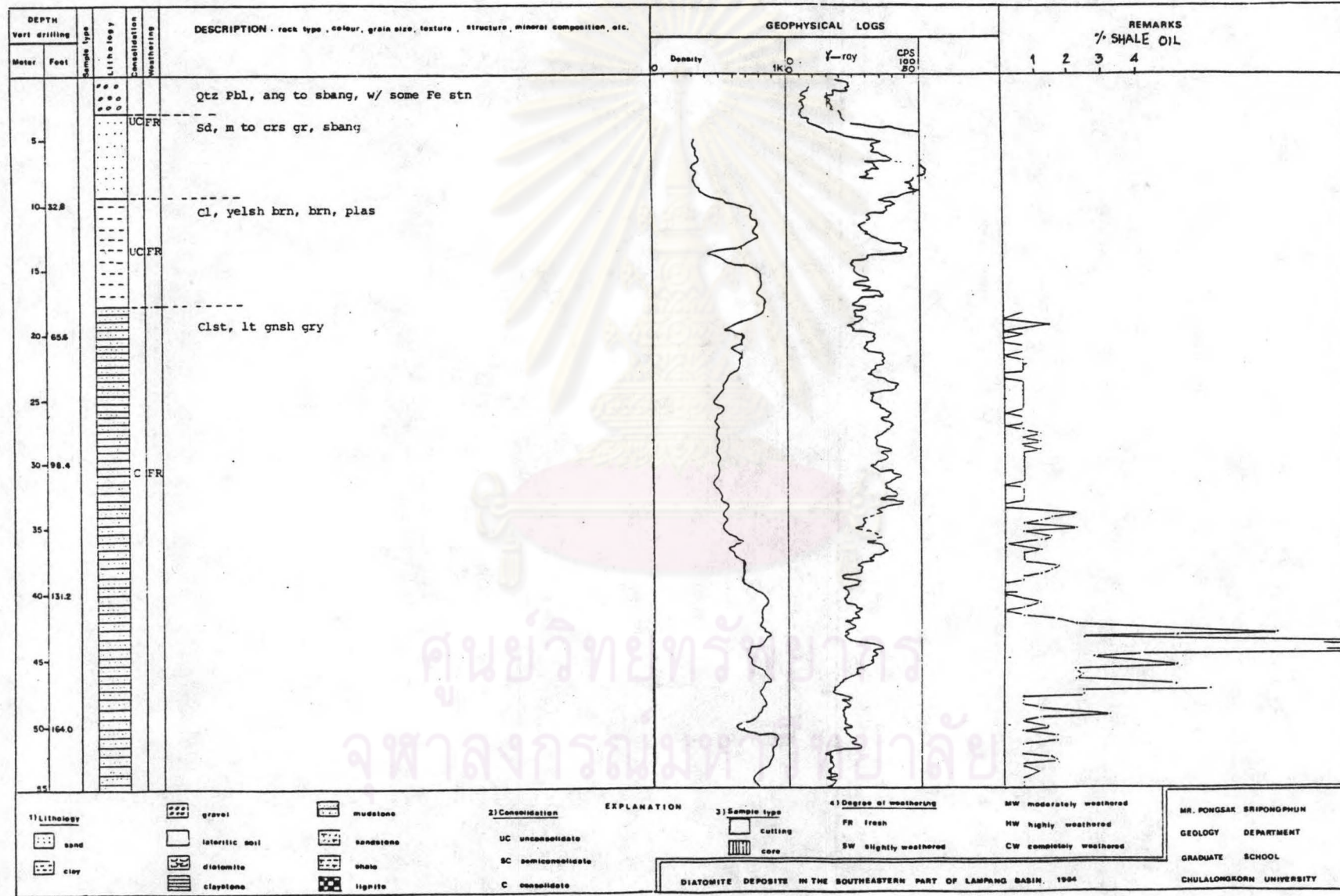
DRILLHOLE NO H 6

DRILLHOLE SIZE 3"

TOTAL DEPTH 245'

LOCATION 500150 484511

GROUND ELEVATION 258.27 m. GEOLOGIST(S) C. Benjawan, S. Pongsak



GEOLOGIC DRILL CHART

PROJECT: _____ DRILL NO & TYPE: _____ DRILLER: _____ DATE: _____ NO 2
 DRILLHOLE NO H 6 DRILLHOLE SIZE: _____ TOTAL DEPTH: _____ LOCATION: _____ GROUND ELEVATION: _____ GEOLOGIST(S): _____

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS			REMARKS % SHALE OIL						
							Density	γ-ray		1	2	3	4			
60	196.8					Clst, lt gnsh gry	C	FR								
69																
70	229.6															
76																
80	262.4															

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAR SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1984

ศูนย์วิทยุทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 22/7/81-25/7/81 NO 1

DRILLHOLE NO H 9

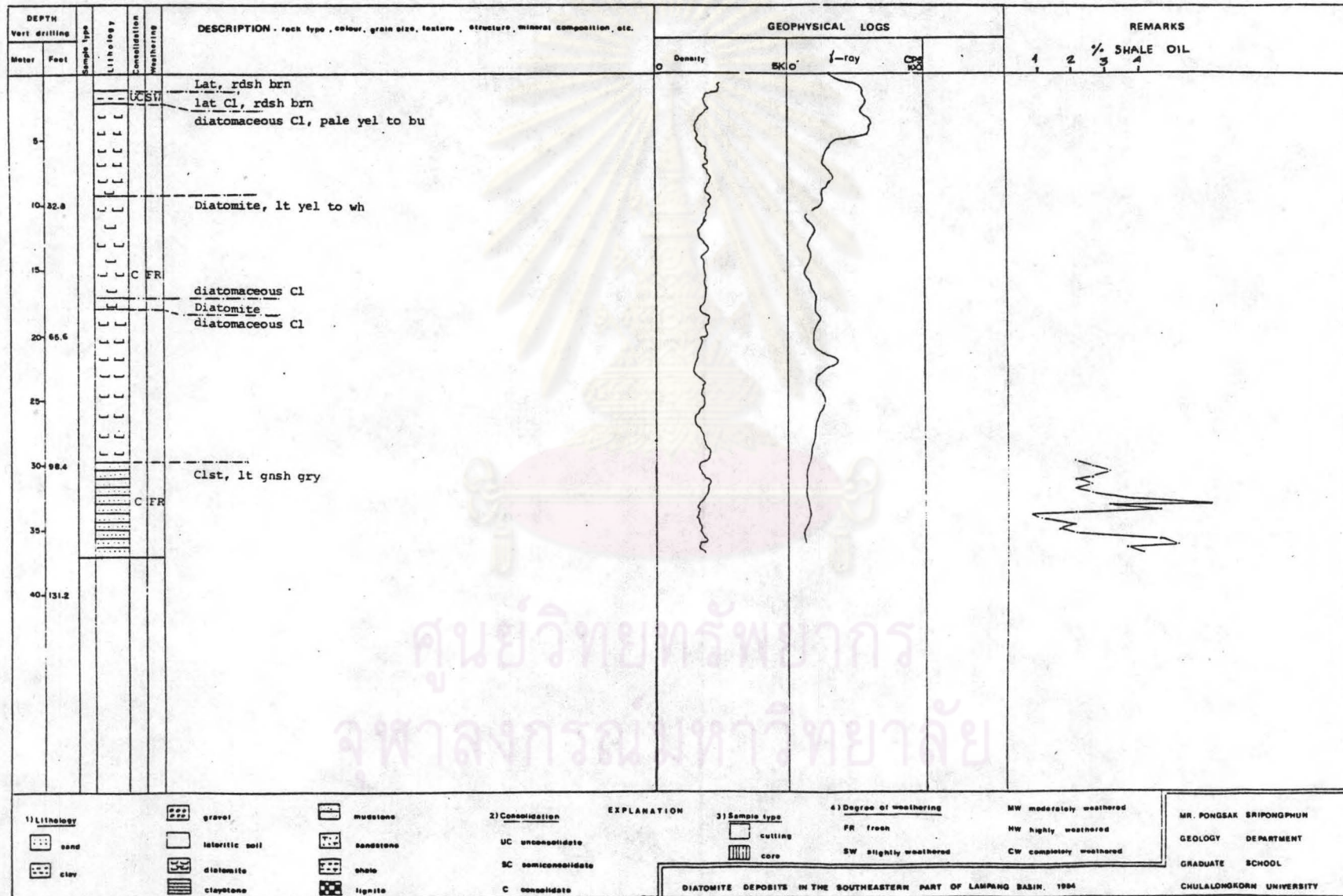
DRILLHOLE SIZE 3"

TOTAL DEPTH 120'

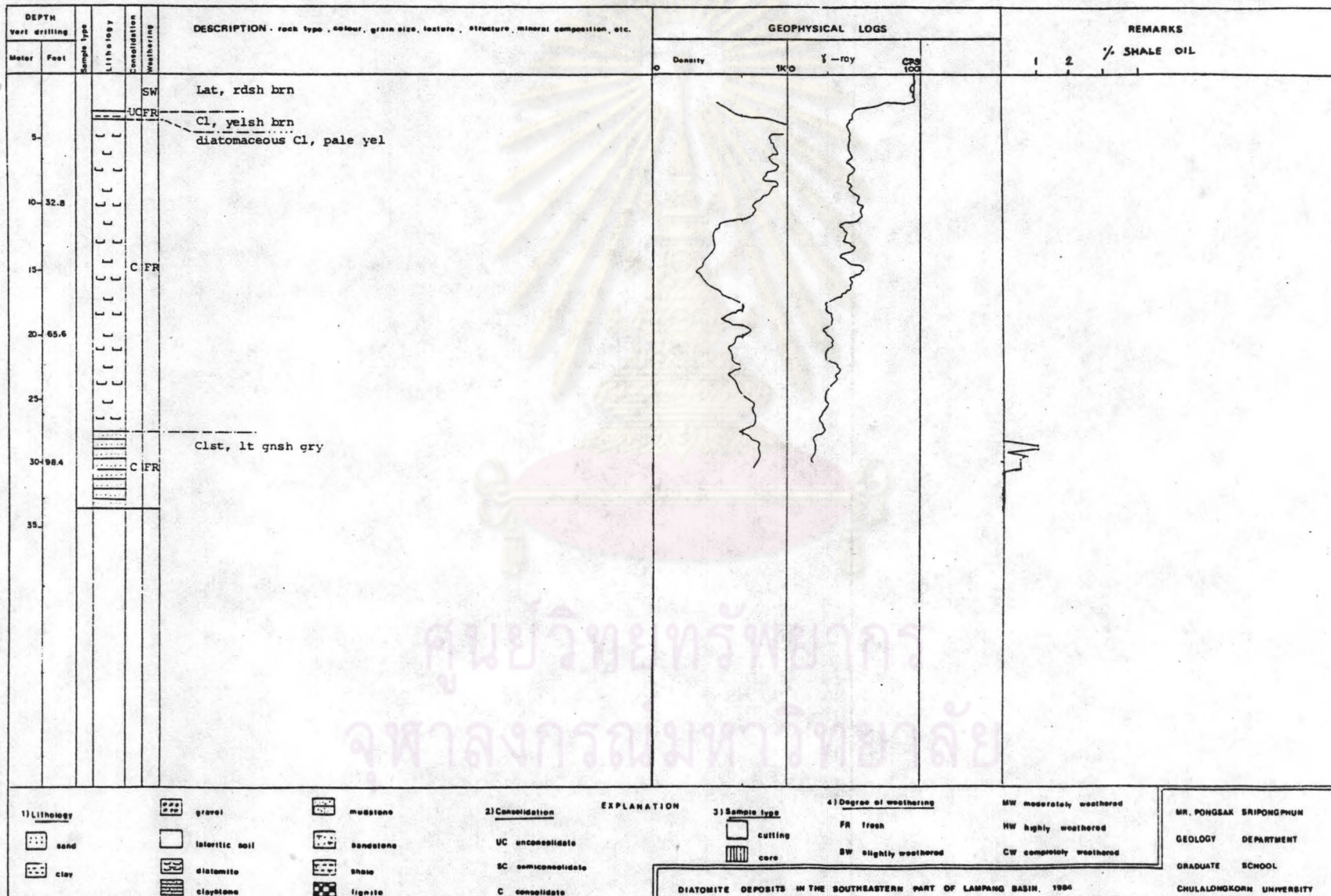
LOCATION 48090 4845II

GROUND ELEVATION 58.12 m.

GEOLOGIST(S) C. Benjawan, S. Pongsak



PROJECT DIATOMITE DRILL NO & TYPE rotary GEOLOGIC DRILL CHART DRILLER Economic Geology Div. DATE 26/7/81-28/7/81 NO 1
 DRILLHOLE NO H 10 DRILLHOLE SIZE 3" TOTAL DEPTH 110' LOCATION 480100 484511 GROUND ELEVATION 274.69 m. GEOLOGIST(S) C. Lenjawan, S. Pongsak



PROJECT DIATOMITE DRILL NO & TYPE rotary
 DRILLHOLE NO H 11 DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 12/8/81-13/8/81 NO 1
 TOTAL DEPTH 80' LOCATION 480120 484511 GROUND ELEVATION 253.16 m. GEOLOGIST (S) S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS			
Meter	Feet						Density	γ-ray	CPG	LOG	1	2	3	SHALE
						Lat, rdsh brn								
		UC SW				lat Cl, diatomaceous Cl								
						Diatomite diatomaceous Cl								
5														
						C FR								
10	32.8													
15						Clst, lt gnsh gry(dry), gnsh gry(wet)								
20	65.6													
25						carb Clst, dk brn								

1) Lithology		2) Consolidation		3) Sample type		4) Degree of weathering	
	sand	UC	unconsolidate		cutting	FR	fresh
	clay	SC	semiconsolidate		core	SW	slightly weathered
	gravel	C	consolidate			MW	moderately weathered
	lateritic soil					MW	highly weathered
	diatomite					CW	completely weathered
	claystone						
	mudstone						
	sandstone						
	shale						
	lignite						

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

MR. PONGSAK SRIPONGPHUN
 GEOLOGY DEPARTMENT
 GRADUATE SCHOOL
 CHULALONGKORN UNIVERSITY

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 14/8/81-17/8/81 NO 1

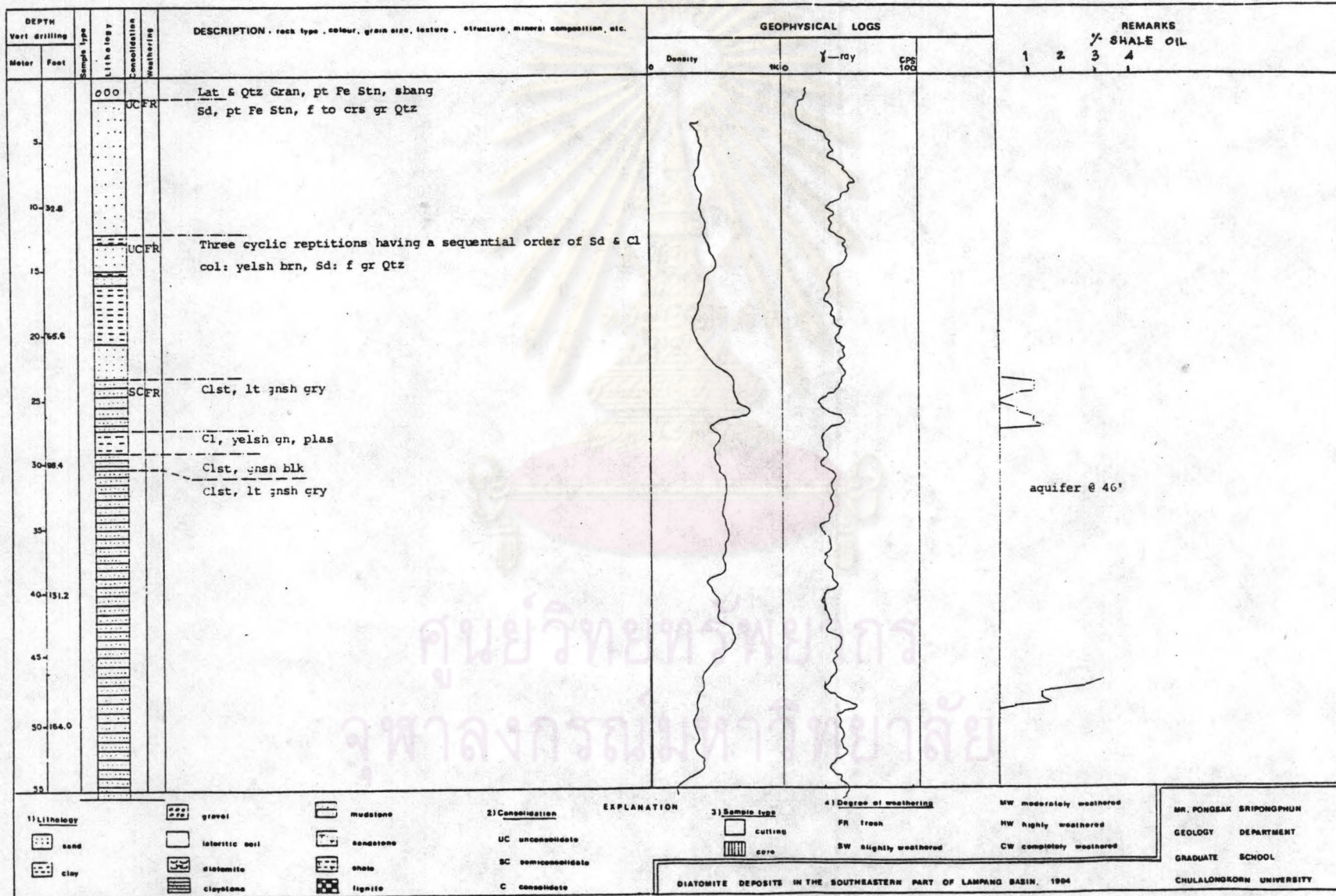
DRILLHOLE NO H 12

DRILLHOLE SIZE 3"

TOTAL DEPTH 163'

LOCATION 480130 484511

GROUND ELEVATION 268.20 m. GEOLOGIST(S) S. Pongsak

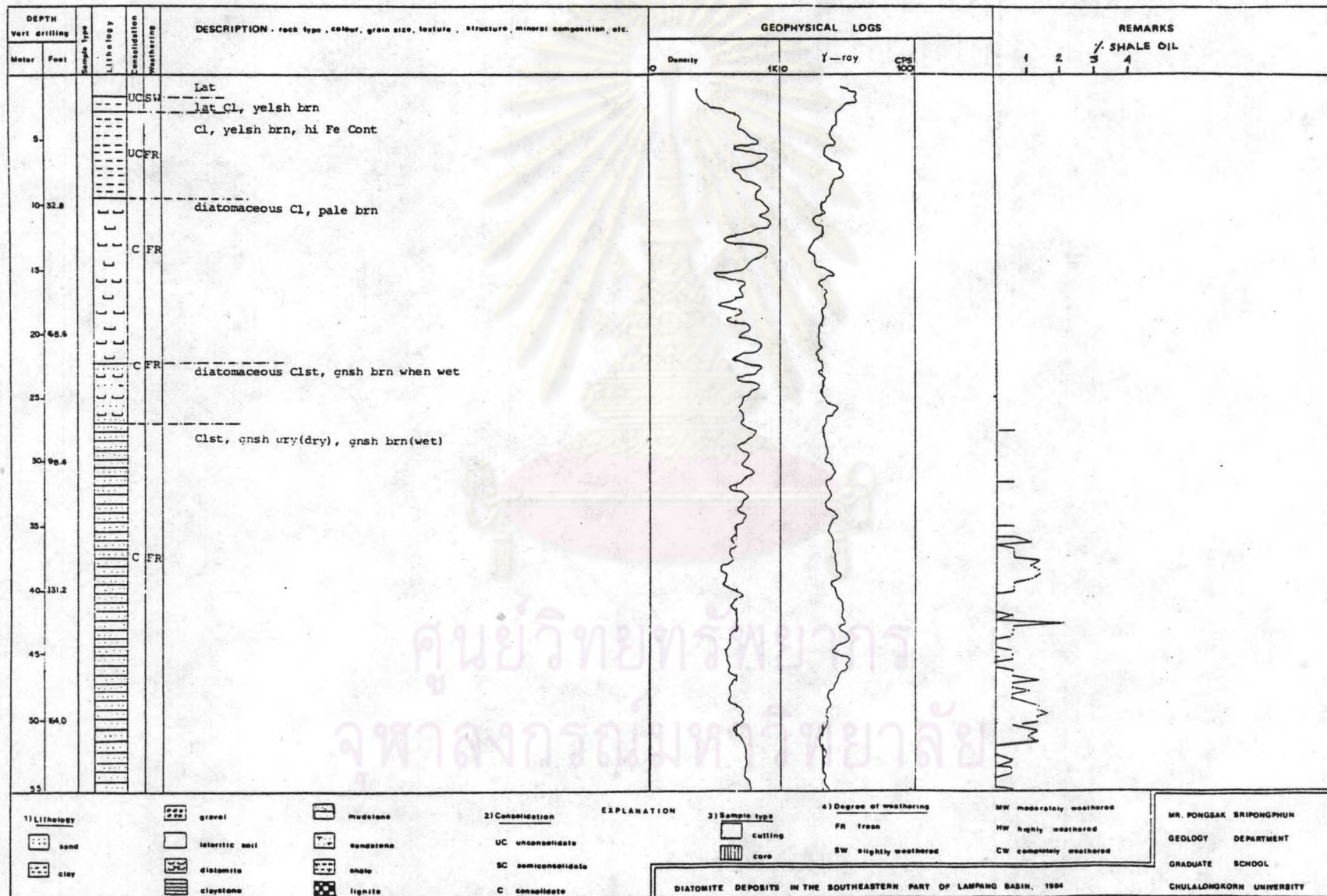


PROJECT DIATOMITE
 DRILLHOLE NO H 13

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 19/8/81-24/8/81 NO 1
 TOTAL DEPTH 204' LOCATION 490092 4845II GROUND ELEVATION 250.97 m. GEOLOGIST's, K. Natthaporn



GEOLOGIC DRILL CHART

PROJECT: DRILL NO & TYPE: DRILLER: DATE: NO 2
 DRILLHOLE NO H 13 DRILLHOLE SIZE: TOTAL DEPTH: LOCATION: GROUND ELEVATION: GEOLOGIST(S):

DEPTH Vert drilling		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS			
							Density	γ _g	γ _{ray}	CPI	% SHALE OIL			
Meter	Feet									1	2	3	4	
60	196.8			C	FR	Clst, gnsh gry(dry), gnsh brn(wet)								
65														

1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered	MW moderately weathered HW highly weathered CW completely weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN 1994

ศูนย์วิทยุทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

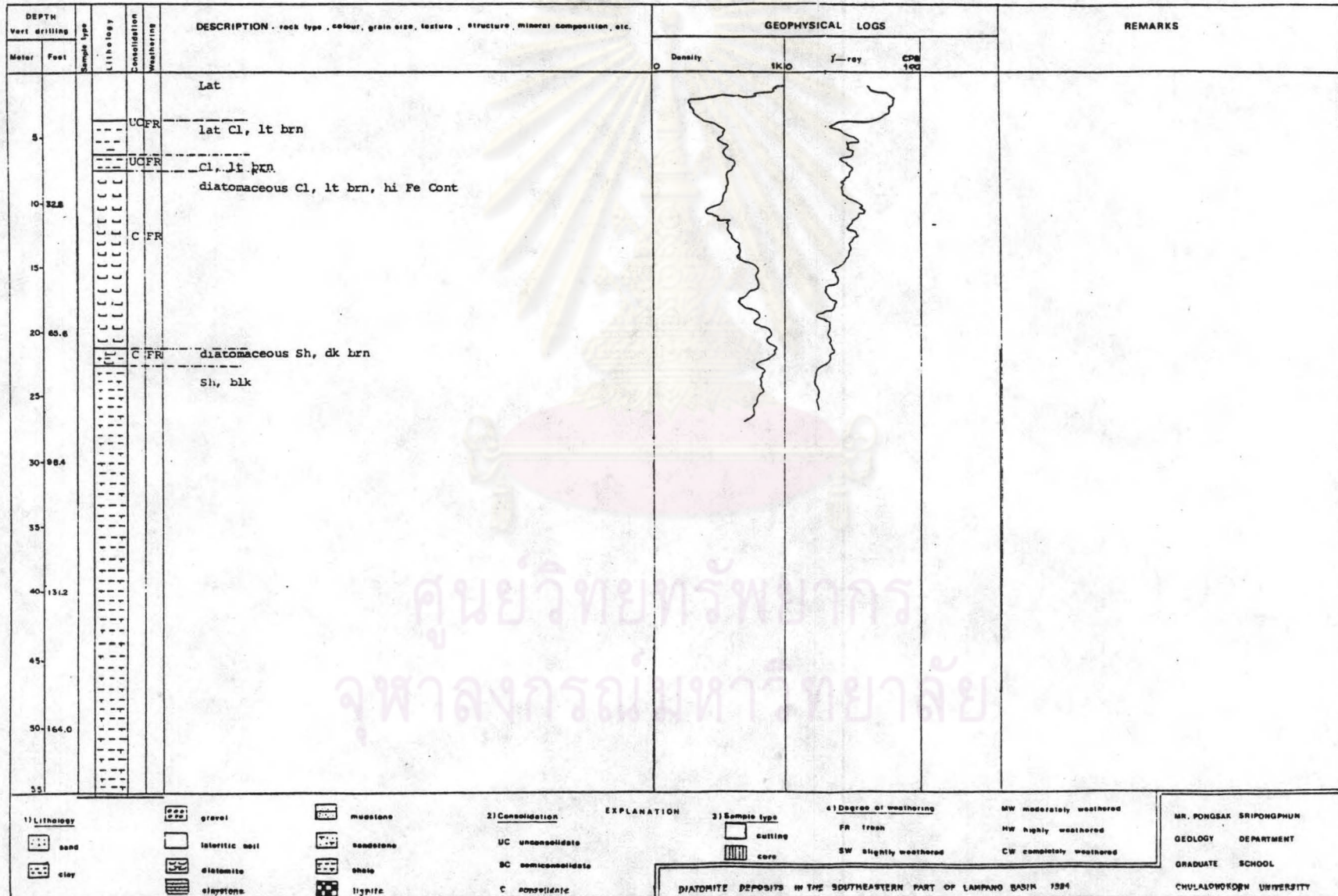
PROJECT DIATOMITE
 DRILLHOLE NO H 14

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

TOTAL DEPTH 183'

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 27/8/81-31/8/81 NO 1
 LOCATION 490100 484511 GROUND ELEVATION 261.51 m. GEOLOGIST (S) K. Natthaporn



PROJECT DIATOMITE
 DRILLHOLE NO H 15

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

TOTAL DEPTH 183'

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 1/9/81-5/9/81 NO 1
 LOCATION 491079 484511 GROUND ELEVATION 248.01 m. GEOLOGIST(S) K. Natthaporn

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS	
Meter	Feet						Density	γ-ray	Resistivity	SP	1	2
						Lat						
				UC SV		Lat & Diatomite diatomaceous Cl, bu @ 12'-20' & 57'-67', brn @ 20'-39', lt brn @ 39'-57' & 75'-85'						
10	32.8			C FR								
20	65.6											
25						diatomaceous Sh, dk brn						
30	98.4			C FR								
35												
40	131.2			C FR		sl, blk						
45												
50	164.0											
53												

1) Lithology sand clay	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION gravel lateritic soil diatomite claystone mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering FR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE

DRILL NO & TYPE rotary

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 7/9/81-11/9/81 NO 1

DRILLHOLE NO H 16

DRILLHOLE SIZE 3"

TOTAL DEPTH 183'

LOCATION 490120 4845II

GROUND ELEVATION 260.82 m. GEOLOGIST's: K. Matthaporn

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS												
Meter	Feet						Density	Y-ray	Resistivity	SP	1	2	3	4	% SHALE OIL								
						Lat																	
				UCSW		Lat & Diatomite diatomaceous Cl, yelsh brn																	
5																							
10	32.8			C FR																			
15																							
20	65.6			C FR		diatomaceous Sl, dk brn																	
25						Sl, gnsh blk																	
30	98.4			C FR																			
35																							
40	131.2																						
45																							
50	164.0																						
55																							

EXPLANATION

1) Lithology	gravel	mudstone	2) Consolidation	cutting	4) Degree of weathering	MW moderately weathered	MR PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
sand	lateritic soil	sandstone	UC unconsolidate	core	FR fresh	MW highly weathered	
clay	diatomite	shale	SC semiconsolidate		SW slightly weathered	CW completely weathered	
	claystone	lignite	C consolidate				

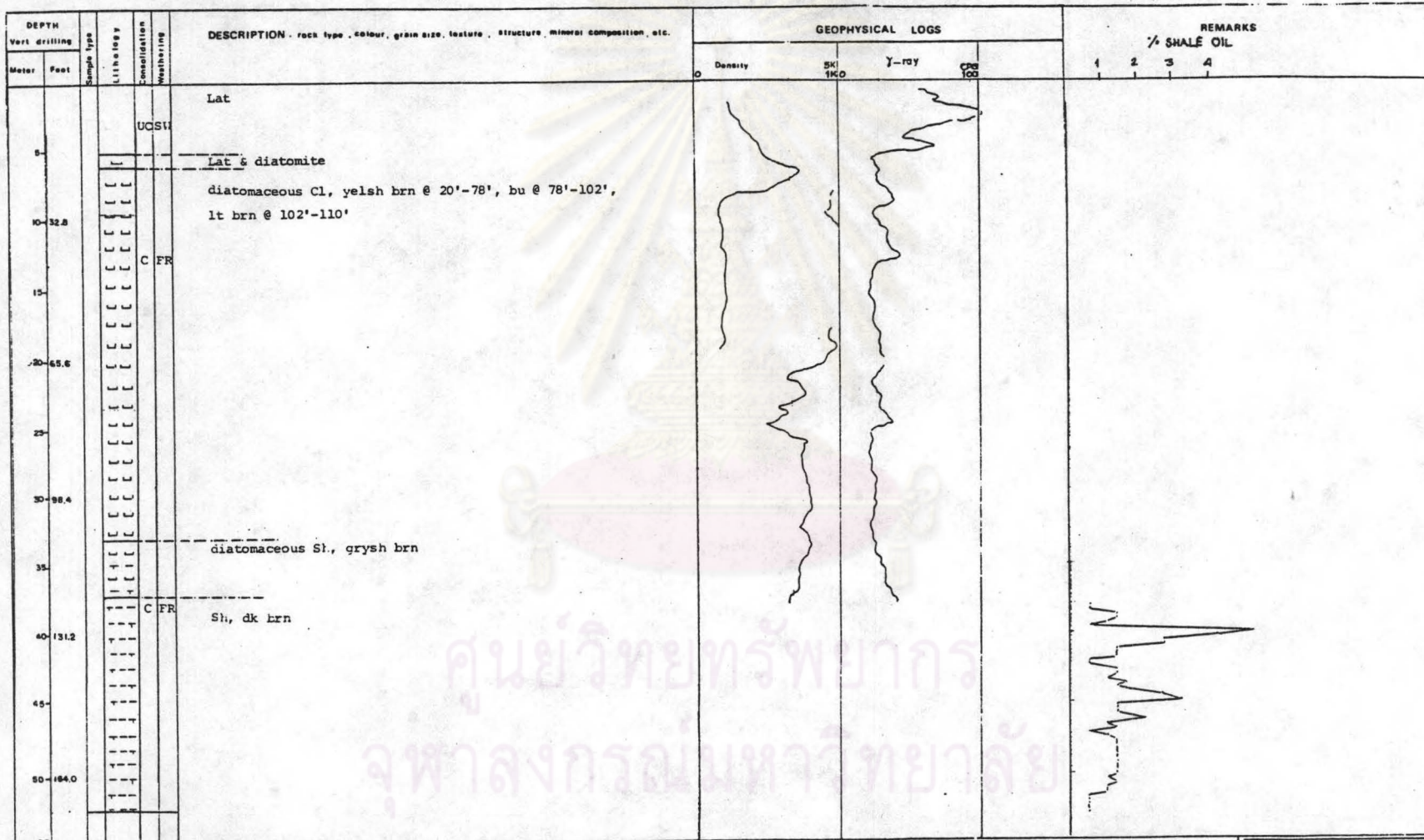
DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE
 DRILLHOLE NO H 17

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 14/9/81-18/9/81 NO 1
 TOTAL DEPTH 173' LOCATION 490130 4845II GROUND ELEVATION 266.75 m. GEOLOGIST'S: K. Natthaporn



1) Lithology sand clay	gravel lateritic soil diatomite claystone	2) Consolidation UC unconsolidate SC semiconsolidate C consolidate	EXPLANATION mudstone sandstone shale lignite	3) Sample type cutting core	4) Degree of weathering PR fresh SW slightly weathered MW moderately weathered HW highly weathered CW completely weathered	MR. PONGSAK SRIPONGPHUN GEOLOGY DEPARTMENT GRADUATE SCHOOL CHULALONGKORN UNIVERSITY
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DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE

DRILL NO & TYPE ROTARY

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 2/10/81-10/10/81 NO 1

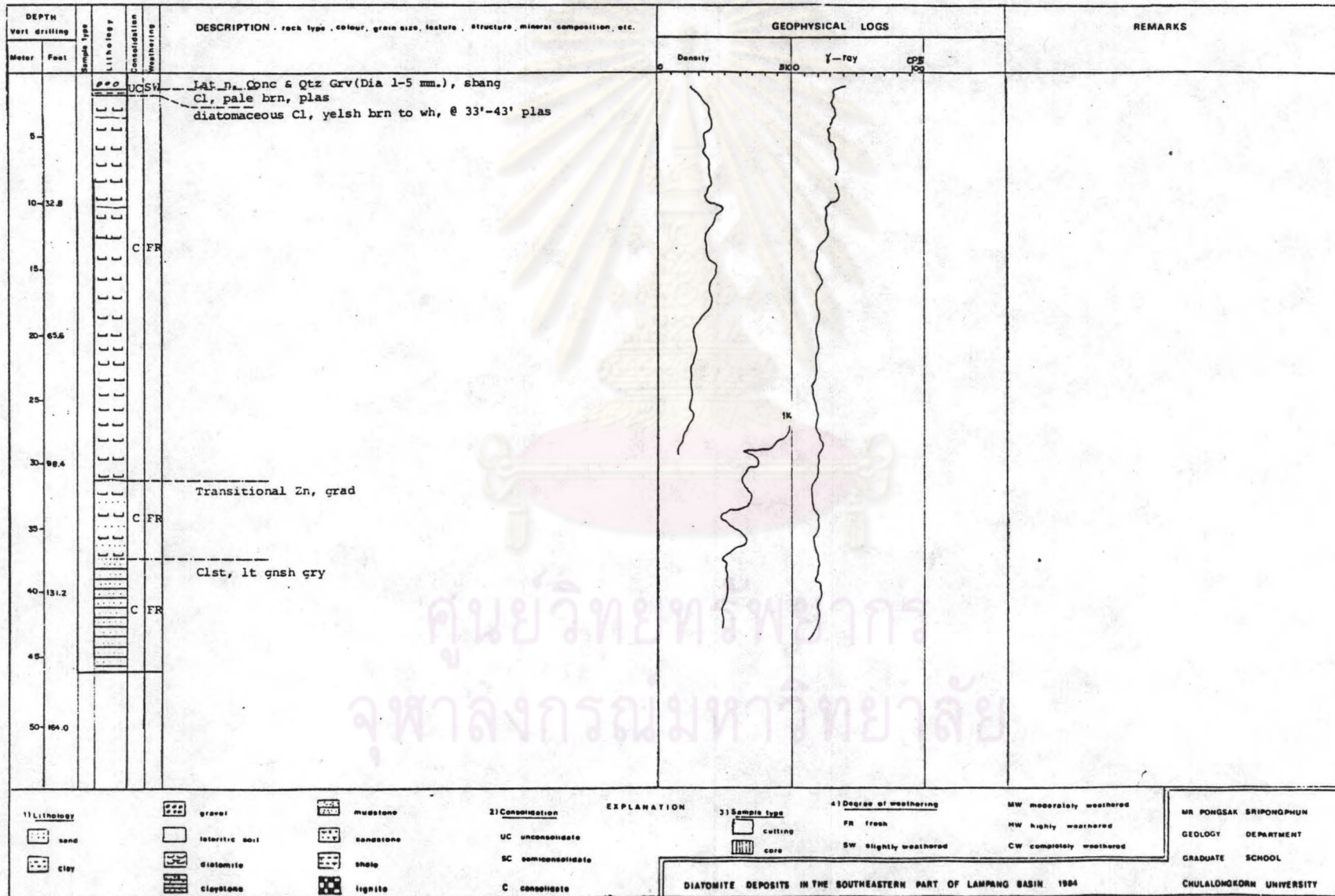
DRILLHOLE NO H 19

DRILLHOLE SIZE 3"

TOTAL DEPTH 150'

LOCATION 544117 4845II

GROUND ELEVATION 287.56 m. GEOLOGIST (S) S. Pongsak



PROJECT DIATOMITE
 DRILLHOLE NO H 20

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

TOTAL DEPTH 153'

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 11/10/81-20/10/81 NO 1

LOCATION 654325 484511

GROUND ELEVATION

GEOLOGIST (S) S. Pongsak

DEPTH		Sample type	Lithology	Consolidation	Weathering	DESCRIPTION - rock type, colour, grain size, texture, structure, mineral composition, etc.	GEOPHYSICAL LOGS				REMARKS								
Meter	Feet						Density	SKO	γ-ray	CPS 100	1	2	3	4	% SHALE	OIL			
						Lat & Qtz Pbl Cl brn, plas diatomaceous Cl													
3																			
10	32.8																		
15						Transitional Zn, grad Cist, lt gnsh gry													
20	65.6																		
23																			
30	98.4																		
35																			
40	131.2																		
45																			
50	164.0																		

1) Lithology

sand
clay

gravel

lateritic soil

diatomite
claystone

muonstone
sandstone
shale
lignite

2) Consolidation

UC unconsolidate
SC semiconsolidate
C consolidate

EXPLANATION

3) Sample type

cutting
core

4) Degree of weathering

FR fresh
SW slightly weathered

MW moderately weathered

MW highly weathered

CW completely weathered

MR. PONGSAR SRIPONGPHUN

GEOLOGY DEPARTMENT

GRADUATE SCHOOL

CHULALONGKORN UNIVERSITY

DIATOMITE DEPOSITS IN THE SOUTHEASTERN PART OF LAMPANG BASIN, 1984

PROJECT DIATOMITE
 DRILLHOLE NO H 22

DRILL NO & TYPE rotary
 DRILLHOLE SIZE 3"

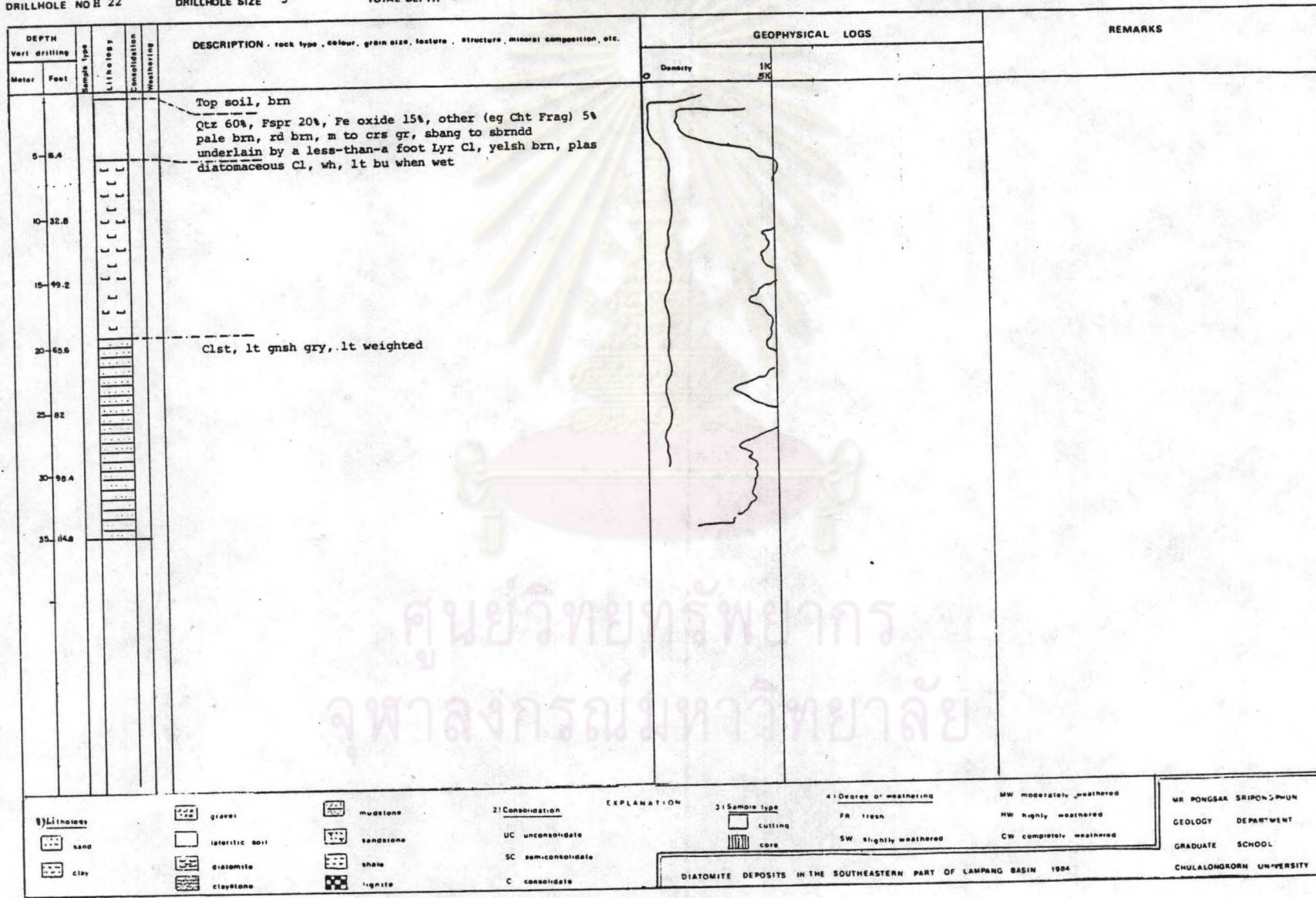
TOTAL DEPTH 115'

GEOLOGIC DRILL CHART

DRILLER Economic Geology Div. DATE 4/1/82-18/2/82 NO 1

LOCATION 547053 4845 II

GROUND ELEVATION 256.597 m. GEOLOGIST(S) S. Pongsak



ศูนย์วิจัยทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

MR PONGSAK SRIPON, PHUN
 GEOLOGY DEPARTMENT
 GRADUATE SCHOOL
 CHULALONGKORN UNIVERSITY

BIOGRAPHY

Mr. Pongsak Sripongpun was born in Songkhla, Thailand on October 17, 1953. He graduated from the Department of Geology, Faculty of Science, Chiangmai University in 1976 with a B.Sc. (Geology). Presently, he is a field geologist responsible for mapping in northern Thailand of Geological Survey Division, Department of mineral resources, Ministry of Industry, Bangkok, Thailand.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย