

**APPENDIX A**  
**INFORMATION AND LITHOLOGY OF**  
**EACH WELL**

## A-1 Well description of A

### A-1.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL75% MOECO10% SEAPECT15%		
API number	70316000 0200		
Block	11		
Category	Exploratory well		
KB elevation	50.0		
Water depth	245		
Status	Gas well		
TD drilling	11917 MD	9459 TVD	-9409 SS
TD logging	11924 MD	9464 TVD	-9414 SS
Surface coordinates			
Longitude	101 : 30 : 47.1		
Latitude	9 : 27 : 15.4		
UTM 47 X	775916		
UTM 47Y	1045989		
Bottom hole coordinates			
Longitude	101 : 31 : 52.7		
Latitude	9 : 27 : 15		
UTM 47 X	775921		
UTM 47Y	1045989		
Displacement	6577 ft		
Max angle	45.80		
Hydrocarbon summary			
○	51 ft hydrocarbon to base in 1 zones		
	includes 0 ft oil to base in 0 zones		
⊖	0 ft hydrocarbon on water in 0 zones		
	includes 0 ft oil on water in 0 zones		
⊗	excludes 21 ft in 1 additional zones of interest		

Table A-1 Lithological description of A well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD2876-4304 MD3090-5040 SS-2826--4260	-2826--2940	gray clay 95%, coal or coaly shale 5%	-2826--4260	can not interprete			
	-2940--3054	gray clay 95%, coal or coaly shale 5%					
	-3054--3168	gray clay 90%, coal or coaly shale 10%					
	-3168--3281	gray clay 85%, coal or coaly shale 15%					
	-3281--3393	gray clay 90%, coal or coaly shale 10%					
	-3393--3504	gray clay 85%, coal or coaly shale 15%					
	-3504--3614	gray clay 90%, coal or coaly shale 10%					
	-3614--3723	gray clay 85%, coal or coaly shale 15%					
	-3723--3832	gray clay 85%, coal or coaly shale 15%					
	-3832--3938	gray clay 85%, coal or coaly shale 15%					
	-3938--4044	gray clay 90%, coal or coaly shale 10%					
	-4044--4149	gray clay 90%, coal or coaly shale 10%					
	-4149--4254	gray clay 90%, coal or coaly shale 10%					
	-4254--4260	gray clay 90%, coal or coaly shale 10%					
4 VD4304-7480 MD5040-9390	-4260--4360	gray clay 90%, coal or coaly shale 10%	-4260--5012	can not interprete			
	-4360--4465	gray clay 90%, coal or					

Sequence and Depth (ft)	Description							
	Lithological Cutting Log		Subsea Geophysical Correlation log					
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit	
SS-4260--7402		coaly shale 10%						
	-4465--4571	gray clay 95%. coal or coaly shale 5%						
	-4571--4677	gray clay 95%. coal or coaly shale 5%						
	-4677--4783	gray clay 95%. coal or coaly shale 5%						
	-4783--4889	gray clay 95%. coal or coaly shale 5%						
	-4889--4995	gray clay mixed with brown or reddish brown clay 100%	-5012--5014	wet sandstone	16	100	13	
	-4995--5102	gray clay mixed with brown or reddish brown clay 100%	-5014--5018	thin layer of clay. shale. sandstone.coal or coaly shale				
			-5018--5025	wet sandstone	19	90	12	
	-5102--5208	gray clay mixed with brown or reddish brown clay 100%	-5025--5216	thin layer of clay. shale. sandstone.coal or coaly shale				
	-5208--5315	gray clay mixed with brown or reddish brown clay 100%	-5216--5220	wet sandstone	13	100	10	
			-5220--5240	thin layer of clay. shale. sandstone.coal or coaly shale				
			-5240--5250	wet sandstone	12	99	12	
			-5250--5262	wet sandstone	26	98	11	
			-5262--5318	thin layer of clay. shale. sandstone.coal or coaly shale				
	-5315--5422	gray clay mixed with brown or reddish brown clay 100%	-5318--5327	wet sandstone	18	100	20	
			-5327--5467	thin layer of clay. shale. sandstone.coal or coaly shale				
	-5422--5529	gray clay mixed with brown or reddish brown clay 100%	-5467--5498	wet sandstone	17	96	12	
	-5529--5678	gray clay mixed with brown or reddish brown clay 100%	-5498--5634	thin layer of clay. shale. sandstone.coal or coaly shale				
			-5634--5636	wet sandstone	11	100	10	
	-5678--5746	gray clay mixed with brown or reddish brown clay 100%	-5636--5715	thin layer of clay. shale. sandstone.coal or coaly shale				

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-5715--5721	wet sandstone	28	83	15
	-5746--5855	gray clay mixed with brown or reddish brown clay 100%	-5721--5788	thin layer of clay. shale. sandstone.coal or coaly shale			
			-5788--5791	wet sandstone	10	100	13
	-5855--5965	gray clay mixed with brown or reddish brown clay 100%	-5791--6058	thin layer of clay. shale. sandstone.coal or coaly shale			
	-5965--6074	gray clay mixed with brown or reddish brown clay 100%					
	-6074--6184	gray clay mixed with brown or reddish brown clay 100%	-6058--6082	wet sandstone	26	83	15
			-6082--6312	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6184--6294	gray clay mixed with brown or reddish brown clay 100%	-6312--6315	wet sandstone	12	96	12
	-6294--6405	gray clay mixed with brown or reddish brown clay 100%	-6315--6318	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6318--6330	wet sandstone	26	90	16
	-6405--6517	brown or reddish brown clay 100%	-6330--6476	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6476--6482	wet sandstone	17	90	14
	-6517--6628	brown or reddish brown clay 100%	-6482--6650	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6628--6741	brown or reddish brown clay 100%	-6650--6655	wet sandstone	12	93	12
			-6655--6692	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6692--6717	wet sandstone	22	79	20
	-6741--6853	brown or reddish brown clay 100%	-6717--6907	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6853--6967	brown or reddish brown clay 100%	-6907--6910	wet sandstone	14	94	12
			-6910--6933	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6933--6936	wet sandstone	9	90	10
	-6967--7081	brown or reddish brown clay 100%	-6936--6988	thin layer of clay. shale. sandstone.coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-7081--7196	brown or reddish brown clay 100%	-6988--6990 -6990--7070 -7070--7090	wet sandstone thin layer of clay, shale. sandstone,coal or coaly shale wet sandstone	16 22	72 72	16 20
	-7196--7313	brown or reddish brown clay 100%	-7090--7325	thin layer of clay, shale. sandstone,coal or coaly shale			
	-7313--7402	brown or reddish brown clay 100%	-7325--7340 -7340--7402	wet sandstone thin layer of clay, shale. sandstone,coal or coaly shale	12	84	20
3	-7402--7430	brown or reddish brown clay 100%	-7402--7424	wet sandstone	13	91	22
VD7480-9370			-7424--7441	thin layer of clay, shale.			
MD9390-11970	-7430--7549	brown or reddish brown clay 100%		sandstone,coal or coaly shale			
SS-7402--9331			-7441--7490	gas sandstone	19	49	400
			-7490--7505	wet sandstone	19	49	400
	-7549--7667	brown or reddish brown clay 100%	-7505--7775	thin layer of clay, shale. sandstone,coal or coaly shale			
	-7667--7787	brown or reddish brown clay 100%	-7775--7790	wet sandstone	14	83	22
	-7787--7907	brown or reddish brown clay 100%	-7790--7802	thin layer of clay, shale. sandstone,coal or coaly shale			
			-7802--7805	wet sandstone	7	80	15
	-7907--8027	brown or reddish brown clay 100%	-7805--8043	thin layer of clay, shale. sandstone,coal or coaly shale			
	-8027--8146	brown or reddish brown clay 100%	-8043--8073 -8073--8095	additional interest sandstone thin layer of clay, shale. sandstone,coal or coaly shale	8	64	20
			-8095--8099	wet sandstone	6	100	34
			-8099--8170	thin layer of clay, shale.			
	-8146--8267	brown or reddish brown clay 100%		sandstone,coal or coaly shale			
			-8170--8175	wet sandstone	8	64	20
	-8267--8388	brown or reddish brown clay 100%	-8175--8440	thin layer of clay, shale, sandstone,coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8388--8510	brown or reddish brown clay 100%	-8440--8450	wet sandstone	16	72	94
	-8510--8632	brown or reddish brown clay 100%	-8450--8854	thin layer of clay, shale, sandstone, coal or coaly shale			
	-8632--8754	brown or reddish brown clay 100%					
	-8754--8872	brown or reddish brown clay 100%	-8854--8858	wet sandstone	11	79	40
	-8872--8990	brown or reddish brown clay 100%	-8858--8885	thin layer of clay, shale, sandstone, coal or coaly shale			
	-8990--9104	brown or reddish brown clay 100%	-8885--8905	wet sandstone	8	84	92
	-9104--9214	brown or reddish brown clay 100%	-8905--8985	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8985--8990	wet sandstone	13	88	42
			-8990--9110	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9110--9115	wet sandstone	6	99	12
			-9115--9205	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9205--9212	wet sandstone	5	96	31
	9214--9320	brown or reddish brown clay 100%	-9212--9234	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9234--9278	wet sandstone	13	94	22
			-9278--9304	wet sandstone	14	94	15
			-9304--9313	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9313--9316	wet sandstone	13	72	50
	>-9320	brown or reddish brown clay 100%	-9316--?	thin layer of clay, shale, sandstone, coal or coaly shale			

## A-2 Well description of B

### A-2.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL71.25% MOECO23.75% PTTEP5%		
API number	70312004 0400		
Block	12		
Category	Development well		
KB elevation	86.0		
Water depth	231		
Status	Gas well		
TD drilling	13572 MD	9086 TVD	-9000 SS
TD logging	12600 MD	8345 TVD	-8259 SS
Surface coordinates			
Longitude	101 : 34 : 7.7		
Latitude	9 : 4 : 11.0		
UTM 47 X	782348		
UTM 47Y	1003480		
Bottom hole coordinates			
Longitude	101 : 35 : 38.3		
Latitude	9 : 4 : 38.7		
UTM 47 X	785108		
UTM 47Y	1004350		
Displacement	9493 ft		
Max angle	58.90		
Hydrocarbon summary			
○	162 ft hydrocarbon to base in 14 zones includes 0 ft oil to base in 0 zones		
⊖	6 ft hydrocarbon on water in 1 zones includes 0 ft oil on water in 0 zones		
⊗	excludes 100 ft in 8 additional zones of interest		

Table A-2 Lithological description of B well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD2996.8- 4323.5 MD 4110 - 6510 SS -2910 - -4199	-2911--2992	gray clay 95%, coal or coaly shale 5%	-2910--4199	can not interprete			
	-2992--3074	gray clay 95%, coal or coaly shale 5%					
	-3074--3156	gray clay 95%, coal or coaly shale 5%					
	-3156--3234	gray clay 95%, coal or coaly shale 5%					
	-3234--3320	gray clay 95%, coal or coaly shale 5%					
	-3320--3402	gray clay 80%, coal or coaly shale 20%					
	-3420--3486	gray clay 80%, coal or coaly shale 20%					
	-3486--3572	gray clay 70%, coal or coaly shale 30%					
	-3572--3656	gray clay 70%, coal or coaly shale 30%					
	-3656--3739	gray clay 70%, coal or coaly shale 30%					
	-3739--3820	gray clay 70%, coal or coaly shale 30%					
	-3820--3902	gray clay 70%, coal or coaly shale 30%					
	-3902--3986	gray clay 80%, coal or coaly shale 20%					
	-3986--4070	gray clay 80%, coal or coaly shale 20%					
	-4070--4153	gray clay 80%, coal or coaly shale 20%					
	-4153--4199	gray clay 80%, coal or coaly shale 20%					
4 VD4325- 6999.6 MD 6510 - 10710 SS -4199 - -6880	-4199--4238	gray clay 80%, coal or coaly shale 20%	-4199--4650	can not interprete			
	-4238--4322	gray clay 80%, coal or coaly shale 20%					

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-4322--4408	gray clay 80%. coal or coaly shale 20%					
	-4408--4495	gray clay 85%, coal or coaly shale 15%					
	-4495--4584	gray clay 85%, coal or coaly shale 15%					
	-4584--4675	gray clay 90%, coal or coaly shale 10%	-4650- -4856	thin layer of clay. shale.			
	-4675--4767	gray and brown or reddish brown clay 100%		sandstone.coal or coaly shale			
	-4767--4858	gray and brown or reddish brown clay 100%	-4856- -4864	wet sandstone	23	87	64
	-4858--4949	gray and brown or reddish brown clay 100%	-4864--4975	thin layer of clay. shale. sandstone.coal or coaly shale			
	-4949--5040	gray and brown or reddish brown clay 100%	-4975—4994	wet sandstone	28	94	100
	-5040--5132	gray and brown or reddish brown clay 100%	-4994—5182	thin layer of clay. shale. sandstone.coal or coaly shale			
	-5132--5226	gray and brown or reddish brown clay 100%	-5182- -5200	wet sandstone	25	100	110
			-5200—5217	thin layer of clay. shale. sandstone.coal or coaly shale			
			-5217—5221	wet sandstone	20	54	473
	-5226--5319	gray and brown or reddish brown clay 100%	-5221—5240	thin layer of clay. shale. sandstone.coal or coaly shale			
			-5240—5252	wet sandstone	19	81	140
			-5252—5262	thin layer of clay. shale. sandstone.coal or coaly shale			
			-5262—5265	wet sandstone	15	65	150
	-5319--5413	gray and brown or reddish brown clay 100%	-5265—5390	thin layer of clay. shale. sandstone.coal or coaly shale			
			-5390—5404	wet sandstone	26	83	75
			-5404—5413	thin layer of clay. shale. sandstone.coal or coaly shale			
	-5413--5509	gray and brown or reddish brown clay 100%	-5413—5428	gas sandstone	28	34	2000
			-5428—5480	thin layer of clay. shale. sandstone.coal or coaly shale			
	-5509--5606	brown or reddish brown clay 90%. sand 10%	-5480—5518	gas sandstone	29	21	2000
			-5518—5583	thin layer of clay. shale. sandstone.coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-5606--5705	brown or reddish brown clay 20%, sand 80%	-5583—5620	gas sandstone	27	29	2000
			-5620—5623	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5705--5804	brown or reddish brown clay 60%, sand 40%	-5623—5625	gas sandstone	24	61	2000
			-5625—5785	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5804--5901	brown or reddish brown clay 90%, sand 10%	-5785—5808	wet sandstone	25	79	1225
			-5808—5900	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5901--6000	brown or reddish brown clay 20%, sand 80%	-5900—5904	wet sandstone	20	90	50
			-5904—5940	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6000--6100	brown or reddish brown clay 75%, sand 20% and coaly shale 5%	-5940—5945	wet sandstone	9	67	800
			-5945—6039	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6039—6043	additional interest sandstone	19	58	1465
			-6043—6055	wet sandstone	19	58	1465
			-6055—6072	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6072—6085	gas sandstone	23	39	2950
	-6100--6200	brown or reddish brown clay 90%, coaly shale 10%	-6085—6109	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6109—6114	gas sandstone	21	55	980
			-6114—6164	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6164—6166	wet sandstone	22	86	400
	-6200--6300	brown or reddish brown clay 95%, coaly shale 5%	-6166—6221	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6221—6230	additional interest sandstone	11	88	1510
	-6300--6401	brown or reddish brown clay 95%, coaly shale 5%	-6230—6338	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6338—6342	wet sandstone	8	56	370
	-6401--6502	brown or reddish brown clay 100%	-6342—6585	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6502--6603	gas sandstone	20	34	1200
	-6502--6603	brown or reddish brown clay 100%	-6595—6608	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6603--6705	gas sandstone	20	34	1200
	-6603--6705	brown or reddish brown clay 100%	-6608—6610	wet sandstone	19	87	830
			-6610—6664	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
	-6705--6810	brown or reddish brown clay 95%, coaly shale 5%	-6664--6670 -6670--6765	gas sandstone thin layer of clay, shale, sandstone, coal or coaly shale	25	40	830
	-6810--6880	brown or reddish brown clay 90%, coaly shale 10%	-6765--6772 -6772--6838 -6838--6880	wet sandstone thin layer of clay, shale, sandstone, coal or coaly shale wet sandstone	21 17	79 80	830 369
3 VD6999.6-9052.2 MD10710-13530 SS-6880--8886	-6880--6914	brown or reddish brown clay 90%, coaly shale 10%	-6880--6934	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6914--7018	brown or reddish brown clay 90%, coaly shale 10%	-6934--6940 -6940--6968 -6968--6972 -6972--6982 -6982--6988 -6988--7004 -7004--7018	wet sandstone thin layer of clay, shale, sandstone, coal or coaly shale additional interest sandstone thin layer of clay, shale, sandstone, coal or coaly shale gas sandstone thin layer of clay, shale, sandstone, coal or coaly shale gas sandstone	24 16 17	78 51 29	470 1570 1570
	-7018--7124	brown or reddish brown clay 90%, coaly shale 10%	-7018--7168	thin layer of clay, shale, sandstone, coal or coaly shale			
	-7124--7231	brown or reddish brown clay 90%, coaly shale 10%	-7168--7175 -7175--7204 -7204--7210 -7210--7218 -7218--7220	gas sandstone thin layer of clay, shale, sandstone, coal or coaly shale gas sandstone thin layer of clay, shale, sandstone, coal or coaly shale wet sandstone	18 15 10	51 51 57	1485 630 630
	-7231--7337	brown or reddish brown clay 95%, coaly shale 5%	-7220--7252 -7252--7270 -7270--7334	thin layer of clay, shale, sandstone, coal or coaly shale wet sandstone thin layer of clay, shale, sandstone, coal or coaly shale	18	72	532
	-7337--7441	brown or reddish brown clay 95%, coaly shale 5%	-7334--7352 -7352--7407 -7407--7410	wet sandstone thin layer of clay, shale, sandstone, coal or coaly shale gas sandstone	20 20	82 46	200 780
	-7441--7544	brown or reddish brown	-7410--7465	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		clay 95%,coally shale 5%		sandstone,coal or coaly shale			
			-7465--7482	wet sandstone	11	72	500
			-7482--7520	thin layer of clay, shale.			
				sandstone,coal or coaly shale			
-7544--7649	brown or reddish brown		-7520--7573	wet sandstone	13	80	300
	clay 95%,coally shale 5%		-7573--7713	thin layer of clay, shale.			
-7649--7755	brown or reddish brown			sandstone,coal or coaly shale			
	clay 95%,coally shale 5%		-7713--7722	wet sandstone	14	65	310
-7755--7860	brown or reddish brown		-7722--7779	thin layer of clay, shale.			
	clay 75%,coally shale 5%			sandstone,coal or coaly shale			
	and sand 20%		-7779--7786	gas sandstone	16	47	910
			-7786--7800	wet sandstone	16	47	910
			-7800--7849	thin layer of clay, shale.			
				sandstone,coal or coaly shale			
			-7849--7854	additional interest sandstone	12	53	650
-7860--7966	brown or reddish brown		-7854--8003	thin layer of clay, shale.			
	clay 95%,coally shale 5%			sandstone,coal or coaly shale			
-7966--8054	brown or reddish brown		-8003--8020	gas sandstone	17	55	850
	clay 95%,coally shale 5%						
-8054--8168	brown or reddish brown		-8020--8135	thin layer of clay, shale,			
	clay 90%,coally shale 10%			sandstone,coal or coaly shale			
			-8135--8142	wet sandstone	8	100	80
-8168--8282	brown or reddish brown		-8142--8202	thin layer of clay, shale.			
	clay 90%,coally shale 10%			sandstone,coal or coaly shale			
			-8202--8244	wet sandstone	16	85	120
-8282--8396	brown or reddish brown		-8244--8294	thin layer of clay, shale.			
	clay 95%,coally shale 5%			sandstone,coal or coaly shale			
			-8294--8324	wet sandstone	0	0	130
			-8324--8365	thin layer of clay, shale.			
				sandstone,coal or coaly shale			
-8396--8510	brown or reddish brown		-8365--8408	additional interest sandstone	0	0	170
	clay 95%,coally shale 5%		-8408--8455	thin layer of clay, shale.			
				sandstone,coal or coaly shale			
			-8455--8478	wet sandstone	0	0	60
			-8478--8506	thin layer of clay, shale.			
				sandstone,coal or coaly shale			
-8510--8624	brown or reddish brown		-8506--8518	wet sandstone	0	0	60
	clay 95%,coally shale 5%		-8518--8618	thin layer of clay, shale.			
				sandstone,coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8624--8738	brown or reddish brown clay 95%.coaly shale 5%	-8618--8640	wet sandstone	0	0	60
			-8640--8704	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8704--8724	additional interest sandstone	0	0	170
	-8738--8852	brown or reddish brown clay 95%.coaly shale 5%	-8724--8777	thin layer of clay. shale, sandstone,coal or coaly shale			
			-8777--8785	wet sandstone	0	0	100
	-8852--8886	brown or reddish brown clay 95%.coaly shale 5%	-8785--8886	thin layer of clay. shale. sandstone,coal or coaly shale			
2 VD9052.2-9052.2 MD13530-13530 SS-8886->-8966	-8886--8966	brown or reddish brown clay 95%.coaly shale 5%	-8886--8891	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8891--8920	additional interest sandstone	0	0	176
			-8920-- ?	thin layer of clay. shale. sandstone.coal or coaly shale wet sandstone			

### A-3 Well description of C

#### A-3.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL 71.25% MOECO 23.5% PTTEP 5%		
API number	70311601 0100		
Block	13		
Category	Development gas well		
KB elevation	50.0		
Water depth	227		
Status	Gas well		
TD drilling	12217 MD	8995 TVD	-8945 SS
TD logging	12219 MD	8997 TVD	-8947 SS
Surface coordinates			
Longitude	101 : 37 : 44.6		
Latitude	8 : 55 : 22.9		
UTM 47 X	789089		
UTM 47Y	987294		
Bottom hole coordinates			
Longitude	101 : 38 : 56.7		
Latitude	8 : 55 : 32.0		
UTM 47 X	791291		
UTM 47Y	987589		
Displacement	7290 ft		
Max angle	63.40		
Hydrocarbon summary			
	○ 274 ft hydrocarbon to base in 9 zones		
	incudes 0 ft oil to base in 0 zones		
	⊖ 0 ft hydrocarbon on water in 0 zones		
	incudes 0 ft oil on water in 0 zones		
	⊘ excludes 19 ft in 3 additional zones of interest		

Table A-3 Lithological description of C well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD ? - 4037.3 MD2970-5520 SS-2900--3901	2970-3120	coal or coaly shale 20%, gray clay 80%	-2900--3901	can not interprete			
	3120-3300	coal or coaly shale 20%, gray clay 80%					
	3300-3420	coal or coaly shale 20%, gray clay 80%					
	3420-3570	coal or coaly shale 20%, gray clay 80%					
	3570-3720	coal or coaly shale 20%, gray clay 80%					
	3720-3870	coal or coaly shale 20%, gray clay 80%					
	3870-4020	coal or coaly shale 20%, gray clay 80%					
	4020-4170	coal or coaly shale 20%, gray clay 80%					
	4170-4320	coal or coaly shale 20%, gray clay 80%					
	4320-4470	coal or coaly shale 20%, gray clay 80%					
	4470-4620	coal or coaly shale 20%, gray clay 80%					
	4620-4770	coal or coaly shale 20%, gray clay 80%					
	4770-4920	coal or coaly shale 20%, gray clay 80%					
	4920-5020	coal or coaly shale 20%, gray clay 80%					
	5020-5370	coal or coaly shale 20%, gray clay 80%					
	5370--3901	coal or coaly shale 20%, gray clay 80%					
4	-3901--3987	coal or coaly shale 20%,	-3901--4500	can not interprete			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
VD4037-6194		gray clay 80%					
MD5521-8820	-3987--4066	coal or coaly shale 20%, gray clay 80%					
SS-3902-6110	-4066--4143	coal or coaly shale 20%, gray clay 80%					
	-4143--4219	coal or coaly shale 15%, gray clay 85%					
	-4219--4293	coal or coaly shale 15%, gray clay 85%					
	-4293--4364	coal or coaly shale 10%, gray clay 90%					
	-4364--4435	coal or coaly shale 10%, gray clay 90%					
	-4435--4506	coal or coaly shale 10%, gray clay 90%	-4500--4563	thin layer of clay, shale,			
	-4506--4587	coal or coaly shale 10%, gray clay 90%	-4563--4568	wet sandstone	25	72	9
	-4587--4678	coal or coaly shale 10%, gray clay 90%	-4568--4608	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4608--4610	wet sandstone	20	80	9
			-4610--4650	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4650--4653	wet sandstone	15	99	10
	-4678--4772	gray clay mixed with brown or reddish brown clay 100%	-4653--4710	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4710--4720	wet sandstone	25	84	9
			-4720--4730	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4730--4738	wet sandstone	24	77	10
	-4772--4872	gray clay mixed with brown or reddish brown clay 100%	-4738--4830	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4830--4836	wet sandstone	14	100	10
	-4872--4976	gray clay mixed with brown or reddish brown clay 100%	-4836--4934	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-4976--5085	gray clay mixed with brown or reddish brown clay 100%	-4934--5018	gas sandstone	25	21	2000
			-5018--5023	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5023--5038	wet sandstone	29	74	110
	-5085--5199	coaly shale 5%, brown or reddish brown clay 95%	-5038--5170	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5170--5175	wet sandstone	16	73	70
	-5199--5315	coaly shale 5%, brown or reddish brown clay 95%	-5175--5282	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5282--5295	wet sandstone	16	76	51
	-5315--5434	coaly shale 5%, brown or reddish brown clay 95%	-5295--5488	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5434--5553	coaly shale 5%, brown or reddish brown clay 95%	-5488--5490	wet sandstone	23	83	52
	-5553--5671	coaly shale 5%, brown or reddish brown clay 95%	-5490--5622	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5622--5626	wet sandstone	24	73	62
			-5626--5641	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5641--5644	wet sandstone	23	77	32
	-5671--5790	coaly shale 5%, brown or reddish brown clay 95%	-5644--5705	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5705--5713	wet sandstone	16	54	100
	-5790--5908	coaly shale 5%, brown or reddish brown clay 95%	-5713--5869	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5869--5878	wet sandstone	26	37	110
	-5908--6026	coaly shale 5%, brown or reddish brown clay 95%	-5878--6008	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6008--6012	wet sandstone	14	62	110
	-6026--6110	coaly shale 5%, brown or reddish brown clay 95%	-6012--6110	thin layer of clay, shale, sandstone, coal or coaly shale			
3	-6110--6144	coaly shale 5%, brown or reddish brown clay 95%	-6110--6130	thin layer of clay, shale, sandstone, coal or coaly shale			
VD6194-7793	-6144--6263	coaly shale 5%, brown or reddish brown clay 95%	-6130--6150	gas sandstone	24	24	400
MD8820-10770			-6150--6158	thin layer of clay, shale,			
SS-6110--7756							

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone,coal or coaly shale			
			-6158--6230	wet sandstone	12	79	32
-6263--6382	coaly shale 5%, brown or reddish brown clay 95%		-6230--6410	thin layer of clay, shale, sandstone,coal or coaly shale			
-6382--6501	coaly shale 5%, brown or reddish brown clay 95%		-6410--6435	wet sandstone	23	65	82
			-6435--6475	thin layer of clay, shale, sandstone,coal or coaly shale			
			-6475--6482	wet sandstone	19	46	32
-6501--6620	coaly shale 5%, brown or reddish brown clay 95%		-6482--6689	thin layer of clay, shale, sandstone,coal or coaly shale			
-6620--6741	coaly shale 5%, brown or reddish brown clay 95%		-6689--6692	wet sandstone	13	78	106
-6741--6864	coaly shale 5%, brown or reddish brown clay 95%		-6692--6775	thin layer of clay, shale, sandstone,coal or coaly shale			
			-6775--6779	wet sandstone	7	97	22
-6864--6988	coaly shale 5%, brown or reddish brown clay 95%		-6779--6869	thin layer of clay, shale, sandstone,coal or coaly shale			
			-6869--6872	wet sandstone	11	100	80
			-6872--6950	thin layer of clay, shale, sandstone,coal or coaly shale			
			-6950--6955	wet sandstone	13	91	80
			-6955--6977	thin layer of clay, shale, sandstone,coal or coaly shale			
			-6977--6984	gas sandstone	20	41	80
-6988--7114	brown or reddish brown clay 100%		-6984--7008	thin layer of clay, shale, sandstone,coal or coaly shale			
			-7008--7010	wet sandstone	12	63	52
-7114--7240	brown or reddish brown clay 100%		-7010--7189	thin layer of clay, shale, sandstone,coal or coaly shale			
			-7189--7200	additional interest sandstone	12	65	1300
-7240--7366	brown or reddish brown clay 100%		-7200--7314	thin layer of clay, shale, sandstone,coal or coaly shale			
			-7314--7321	gas sandstone	14	44	400
-7366--7492	brown or reddish brown clay 100%		-7321--7444	thin layer of clay, shale, sandstone,coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-7492--7618	brown or reddish brown clay 100%	-7444--7503	gas sandstone	15	50	1540
			-7503--7555	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7555--7562	wet sandstone	14	77	100
			-7562--7592	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7592--7612	wet sandstone	16	63	96
	-7618--7743	coaly shale 5%, brown or reddish brown clay 95%	-7612--7647	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7647--7664	gas sandstone	19	36	340
			-7664--7732	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7732--7738	wet sandstone	16	63	96
	-7743--7756	coaly shale 5%, brown or reddish brown clay 95%	-7738--7756	thin layer of clay, shale, sandstone, coal or coaly shale			
2	-7756--7868	coaly shale 5%, brown or reddish brown clay 95%	-7756--7938	thin layer of clay, shale, sandstone, coal or coaly shale			
VD7793->8915							
MD10770-12872	-7868--7994	coaly shale 5%, brown or reddish brown clay 95%					
SS-7756->8694							
	-7994--8119	brown or reddish brown clay 100%	-7938--8020	wet sandstone	14	86	82
			-8020--8098	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8098--8104	wet sandstone	6	80	120
	-8119--8244	brown or reddish brown clay 100%	-8104--8150	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8150--8155	wet sandstone	8	75	52
	-8244--8369	coaly shale 5%, brown or reddish brown clay 95%	-8155--8247	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8247--8303	gas sandstone	15	50	2000
	-8369--8493	coaly shale 5%, brown or reddish brown clay 95%	-8303--8438	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8438--8442	wet sandstone	13	75	54
			-8442--8465	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8465--8469	wet sandstone	5	110	30

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8493--8617	brown or reddish brown clay 100%	-8469--8635	thin layer of clay, shale, sandstone, coal or coaly shale			
	-8617--8741	brown or reddish brown clay 100%	-8635--8643	additional interest sandstone	13	48	110
	-8741--8865	brown or reddish brown clay 100%	-8643--8755	thin layer of clay, shale, sandstone, coal or coaly shale			
	>-8865	coaly shale 5%, brown or reddish brown clay 95%	-8755--8762	wet sandstone	14	59	20
			-8762--8830	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8830--8850	wet sandstone	6	49	10
			-8850--8902	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8902--?	gas sandstone	13	59	176

## A-4 Well description of D

### A-4.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL71.25% MOECO23.75% PTTEP5%		
API number	70311800 0200		
Block	13		
Category	Development well		
KB elevation	65.0		
Water depth	232		
Status	Non-comercial gas show		
TD drilling	10663 MD	9548 TVD	-9481 SS
TD logging	10685 MD	9563 TVD	-9498 SS
Surface coordinates			
Longitude	101 : 41 : 24.2		
Latitude	8 : 52 : 21.7		
UTM 47 X	795843		
UTM 47Y	981772		
Bottom hole coordinates			
Longitude	101 : 40 : 49.4		
Latitude	8 : 52 : 22.4		
UTM 47 X	794778		
UTM 47Y	981785		
Displacement	3495 ft		
Max angle	43.50		
Hydrocarbon summary			

- 15 ft hydrocarbon to base in 3 zones  
includes 0 ft oil to base in 0 zones
- ~~⊖~~ 0 ft hydrocarbon on water in 0 zones  
includes 0 ft oil on water in 0 zones
- ~~⊗~~ excludes 29 ft in 5 additional zones of interest

Table A-4 Lithological description of D well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD 2999.8-4049.3 MD3000-4050 SS-2940--3908	-2935--3085	gray clay 90%, coal or coaly shale 10%	-2940--3908	can not interpret			
	-3085--3235	gray clay 90%, coal or coaly shale 10%					
	-3235--3385	gray clay 90%, coal or coaly shale 10%					
	-3385--3535	gray clay 90%, coal or coaly shale 10%					
	-3535--3685	gray clay 90%, coal or coaly shale 10%					
	-3685--3834	gray clay 90%, coal or coaly shale 10%					
	-3834--3908	gray clay 90%, coal or coaly shale 10%					
4 VD4049.3-6228.7 MD4050-6600 SS-3908--6153	-3908--3984	gray clay 90%, coal or coaly shale 10%	-3908--4338	can not interpret			
	-3984--4134	gray clay 90%, coal or coaly shale 10%					
	-4134--4284	gray and brown or reddish brown clay 90%, coal or coaly shale 10%					
	-4284--4433	gray and brown or reddish brown clay 80%, sand 20%	-4338--4360	wet sandstone	27	91	15
	-4433--4578	gray clay mixed with brown or reddish brown clay 100%	-4360--4465	thin layer of clay, shale, sandstone.coal or coaly shale			
			-4465--4525	wet sandstone	27	84	15
			-4525--4567	thin layer of clay, shale, sandstone.coal or coaly shale			
	-4578--4720	gray clay mixed with brown or reddish brown clay 100%	-4567--4577	wet sandstone	27	86	15
			-4577--4666	thin layer of clay, shale, sandstone.coal or coaly shale			
	-4720--4856	gray clay mixed with brown	-4666--4678	wet sandstone	23	80	15

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		or reddish brown clay 100%	-4678--4760	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4760--4775	wet sandstone	26	84	10
			-4775--4799	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4799--4805	wet sandstone	26	70	20
			-4805--4812	thin layer of clay, shale, sandstone, coal or coaly shale			
	-4856--4989	gray clay mixed with brown or reddish brown clay 100%	-4812--4815	wet sandstone	20	86	15
			-4815--4900	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4900--4923	wet sandstone	28	89	25
			-4923--4986	thin layer of clay, shale, sandstone, coal or coaly shale			
	-4989--5117	gray clay mixed with brown or reddish brown clay 100%	-4986--4994	wet sandstone	16	72	15
			-4994--5029	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5029--5033	wet sandstone	21	97	15
			-5033--5054	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5054--5061	gas sandstone	26	37	20
			-5061--5087	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5117--5241	coaly shale 10%, brown or reddish brown clay 90%	-5087--5101	wet sandstone	27	81	15
			-5101--5140	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5241--5362	coaly shale 10%, brown or reddish brown clay 90%	-5140--5169	wet sandstone	26	75	20
			-5169--5250	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5362--5481	coaly shale 10%, brown or reddish brown clay 90%	-5250--5266	wet sandstone	14	97	15
			-5266--5415	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5415--5428	wet sandstone	28	90	20
	-5481--5596	coaly shale 10%, brown or reddish brown clay 90%	-5428--5509	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-5596--5709	coaly shale 10%, brown or reddish brown clay 90%	-5509--5512	wet sandstone	15	96	20
			-5512--5623	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5623--5660	wet sandstone	25	76	22
	-5709--5820	coaly shale 10%, brown or reddish brown clay 90%	-5660--5695	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5695--5700	wet sandstone	26	88	15
			-5700--5718	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5820--5933	coaly shale 10%, brown or reddish brown clay 90%	-5718--5721	wet sandstone	15	93	25
			-5721--5858	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5858--5882	wet sandstone	24	85	40
	-5933--6047	coaly shale 10%, brown or reddish brown clay 90%	-5882--5913	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5913--5916	wet sandstone	17	74	25
			-5916--5958	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6047--6153	coaly shale 10%, brown or reddish brown clay 90%	-5958--5969	wet sandstone	23	78	40
			-5969--6034	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6034--6046	wet sandstone	22	98	45
			-6046--6122	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6122--6124	wet sandstone	17	97	40
3 VD6228.7-8137.7 MD6600-8850 SS-6153--7981	-6153--6164	coaly shale 10%, brown or reddish brown clay 90%	-6124--6153	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6153--6335	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6164--6280	coaly shale 10%, brown or reddish brown clay 90%	-6335--6339	wet sandstone	17	80	30
			-6280--6400	coaly shale 10%, brown or reddish brown clay 90%			
	-6400--6521	coaly shale 5%, brown or reddish brown clay 95%	-6339--6435	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-6435--6445	wet sandstone	22	80	35
			-6445--6516	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6516--6519	wet sandstone	14	100	45
-6521--6645	coaly shale 5%, brown or reddish brown clay 95%		-6519--6542	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6542--6554	wet sandstone	17	79	45
			-6554--6577	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6577--6612	wet sandstone	21	85	60
-6645--6771	coaly shale 5%, brown or reddish brown clay 95%		-6612--6648	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6648--6656	wet sandstone	15	82	25
			-6656--6713	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6713--6718	wet sandstone	18	83	25
-6771--6898	coaly shale 5%, brown or reddish brown clay 95%		-6718--6828	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6828--6870	wet sandstone	19	81	60
-6898--7024	coaly shale 5%, brown or reddish brown clay 95%		-6870--6990	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6990--7006	wet sandstone	19	90	90
-7024--7155	coaly shale 5%, brown or reddish brown clay 95%		-7006--7034	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7034--7045	wet sandstone	18	82	80
			-7045--7062	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7062--7065	wet sandstone	11	100	60
			-7065--7128	thin layer of clay, shale, sandstone, coal or coaly shale			
			-7128--7132	wet sandstone	13	69	90
			-7132--7150	thin layer of clay, shale, sandstone, coal or coaly shale			
-7155--7286	coaly shale 5%, brown or reddish brown clay 95%		-7150--7158	wet sandstone	7	100	30
			-7158--7174	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
			-7174--7178	additional interest sandstone	14	63	80
			-7178--7206	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7206--7209	wet sandstone	15	95	80
			-7209--7279	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7279--7283	additional interest sandstone	10	65	40
	-7286--7420	coaly shale 5%, brown or reddish brown clay 95%	-7283--7331	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7331--7341	additional interest sandstone	19	69	174
			-7341--7410	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7410--7416	wet sandstone	8	87	45
	-7420--7553	coaly shale 5%, brown or reddish brown clay 95%	-7416--7575	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
	-7553--7686	coaly shale 5%, brown or reddish brown clay 95%	-7575--7582	wet sandstone	6	100	40
			-7582--7607	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7607--7614	wet sandstone	11	94	40
	-7686--7817	coaly shale 5%, brown or reddish brown clay 95%	-7614--7784	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7784--7801	wet sandstone	8	89	70
			-7801--7810	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7810--7812	wet sandstone	15	72	40
	-7817--7946	coaly shale 5%, brown or reddish brown clay 95%	-7812--7842	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7842--7860	wet sandstone	15	78	45
			-7860--7903	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7903--7905	wet sandstone	6	89	40
	-7946--7981	coaly shale 5%, brown or reddish brown clay 95%	-7905--7952	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7952--7962	gas sandstone	15	59	200

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-7962--7981	thin layer of clay, shale, sandstone, coal or coaly shale			
2	-7981--8073	coaly shale 5%, brown or reddish brown clay 95%	-7981--8019	thin layer of clay, shale, sandstone, coal or coaly shale			
VD8137.7-9535.7			-8019--8021	wet sandstone	10	93	182
MD8850-10650			-8021--8042	thin layer of clay, shale, sandstone, coal or coaly shale			
SS-7981--9470			-8042--8048	gas sandstone	14	53	80
			-8048--8065	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8065--8070	wet sandstone	12	78	80
	-8073--8198	coaly shale 5%, brown or reddish brown clay 95%	-8070--8100	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8100--8103	wet sandstone	8	100	100
			-8103--8131	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8131--8141	wet sandstone	9	99	60
			-8141--8150	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8150--8157	wet sandstone	5	100	40
			-8157--8172	thin layer of clay, shale, sandstone, coal or coaly shale			
	-8198--8321	coaly shale 5%, brown or reddish brown clay 95%	-8172--8260	wet sandstone	14	86	50
			-8260--8275	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8275--8281	wet sandstone	13	92	50
			-8281--8300	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8300--8305	wet sandstone	5	100	45
	-8321--8442	coaly shale 5%, brown or reddish brown clay 95%	-8305--8375	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8375--8381	wet sandstone	8	100	40
			-8381--8429	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8429--8434	wet sandstone	11	73	55

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8442--8561	coaly shale 5%, brown or reddish brown clay 95%	-8434--8456	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8456--8464	wet sandstone	5	100	60
	-8561--8677	coaly shale 5%, brown or reddish brown clay 95%	-8464--8607	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8607--8612	wet sandstone	8	100	45
	-8677--8790	coaly shale 5%, brown or reddish brown clay 95%	-8612--8780	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8780--8787	wet sandstone	10	99	70
	-8790--8901	coaly shale 5%, brown or reddish brown clay 95%	-8787--8800	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8800--8826	wet sandstone	13	88	60
			-8826--8852	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8852--8853	wet sandstone	5	95	50
			-8853--8862	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8862--8865	wet sandstone	12	93	173
			-8865--8875	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8875--8878	wet sandstone	10	75	120
	-8901--9012	coaly shale 5%, brown or reddish brown clay 95%	-8878--8908	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8908--8921	wet sandstone	13	78	80
	-9012--9124	brown or reddish brown clay 100%	-8921--9056	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9056--9059	wet sandstone	4	100	70
			-9059--9086	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9086--9095	additional interest sandstone	13	64	145
			-9095--9107	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9107--9109	wet sandstone	4	100	50
	-9124--9238	coaly shale 5%, brown or reddish brown clay 95%	-9109--9164	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description								
	Lithological Cutting Log		Subsea Geophysical Correlation log						
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit		
	-9238--9354	coaly shale 5%, brown or reddish brown clay 95%	-9164--9166	wet sandstone	8	100	45		
			-9166--9198	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9198--9225	wet sandstone	11	77	191		
			-9225--9242	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9242--9248	wet sandstone	8	86	141		
			-9248--9323	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9323--9325	wet sandstone	4	100	40		
			-9325--9335	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9335--9338	wet sandstone	8	77	40		
			-9338--9342	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9342--9348	wet sandstone	8	83	117		
			-9354--9471	brown or reddish brown clay 100%	-9348--9400	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9400--9403	wet sandstone	8	87	55		
			-9403--9448	thin layer of clay, shale, sandstone, coal or coaly shale					
			-9448--9453	additional interest sandstone	6	64	85		
			-9453--?	thin layer of clay, shale, sandstone, coal or coaly shale					

**A-5 Well description of E****A-5.1 Information Description**

Operator	UNOCAL THAILAND		
Partner	UNOCAL70% MOECO20% SEAPECT10%		
API number	70312402 0100		
Block	10		
Category	Development well		
KB elevation	50.0		
Water depth	243		
Status	Gas well		
TD drilling	11740 MD	10064 TVD	-10014 SS
TD logging	11750 MD	10070 TVD	-10020 SS
Surface coordinates			
Longitude	101 : 26 : 39.2		
Latitude	9 : 49 : 48.3		
UTM 47 X	768334		
UTM 47Y	1087518		
Bottom hole coordinates			
Longitude	101 : 27 : 21.3		
Latitude	9 : 50 : 5.7		
UTM 47 X	769334		
UTM 47Y	1088061		
Displacement	4559 ft		
Max angle	57.25		
Hydrocarbon summary			
	○ 87 ft hydrocarbon to base in 7 zones includes 0 ft oil to base in 0 zones		
	<del>○</del> 24 ft hydrocarbon on water in 2 zones includes 0 ft oil on water in 0 zones		
	<del>○</del> excludes 27 ft in 3 additional zones of interest		

Table A-5 Lithological description of E well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD3090-4138.2 MD3090-4140 SS-2950--4062	-3040--3190	gray clay 85%, coal or coaly shale 15%	-2950--4062	can not interprete			
	-3190--3340	gray clay 85%, coal or coaly shale 15%					
	-3340--3490	gray clay 85%, coal or coaly shale 15%					
	-3490--3640	gray clay 85%, coal or coaly shale 15%					
	-3690--3790	gray clay 90%, coal or coaly shale 10%					
	-3790--3940	gray clay 90%, coal or coaly shale 10%					
	-3940--4062	gray clay 90%, coal or coaly shale 10%					
4 VD4138.2-6903.3 MD4140-7290 SS-4062--6810	-4062--4088	gray clay 90%, coal or coaly shale 10%	-3908--4338	can not interprete			
	-4088--4234	gray clay 90%, coal or coaly shale 10%					
	-4234--4377	gray clay 95%, coal or coaly shale 15%	-4338--4360	wet sandstone	27	91	15
	-4377--4515	gray clay mixed with brown or rddish brown clay 100%	-4360--4465	thin layer of clay. shale. sandstone.coal or coaly shale			
	-4515--4651	gray clay mixed with brown or rddish brown clay 100%	-4465--4525	wet sandstone	27	84	15
			-4525--4567	thin layer of clay. shale. sandstone.coal or coaly shale			
			-4567--4577	wet sandstone	27	86	15
	-4651--4786	gray clay mixed with brown or rddish brown clay 100%	-4577--4666	thin layer of clay. shale. sandstone.coal or coaly shale			
			-4666--4678	wet sandstone	23	80	15

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-4678--4760	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4760--4775	wet sandstone	26	84	10
	-4786--4920	brown or reddish brown clay 100%	-4775--4799	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4799--4805	wet sandstone	26	70	20
			-4805--4812	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4812--4815	wet sandstone	20	86	15
			-4815--4900	thin layer of clay, shale. sandstone, coal or coaly shale			
	-4920--5054	brown or reddish brown clay 100%	-4900--4923	wet sandstone	28	89	15
			-4923--4986	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4986--4994	wet sandstone	16	72	15
			-4994--5029	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5029--5033	wet sandstone	21	97	15
			-5033--5054	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5054--5187	brown or reddish brown clay 100%	-5054--5061	gas sandstone	26	37	20
			-5061--5087	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5187--5320	brown or reddish brown clay 100%	-5087--5101	wet sandstone	27	81	15
			-5101--5140	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5140--5169	wet sandstone	26	75	20
			-5169--5250	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5250--5266	wet sandstone	14	97	15
	-5320--5452	brown or reddish brown clay 100%	-5266--5415	thin layer of clay, shale. sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-5415--5428	wet sandstone	28	90	20
	-5452--5583	brown or reddish brown clay 100%	-5428--5509	thin layer of clay, shale. sandstone.coal or coaly shale			
			-5509--5512	wet sandstone	15	96	20
	-5583--5713	brown or reddish brown clay 100%	-5512--5623	thin layer of clay, shale. sandstone,coal or coaly shale			
			-5623--5660	wet sandstone	25	76	22
			-5660--5695	thin layer of clay, shale. sandstone.coal or coaly shale			
			-5695--5700	wet sandstone	26	88	15
	-5713--5842	brown or reddish brown clay 100%	-5700--5718	thin layer of clay, shale, sandstone,coal or coaly shale			
			-5718--5721	wet sandstone	15	93	25
	-5842--5971	brown or reddish brown clay 100%	-5721--5858	thin layer of clay, shale. sandstone.coal or coaly shale			
			-5858--5882	wet sandstone	24	85	40
			-5882--5913	thin layer of clay, shale, sandstone.coal or coaly shale			
			-5913--5916	wet sandstone	17	74	25
			-5916--5958	thin layer of clay, shale. sandstone.coal or coaly shale			
			-5958--5966	wet sandstone	23	78	40
	-5971--6100	brown or reddish brown clay 100%	-5966--6034	thin layer of clay, shale. sandstone.coal or coaly shale			
			-6034--6046	wet sandstone	22	98	45
	-6100--6227	brown or reddish brown clay 100%	-6046--6122	thin layer of clay, shale. sandstone.coal or coaly shale			
			-6122--6124	wet sandstone	17	97	40
			-6124--6153	thin layer of clay, shale, sandstone.coal or coaly shale			
	-6227--6354	brown or reddish brown clay 100%	-6153--6335	thin layer of clay, shale. sandstone.coal or coaly shale			

Sequence and Depth (ft)	Description							
	Lithological Cutting Log		Subsea Geophysical Correlation log					
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit	
	-6354--6479	brown or reddish brown clay 100%	-6335--6339	wet sandstone	17	80	30	
			-6339--6435	thin layer of clay, shale. sandstone,coal or coaly shale				
			-6435--6445	wet sandstone	22	80	35	
	-6479--6604	brown or reddish brown clay 100%	-6445--6516	thin layer of clay, shale. sandstone,coal or coaly shale				
			-6516--6519	wet sandstone	14	100	45	
			-6519--6542	thin layer of clay, shale. sandstone,coal or coaly shale				
			-6542--6554	wet sandstone	17	79	45	
			-6554--6577	thin layer of clay, shale. sandstone,coal or coaly shale				
			-6604--6810	brown or reddish brown clay 100%	-6577--6612	wet sandstone	21	85
				-6612--6648	thin layer of clay, shale. sandstone,coal or coaly shale			
				-6648--6656	wet sandstone	15	82	25
				-6656--6713	thin layer of clay, shale. sandstone,coal or coaly shale			
				-6713--6718	wet sandstone	18	83	25
				-6718--6810	thin layer of clay, shale, sandstone,coal or coaly shale			
				3 VD6903.3-8316.7 MD7290-9090 SS-6810--8200	-6810--6853	brown or reddish brown clay 80%, sand 20%	-6810--6828	thin layer of clay, shale. sandstone,coal or coaly shale
-6828--6870	wet sandstone	19	81				60	
-6853--6977	brown or reddish brown clay 100%	-6870--6990	thin layer of clay, shale. sandstone,coal or coaly shale					
		-6990--7006	wet sandstone		19	90	90	
-6977--7100	brown or reddish brown clay 100%	-7006--7034	thin layer of clay, shale. sandstone,coal or coaly shale					
		-7034--7045	wet sandstone		18	82	80	
		-7045--7062	thin layer of clay, shale. sandstone,coal or coaly shale					

Sequence and Depth (ft)	Description								
	Lithological Cutting Log		Subsea Geophysical Correlation log						
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit		
	-7100--7224	brown or reddish brown clay 100%	-7062--7065	wet sandstone	11	100	60		
			-7065--7128	thin layer of clay, shale. sandstone, coal or coaly shale					
			-7128--7132	wet sandstone	13	69	90		
			-7132--7150	thin layer of clay, shale. sandstone, coal or coaly shale					
			-7150--7158	wet sandstone	7	100	30		
			-7158--7174	thin layer of clay, shale. sandstone, coal or coaly shale					
			-7174--7178	additional interest sandstone	14	63	80		
			-7178--7206	thin layer of clay, shale. sandstone, coal or coaly shale					
			-7206--7209	wet sandstone	15	95	80		
			-7224--7346	brown or reddish brown clay 100%	-7209--7279	thin layer of clay, shale. sandstone, coal or coaly shale			
			-7279--7283		additional interest sandstone	10	65	40	
			-7283--7331		thin layer of clay, shale. sandstone, coal or coaly shale				
			-7346--7468	brown or reddish brown clay 100%	-7331--7341	additional interest sandstone	19	69	174
			-7341--7410		thin layer of clay, shale. sandstone, coal or coaly shale				
			-7410--7416	wet sandstone	8	87	45		
			-7468--7590	brown or reddish brown clay 100%	-7416--7575	thin layer of clay, shale. sandstone, coal or coaly shale			
			-7575--7582		wet sandstone	6	100	40	
			-7590--7712	brown or reddish brown clay 100%	-7582--7607	thin layer of clay, shale. sandstone, coal or coaly shale			
-7607--7614	wet sandstone	11	94		40				
-7712--7833	brown or reddish brown clay 100%	-7614--7784	thin layer of clay, shale. sandstone, coal or coaly shale						
-7784--7801		wet sandstone	8	89	70				
-7801--7810		thin layer of clay, shale.							

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
			-7810--7812	wet sandstone	15	72	40
	-7833--7955	brown or reddish brown clay 100%	-7812--7842	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7842--7860	wet sandstone	15	78	45
			-7860--7903	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7903--7905	wet sandstone	6	89	40
			-7905--7952	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
	-7955--8076	brown or reddish brown clay 100%	-7952--7962	gas sandstone	15	59	200
			-7962--7981	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7981--8019	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8019--8021	wet sandstone	10	93	182
			-8021--8042	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8042--8048	gas sandstone	14	53	80
			-8048--8065	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8065--8070	wet sandstone	12	78	80
	-8076--8197	brown or reddish brown clay 100%	-8070--8100	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8100--8103	wet sandstone	8	100	100
			-8103--8131	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8131--8141	wet sandstone	9	99	60
			-8141--8150	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8150--8157	wet sandstone	5	100	40
			-8157--8172	thin layer of clay, shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8197--8200	brown or reddish brown clay 100%	-8172--8200	sandstone.coal or coaly shale wet sandstone	14	86	50
2	-8200--8317	brown or reddish brown clay 100%	-8200--8260	wet sandstone	14	86	50
VD8316.7-10008.9			-8260--8275	thin layer of clay. shale.			
MD9090-11740				sandstone.coal or coaly shale			
SS-8200->-9956			-8275--8281	wet sandstone	13	92	50
			-8281--8300	thin layer of clay. shale, sandstone.coal or coaly shale			
			-8300--8305	wet sandstone	5	100	45
	-8317--8435	brown or reddish brown clay 100%	-8305--8375	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8375--8381	wet sandstone	8	100	40
			-8381--8429	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8429--8434	wet sandstone	11	73	55
	-8435--8554	brown or reddish brown clay 100%	-8434--8456	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8456--8464	wet sandstone	5	100	60
	-8554--8672	brown or reddish brown clay 100%	-8464--8607	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8607--8612	wet sandstone	8	100	45
	-8672--8788	brown or reddish brown clay 100%	-8612--8780	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8780--8787	wet sandstone	10	99	70
	-8788--8887	brown or reddish brown clay 100%	-8787--8800	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8800--8826	wet sandstone	13	88	60
			-8826--8852	thin layer of clay. shale. sandstone.coal or coaly shale			
			-8852--8853	wet sandstone	5	95	50
			-8853--8862	thin layer of clay. shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
			-8862--8865	wet sandstone	12	93	173
			-8865--8875	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8875--8878	wet sandstone	10	75	120
-8887--8987	brown or reddish brown clay 100%		-8878--8908	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-8908--8921	wet sandstone	13	78	80
-8987--9086	brown or reddish brown clay 100%		-8921--9056	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9056--9059	wet sandstone	4	100	70
			-9059--9086	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
-9086--9186	brown or reddish brown clay 80%, sand 20%		-9086--9095	additional interest sandstone	13	64	145
			-9095--9107	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9107--9109	wet sandstone	4	100	50
			-9109--9164	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9164--9166	wet sandstone	8	100	45
-9186--9285	brown or reddish brown clay 40%, sand 60%		-9166--9198	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9198--9225	wet sandstone	11	77	191
			-9225--9242	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9242--9248	wet sandstone	8	86	141
-9285--9381	brown or reddish brown clay 100%		-9248--9323	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9323--9325	wet sandstone	4	100	40
			-9325--9335	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-9335--9338	wet sandstone	8	77	40

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-9338--9342	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9342--9348	wet sandstone	8	83	117
	-9381--9464	brown or reddish brown clay 100%	-9348--9400	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9400--9403	wet sandstone	8	87	55
			-9403--9448	thin layer of clay, shale, sandstone, coal or coaly shale			
			-9448--9453	additional interest sandstone	13	92	69
	-9464--9546	brown or reddish brown clay 100%	-9453-- ?	thin layer of clay, shale, sandstone, coal or coaly shale			
	-9546--9629	brown or reddish brown clay 100%					
	-9629--9711	brown or reddish brown clay 100%					
	-9711--9794	brown or reddish brown clay 100%					
	-9794--9876	brown or reddish brown clay 100%					
	-9876--9959	brown or reddish brown clay 40%. sand 60%					
	>-9959	brown or reddish brown clay 100%					

## A-6 Well description of F

### A-6.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL70% MOECO20% SEAPECT10%		
API number	70314803 0500		
Block	10		
Category	Development well		
KB elevation	97.0		
Water depth	236		
Status	Gas well		
TD drilling	10495 MD	8890 TVD	-8793 SS
TD logging	10494 MD	8890 TVD	-8793 SS
Surface coordinates			
Longitude	101 : 22 : 47.9		
Latitude	9 : 41 : 9.5		
UTM 47 X	761116		
UTM 47Y	1071522		
Bottom hole coordinates			
Longitude	101 : 22 : 14.7		
Latitude	9 : 41 : 48.4		
UTM 47 X	760097		
UTM 47Y	1072709		
Displacement	5135 ft		
Max angle	44.00		
Hydrocarbon summary			
○	24 ft hydrocarbon to base in 4 zones		
	incrudes 0 ft oil to base in 0 zones		
⊖	0 ft hydrocarbon on water in 0 zones		
	incrudes 0 ft oil on water in 0 zones		
⊘	excludes 0 ft in 0 additional zones of interest		

Table A-6 Lithological description of F well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD2788.0-4247.1 MD3120-4920 SS-2691--4100	-2691--2814	coal or coaly shale 20%, gray clay 80%	-2691--4100	can not interprete			
	-2814--2938	coal or coaly shale 20%, gray clay 80%					
	-2938--3061	coal or coaly shale 20%, gray clay 80%					
	-3061--3184	coal or coaly shale 20%, gray clay 80%					
	-3184--3306	coal or coaly shale 20%, gray clay 80%					
	-3306--3427	coal or coaly shale 15%, gray clay 85%					
	-3427--3549	coal or coaly shale 15%, gray clay 85%					
	-3549--3670	coal or coaly shale 15%, gray clay 85%					
	-3670--3791	coal or coaly shale 10%, gray clay 90%					
	-3791--3911	coal or coaly shale 10%, gray clay 90%					
	-3911--4031	coal or coaly shale 10%, gray clay 90%					
	-4031--4100	coal or coaly shale 10%, gray clay 90%					
4 VD4247.1-6266.5 MD4920-7320 SS-4100--6156	-4100--4150	coal or coaly shale 5%, gray clay 95%	-4100--4280	can not interprete			
	-4150--4269	coal or coaly shale 5%, gray clay 95%					
	-4269--4388	gray clay mixed with brown or reddish brown clay 100%	-4280--4310	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4310--4325	wet sandstone	27	77	15
	-4388--4509	gray clay mixed with brown or reddish brown clay 100%	-4325--4418	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-4418--4452	wet sandstone	29	83	30
	-4509--4636	gray clay mixed with brown or reddish brown clay 100%	-4452--4835	thin layer of clay, shale, sandstone, coal or coaly shale			
	-4636--4763	gray clay mixed with brown or reddish brown clay 100%					
	-4763--4888	brown or reddish brown clay 100%	-4835--4838	wet sandstone	31	76	15
			-4838--4890	thin layer of clay, shale, sandstone, coal or coaly shale			
	-4888--5014	brown or reddish brown clay 100%	-4890--4898	wet sandstone	21	75	15
			-4898--4925	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4925--4945	wet sandstone	29	76	15
	-5014--5140	brown or reddish brown clay 100%	-4945--5066	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5066--5090	wet sandstone	26	78	15
			-5090--5100	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5100--5130	wet sandstone	29	90	18
	-5140--5267	brown or reddish brown clay 100%	-5130--5145	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5145--5155	wet sandstone	28	93	15
			-5155--5220	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5220--5230	wet sandstone	21	77	15
	-5267--5395	brown or reddish brown clay 100%	-5230--5400	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5395--5522	brown or reddish brown clay 100%	-5400--5420	wet sandstone	25	81	25
	-5522--5652	brown or reddish brown clay 100%	-5420--5712	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5652--5781	brown or reddish brown clay 100%	-5712--5725	gas sandstone	25	55	125
			-5725--5782	thin layer of clay, shale, sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-5781--5910	brown or reddish brown clay 100%	-5782--5810	wet sandstone	23	88	28
			-5810--5886	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5910--6040	brown or reddish brown clay 100%	-5886--5925	wet sandstone	20	95	45
			-5925--6055	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6040--6156	brown or reddish brown clay 100%	-6055--6112	wet sandstone	23	91	50
			-6112--6156	thin layer of clay, shale, sandstone, coal or coaly shale			
3 VD6266.5-8373.5 MD7320-9870 SS-6156--8238	-6156--6170	brown or reddish brown clay 40%, sand 60%	-6156--6215	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6170--6298	brown or reddish brown clay 80%, sand 20%	-6215--6268	wet sandstone	25	86	15
			-6268--6290	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6298--6424	brown or reddish brown clay 100%	-6290--6320	wet sandstone	21	82	25
			-6320--6478	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6424--6548	brown or reddish brown clay 100%	-6478--6482	wet sandstone	19	94	65
	-6548--6671	brown or reddish brown clay 100%	-6482--6714	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6671--6794	brown or reddish brown clay 100%	-6714--6734	wet sandstone	21	76	32
	-6794--6916	brown or reddish brown clay 95%, coaly shale 5%	-6734--7035	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6916--7039	brown or reddish brown clay 95%, coaly shale 5%	-7035--7038	wet sandstone	15	67	90
			-7038--7175	thin layer of clay, shale, sandstone, coal or coaly shale			
	-7039--7162	brown or reddish brown clay 95%, coaly shale 5%					
	-7162--7284	brown or reddish brown clay 95%, coaly shale 5%	-7175--7182	gas sandstone	20	51	376
			-7182--7235	thin layer of clay, shale, sandstone, coal or coaly shale			
	-7284--7408	brown or reddish brown clay 95%, coaly shale 5%	-7235--7315	wet sandstone	18	80	140
			-7315--7342	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
			-7342--7344	wet sandstone	17	85	45
			-7344--7382	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
	-7408--7531	brown or reddish brown clay	-7382--7420	wet sandstone	15	86	120
		95%, coaly shale 5%	-74420--7498	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
	-7531--7655	brown or reddish brown	-7498--7562	wet sandstone	16	80	166
		clay 100%	-7562--7670	thin layer of clay, shale,			
	-7655--7778	brown or reddish brown		sandstone, coal or coaly shale			
		clay 100%	-7670--7672	wet sandstone	16	77	130
			-7672--7728	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-7728--7755	wet sandstone	16	78	162
	-7778--7903	brown or reddish brown	-7755--7840	thin layer of clay, shale,			
		clay 100%		sandstone, coal or coaly shale			
			-7840--7852	wet sandstone	12	100	50
	-7903--8027	brown or reddish brown	-7852--7960	thin layer of clay, shale,			
		clay 100%		sandstone, coal or coaly shale			
			-7960--7962	gas sandstone	18	64	730
	-8027--8152	brown or reddish brown	-7962--8050	thin layer of clay, shale,			
		clay 100%		sandstone, coal or coaly shale			
			-8050--8085	wet sandstone	21	81	60
			-8085--8130	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-8130--8148	wet sandstone	15	75	35
	-8152--8238	brown or reddish brown	-8148--8208	thin layer of clay, shale,			
		clay 100%		sandstone, coal or coaly shale			
			-8208--8213	wet sandstone	11	100	35
			-8213--8238	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
2	-8238--8276	brown or reddish brown	-8238--8251	thin layer of clay, shale,			
VD8373.5->8869.9		clay 100%		sandstone, coal or coaly shale			
MD9870-10470			-8251--8255	gas sandstone	22	62	50
SS-8238->8773	-8276--8400	brown or reddish brown	-8255--8388	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8400--8525	clay 100% brown or reddish brown	-8388--8430	sandstone, coal or coaly shale wet sandstone	18	80	42
		clay 100%	-8430--8520	thin layer of clay, shale, sandstone, coal or coaly shale			
	-8525--8649	brown or reddish brown clay 100%	-8520--8540	wet sandstone	18	80	34
			-8540--8610	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8610--8622	wet sandstone	21	75	58
	-8649--8773	brown or reddish brown clay 100%	-8622--8700	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8700--8705	wet sandstone	10	100	44
			-8705--8765	thin layer of clay, shale, sandstone, coal or coaly shale			
			-8765--8770	wet sandstone	18	60	88
			-8770-- ?	thin layer of clay, shale, sandstone, coal or coaly shale			

## A-7 Well description of G

### A-7.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL71.25% MOECO23.75% PTTEP5%		
API number	7031801 0600		
Block	10		
Category	Development well		
KB elevation	86.0		
Water depth	236		
Status	Gas and oil well		
TD drilling	10891 MD	8136 TVD	-8050 SS
TD logging	10902 MD	8145 TVD	-8059 SS
Surface coordinates			
Longitude	101 : 18 : 46.9		
Latitude	9 : 40 : 35.4		
UTM 47 X	753775		
UTM 47Y	1070424		
Bottom hole coordinates			
Longitude	101 : 17 : 44.4		
Latitude	9 : 40 : 57.1		
UTM 47 X	751864		
UTM 47Y	1071076		
Displacement	6625 ft		
Max angle	61.40		
Hydrocarbon summary			
	○ 87 ft hydrocarbon to base in 6 zones		
	includes 0 ft oil to base in 0 zones		
	⊖ 30 ft hydrocarbon on water in 3 zones		
	includes 15 ft oil on water in 1 zones		
	⊘ excludes 5 ft in 1 additional zones of interest		

Table A-7 Lithological description of G well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD2975.8-3373.1 MD4000-4600 SS-2889.8--3267	-2890--2984	coal or coaly shale 15%. gray clay 85%	-2889--3267	can not interpret			
	-2984--3080	coal or coaly shale 15%. gray clay 85%					
	-3080--3180	coal or coaly shale 15%. gray clay 85%					
	-3180--3267	coal or coaly shale 15%. gray clay 85%					
4 VD3373.1-5172.4 MD4600-7000 SS-3267--4991	-3267--3287	coal or coaly shale 15%. gray clay 85%	-3267--3750	can not interpret			
	-3287--3401	coal or coaly shale 10%. gray clay 90%					
	-3401--3517	coal or coaly shale 10%. gray clay 90%					
	-3517--3635	coal or coaly shale 10%. gray clay 90%					
	-3635--3753	coal or coaly shale 10%. gray clay 90%	-3750--3778	thin layer of clay. shale.			
	-3753--3871	gray clay mixed with brown or reddish brown clay 100%	-3778--3782	wet sandstone	25	70	5
	-3871--3987	gray clay mixed with brown or reddish brown clay 100%	-3782--3885	thin layer of clay. shale.			
	-3987--4101	gray clay mixed with brown or reddish brown clay 100%	-3885--3898	wet sandstone	26	84	10
	-4101--4216	brown or reddish brown clay 100%	-3898--4005	thin layer of clay. shale. sandstone.coal or coaly shale			
			-4005--4012	wet sandstone	26	83	25
			-4012--4140	thin layer of clay. shale. sandstone.coal or coaly shale			
			-4140--4145	wet sandstone	26	91	20
	-4216--4327	brown or reddish brown clay	-4145--4412	thin layer of clay. shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		100%		sandstone, coal or coaly shale			
	-4327--4437	brown or reddish brown clay	-4412--4448	wet sandstone	31	94	12
		100%	-4448--4510	thin layer of clay, shale,			
	-4437--4546	brown or reddish brown clay		sandstone, coal or coaly shale			
		100%	-4510--4520	wet sandstone	28	95	20
			-4520--4538	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
	-4546--4652	brown or reddish brown clay	-4538--4558	wet sandstone	26	89	12
		100%	-4558--4628	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
	-4652--4758	brown or reddish brown clay	-4628--4655	wet sandstone	27	90	12
		100%	-4655--4692	thin layer of clay, shale,			
				sandstone, coal or coaly shale			
			-4692--4698	wet sandstone	25	91	12
	-4758--4865	brown or reddish brown clay	-4698--4875	thin layer of clay, shale,			
		100%		sandstone, coal or coaly shale			
	-4865--4975	brown or reddish brown clay	-4875--4878	wet sandstone	26	98	13
		100%	-4878--4991	thin layer of clay, shale,			
	-4975--4991	brown or reddish brown clay		sandstone, coal or coaly shale			
		100%					
3	-4991--5086	brown or reddish brown clay	-4991--5055	thin layer of clay, shale,			
VD5172.4-6539.3		100%		sandstone, coal or coaly shale			
MD7000-8800			-5055--5073	wet sandstone	24	99	10
SS-4991--6550	-5086--5196	brown or reddish brown clay	-5073--5095	thin layer of clay, shale,			
		95%, coaly shale 5%		sandstone, coal or coaly shale			
			-5095--5148	wet sandstone	29	97	5
	-5196--5307	brown or reddish brown clay	-5148--5237	thin layer of clay, shale,			
		95%, coaly shale 5%		sandstone, coal or coaly shale			
			-5237--5265	gas sandstone	24	31	40
	-5307--5420	brown or reddish brown clay	-5265--5420	thin layer of clay, shale,			
		95%, coaly shale 5%		sandstone, coal or coaly shale			
	-5420--5537	brown or reddish brown clay	-5420--5424	wet sandstone	19	86	5

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		95%, coaly shale 5%	-5424--5450	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5450--5462	wet sandstone	19	85	5
	-5537--5656	brown or reddish brown clay	-5462--5626	thin layer of clay, shale, sandstone, coal or coaly shale			
		95%, coaly shale 5%	-5626--5652	wet sandstone	24	95	5
	-5656--5775	brown or reddish brown clay	-5652--5853	thin layer of clay, shale, sandstone, coal or coaly shale			
		95%, coaly shale 5%	-5853--5861	gas sandstone	19	50	5
	-5775--5892	brown or reddish brown clay	-5861--5870	wet sandstone	19	50	5
		95%, coaly shale 5%	-5870--5890	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5892--6007	brown or reddish brown clay	-5890--5936	wet sandstone	20	97	8
		95%, coaly shale 5%	-5936--6055	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6007--6120	brown or reddish brown clay	-6055--6078	wet sandstone	24	94	5
		100%	-6078--6116	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6116--6118	wet sandstone	12	70	5
	-6120--6233	brown or reddish brown clay	-6118--6356	thin layer of clay, shale, sandstone, coal or coaly shale			
		95%, coaly shale 5%					
	-6233--6344	brown or reddish brown clay					
		95%, coaly shale 5%					
	-6344--6453	brown or reddish brown clay	-6356--6390	wet sandstone	16	96	5
		95%, coaly shale 5%	-6390--6452	thin layer of clay, shale, sandstone, coal or coaly shale			
	-6453--6550	brown or reddish brown clay	-6452--6470	gas sandstone	17	53	12
		100%	-6470--6550	thin layer of clay, shale, sandstone, coal or coaly shale			
2 VD6539.3->8022.3	-6550--6562	brown or reddish brown clay	-6550--6579	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%					

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
MD8800-10890 SS-6550->-7455	-6562--6669	brown or reddish brown clay					
		100%	-6579--6606	gas sandstone	15	49	18
	-6669--6776	brown or reddish brown clay	-6606--6798	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%					
	-6776--6884	brown or reddish brown clay	-6798--6822	wet sandstone	20	74	10
		100%	-6822--6860	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6860--6874	wet sandstone	21	74	10
	-6884--6994	brown or reddish brown clay	-6874--6915	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%	-6915--6921	additional interest sandstone	19	65	13
			-6921--6976	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6976--6991	gas sandstone	16	53	15
	-6994--7106	brown or reddish brown clay	-6991--7005	wet sandstone	16	53	15
		100%	-7005--7238	thin layer of clay, shale, sandstone, coal or coaly shale			
	-7106--7220	brown or reddish brown clay	-7238--7250	wet sandstone	12	78	42
		100%					
	-7220--7336	brown or reddish brown clay	-7250--7352	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%					
	-7336--7453	brown or reddish brown clay	-7352--7382	gas sandstone	16	57	60
		100%	-7382--7549	thin layer of clay, shale, sandstone, coal or coaly shale			
	-7453--7574	brown or reddish brown clay	-7549--7555	gas sandstone	15	42	5
		100%					
	-7574--7695	brown or reddish brown clay	-7555--7803	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%					
	-7695--7815	brown or reddish brown clay	-7803--7810	gas sandstone	19	60	22
		100%	-7810--7815	wet sandstone	19	60	22
	-7815--7936	brown or reddish brown clay	-7815--7918	thin layer of clay, shale, sandstone, coal or coaly shale			
		100%					
			-7918--7920	wet sandstone	13	80	13
	>-7936	brown or reddish brown clay	-7920--7945	thin layer of clay, shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		100%		sandstone, coal or coaly shale			
			-7945--7955	gas sandstone	12	48	18
			-7955-- ?	thin layer of clay. shale.			
				sandstone, coal or coaly shale			

## A-8 Well description of H

### A-8.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL70% MOECO30%		
API number	70315207 0300		
Block	11		
Category	Development well		
KB elevation	86.0		
Water depth	231		
Status	Gas well		
TD drilling	11931 MD	9255 TVD	-9169 SS
TD logging	11958 MD	9280 TVD	-9194 SS
Surface coordinates			
Longitude	101 : 21 : 38.7		
Latitude	9 : 23 : 1.4		
UTM 47 X	759236		
UTM 47Y	1038066		
Bottom hole coordinates			
Longitude	101 : 22 : 4.2		
Latitude	9 : 23 : 40.0		
UTM 47 X	760008		
UTM 47Y	1039256		
Displacement	4653 ft		
Max angle	60.00		
Hydrocarbon summary			
○	219 ft hydrocarbon to base in 12 zones includes 0 ft oil to base in 0 zones		
⊖	0 ft hydrocarbon on water in 0 zones includes 0 ft oil on water in 0 zones		
⊗	excludes 70 ft in 4 additional zones of interest		

Table A-8 Lithological description of H well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5	-3086--3169	sand 20%. gray clay 65%. coaly shale 15%	-3086--4006	can not interprete			
VD317203-4169.4							
MD4420-8920	-3169--3254	coaly shale 15%. gray clay 85%					
SS-3086--4006	-3254--3344	coaly shale 15%. gray clay 85%					
	-3344--3439	sand 20%. gray clay 65%. coaly shale 15%					
	-3439--3537	sand 20%. gray clay 65%. coaly shale 15%					
	-3537--3641	sand 20%. gray clay 65%. coaly shale 15%					
	-3641--3748	sand 20%. gray clay 65%. coaly shale 15%					
	-3748--3856	sand 20%. gray clay 65%. coaly shale 15%					
	-3856--3969	coaly shale 10%. gray clay 90%					
	-3969--4006	coaly shale 10%. gray clay 90%					
4	-4006--4083	coaly shale 10%. gray clay 90%	-4006--4552	can not interprete			
VD4169.4-6840.0	-4083--4198	coaly shale 5%. gray clay 95%					
MD5920-9920	-4198--4313	coaly shale 5%. gray clay 95%					
SS-4006--6695	-4313--4427	coaly shale 5%. gray clay 95%					
	-4427--4541	coaly shale 5%. gray clay 95%					

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-4541--4654	sand 40%, gray clay 55%. coaly shale 5%	-4552--4634	wet sandstone	27	81	20
	-4654--4765	gray or brown clay 60%. sand 40%	-4634--4845	thin layer of clay, shale. sandstone, coal or coaly shale			
	-4765--4877	gray or brown clay 80%. sand 20%	-4845--4855	wet sandstone	29	92	20
	-4877--4991	gray or brown clay 80%. sand 20%	-4855--4927	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4927--4950	wet sandstone	26	72	25
	-4991--5106	gray or brown clay 20%. sand 80%	-4950--5080	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5080--5107	wet sandstone	24	72	25
	-5106--5226	gray or brown clay 80%. sand 20%	-5107--5200	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5226--5351	gray or brown clay 80%. sand 20%	-5200--5239	wet sandstone	25	91	35
	-5351--5479	brown or reddish brown clay 100%					
	-5479--5608	brown or reddish brown clay 100%					
	-5608--5736	brown or reddish brown clay 100%	-5239--5790	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5736--5863	brown or reddish brown clay 100%	-5790--5803	gas sandstone	23	45	288
			-5803--5858	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5863--5991	brown or reddish brown clay 100%	-5858--5898	gas sandstone	23	24	545
			-5898--5978	thin layer of clay, shale. sandstone, coal or coaly shale			
	-5991--6118	brown or reddish brown clay 100%	-5978--5998	wet sandstone	24	74	35
			-5998--6092	thin layer of clay, shale. sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-6118--6372	brown or reddish brown clay 80%. sand 20%	-6092--6108 -6108--6234	wet sandstone thin layer of clay. shale. sandstone.coal or coaly shale	17	68	40
			-6234--6243 -6243--6250	gas sandstone thin layer of clay. shale. sandstone.coal or coaly shale	26	37	350
			-6250--6268	gas sandstone	20	41	350
	-6372--6500	brown or reddish brown clay 100%	-6268--6480	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6500--6627	brown or reddish brown clay 60%. sand 40%	-6480--6510 -6510--6626	gas sandstone thin layer of clay. shale. sandstone.coal or coaly shale	22	25	279
	-6627--6695	brown or reddish brown clay 100%	-6626--6678 -6678--6695	wet sandstone thin layer of clay. shale. sandstone.coal or coaly shale	23	80	40
3 VD6840.4-9106.7 MD9920-11770 SS-6695--9061	-6695--6754	brown or reddish brown clay 100%	-6695--6780	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6754--6881	brown or reddish brown clay 100%	-6780--6812 -6812--7078	gas sandstone thin layer of clay. shale. sandstone.coal or coaly shale	18	43	317
	-6881--7010	brown or reddish brown clay 100%					
	-7010--7138	brown or reddish brown clay 100%	-7078--7093	wet sandstone	22	76	129
	-7138--7267	brown or reddish brown clay 100%	-7093--7254 -7254--7260	thin layer of clay. shale. sandstone.coal or coaly shale gas sandstone	26	48	109
	-7267--7398	brown or reddish brown clay 100%	-7260--7366 -7366--7380	thin layer of clay. shale. sandstone.coal or coaly shale gas sandstone	17	55	131
	-7398--7530	brown or reddish brown clay 95%. coaly shale 5%	-7380--7936	thin layer of clay. shale. sandstone.coal or coaly shale			
	-7530--7661	brown or reddish brown					

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		clay 100%					
	-7661--7795	brown or reddish brown clay 95%, coaly shale 5%					
	-7795--7930	brown or reddish brown clay 95%, coaly shale 5%	-7936--7950	gas sandstone	18	59	629
	-7930--8064	brown or reddish brown clay 95%, coaly shale 5%	-7950--8061	thin layer of clay, shale. sandstone, coal or coaly shale			
	-8064--8199	brown or reddish brown clay 95%, coaly shale 5%	-8061--8069	additional interest sandstone	12	98	160
			-8069--8136	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8136--8170	gas sandstone	16	49	343
			-8170--8192	thin layer of clay, shale. sandstone, coal or coaly shale			
	-8199--8336	brown or reddish brown clay 95%, coaly shale 5%	-8192--8232	gas sandstone	16	48	570
			-8232--8257	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8257--8267	wet sandstone	15	72	435
			-8267--8269	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8269--8310	additional interest sandstone	17	65	435
	-8336--8473	brown or reddish brown clay 95%, coaly shale 5%	-8310--8364	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8364--8373	wet sandstone	9	100	90
			-8373--8466	thin layer of clay, shale. sandstone, coal or coaly shale			
	-8473--8610	brown or reddish brown clay 95%, coaly shale 5%	-8466--8485	additional interest sandstone	17	66	304
			-8485--8495	wet sandstone	17	66	304
			-8495--8556	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8556--8562	wet sandstone	9	100	185
	-8610--8747	brown or reddish brown clay 95%, coaly shale 5%	-8562--8655	thin layer of clay, shale. sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description									
	Lithological Cutting Log		Subsea Geophysical Correlation log							
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit			
	-8747--8884	brown or reddish brown clay 95%. coaly shale 5%	-8655--8668	wet sandstone	15	77	142			
			-8668--8692	thin layer of clay, shale. sandstone, coal or coaly shale						
			-8692--8730	gas sandstone	15	74	108			
			-8730--8778	thin layer of clay, shale. sandstone, coal or coaly shale						
			-8778--8789	wet sandstone	13	83	95			
			-8789--8811	thin layer of clay, shale. sandstone, coal or coaly shale						
			-8811--8816	gas sandstone	21	56	90			
			-8816--8822	thin layer of clay, shale. sandstone, coal or coaly shale						
			-8822--8826	wet sandstone	8	100	95			
			-8884--9021	brown or reddish brown clay 95%. coaly shale 5%	-8826--9025	thin layer of clay, shale. sandstone, coal or coaly shale				
			-9021--9061	brown or reddish brown clay 95%. coaly shale 5%	-9025--9033	additional interest sandstone	12	73	108	
					-9033--9061	thin layer of clay, shale. sandstone, coal or coaly shale				
			2	-9061--9159	brown or reddish brown clay 95%. coaly shale 5%	-9061--9107	thin layer of clay, shale. sandstone, coal or coaly shale			
			VD9106.7-9245							
MD11770-11931	-9107--9135	wet sandstone	17			89	70			
SS-9061--9172	-9135--9155	thin layer of clay, shale. sandstone, coal or coaly shale								
	-9155--9172	wet sandstone	16			89	45			
		-9172-- ?	thin layer of clay, shale. sandstone, coal or coaly shale							

**A-9 Well description of I**

<b>A-9.1 Information</b>	<b>Description</b>		
Operator	UNOCAL THAILAND		
Partner	UNOCAL80% SEAPECT20%		
API number	70311213 0600		
Block	12		
Category	Development gas well		
KB elevation	86.0		
Water depth	212		
Status	Gas well		
TD drilling	12289 MD	9590 TVD	-9504 SS
TD logging	12282 MD	9583 TVD	-9497 SS
Surface coordinates			
Longitude	101 : 15 : 43.2		
Latitude	9 : 8 : 15.3		
UTM 47 X	748559		
UTM 47Y	1010763		
Bottom hole coordinates			
Longitude	101 : 16 : 12.5		
Latitude	9 : 7 : 14.7		
UTM 47 X	749467		
UTM 47Y	1008905		
Displacement	6786 ft		
Max angle	55.50		
Hydrocarbon summary			
○	260 ft hydrocarbon to base in 12 zones includes 0 ft oil to base in 0 zones		
⊖	23 ft hydrocarbon on water in 1 zones includes 0 ft oil on water in 0 zones		
⊘	excludes 85 ft in 5 additional zones of interest		

Table A-9 Lithological description of I well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5 VD3004.6-3523.4 MD3150-3900 SS-2900--3425	-2919--3024	coal or coaly shale 15%. gray clay 85%	-2900--3425	can not interpret			
	-3024--3126	coal or coaly shale 15%. gray clay 85%					
	-3126--3227	coal or coaly shale 15%. gray clay 85%					
	-3227--3331	coal or coaly shale 15%. gray clay 85%					
	-3331--3425	coal or coaly shale 15%. gray clay 85%					
4 VD3523.4-5293.1 MD3900-6600 SS-3425--5128	-3425--3437	coal or coaly shale 15%. gray clay 85%	-3425--3750	can not interpret			
	-3437--3542	coal or coaly shale 10%. gray clay 90%					
	-3542--3643	coal or coaly shale 10%. gray clay 50%. sand 40%					
	-3643--3738	coal or coaly shale 10%. gray clay 70%. sand 20%					
	-3738--3830	gray clay mixed with brown or reddish brown clay 100%	-3750--3830	thin layer of clay. shale. sandstone, coal or coaly shale			
	-3830--3921	coal or coaly shale 5%. gray clay mixed with brown	-3830--3850	wet sandstone	22	72	77
		or reddish brown clay 95%	-3850--3898	thin layer of clay. shale. sandstone, coal or coaly shale			
			-3898--3922	wet sandstone	15	94	76
	-3921--4010	gray clay mixed with brown or reddish brown clay 100%	-3922--4023	thin layer of clay. shale. sandstone, coal or coaly shale			
	-4010--4098	gray clay mixed with brown or reddish brown clay 100%	-4023--4028	wet sandstone	16	80	65
			-4028--4103	thin layer of clay. shale. sandstone, coal or coaly shale			
	-4098--4189	gray clay mixed with brown or reddish brown clay 100%	-4103--4114	wet sandstone	31	90	72

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-4114--4131	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4131--4135	wet sandstone	19	100	60
-4189--4283	brown or reddish brown clay 100%		-4135--4228	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4228--4282	wet sandstone	29	85	65
-4283--4379	brown or reddish brown clay 100%		-4282--4300	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4300--4324	wet sandstone	14	64	55
-4379--4478	brown or reddish brown clay 100%		-4324--4408	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4408--4410	wet sandstone	22	67	42
			-4410--4438	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4438--4458	wet sandstone	24	67	35
-4478--4579	brown or reddish brown clay 100%		-4458--4510	thin layer of clay, shale, sandstone, coal or coaly shale			
			-4510--4564	wet sandstone	31	92	40
-4579--4683	brown or reddish brown clay 75% sand 20%, coaly shale 5%		-4564--4690	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4690--4737	wet sandstone	26	74	47
-4683--4786	brown or reddish brown clay 100%		-4737--4798	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4798--4800	wet sandstone	17	64	34
-4786--4891	brown or reddish brown clay 40%, sand 60%		-4800--4920	thin layer of clay, shale. sandstone, coal or coaly shale			
			-4920--4954	wet sandstone	28	100	51
			-4954--4992	thin layer of clay, shale. sandstone, coal or coaly shale			
-4996--5101	brown or reddish brown clay 80%, sand 20%		-4992--5000	wet sandstone	24	96	68
			-5000--5069	thin layer of clay, shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone, coal or coaly shale			
			-5069--5076	wet sandstone	22	88	33
			-5076--5098	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
	-5101--5128	brown or reddish brown clay 40%, sand 60%	-5098--5102	wet sandstone	30	66	37
			-5102--5128	thin layer of clay, shale, sandstone, coal or coaly shale			
3	-5128--5207	brown or reddish brown clay 40%, sand 60%	-5128--5169	thin layer of clay, shale.			
VD5293.1-6481.6				sandstone, coal or coaly shale			
MD6600-8250	-5207--5313	brown or reddish brown clay 95%, coaly shale 5%	-5169--5204	wet sandstone	30	92	34
SS-5128--6470			-5204--5455	thin layer of clay, shale.			
	-5313--5418	brown or reddish brown clay 95%, coaly shale 5%		sandstone, coal or coaly shale			
	-5418--5525	brown or reddish brown clay 95%, coaly shale 5%	-5455--5493	wet sandstone	25	89	63
			-5525--5632	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-5564--5566	wet sandstone	26	68	150
			-5566--5578	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-5578--5580	wet sandstone	24	77	150
	-5632--5740	brown or reddish brown clay 95%, coaly shale 5%	-5580--5637	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-5637--5644	gas sandstone	23	41	1700
			-5644--5655	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-5655--5680	wet sandstone	20	75	85
	-5740--5848	brown or reddish brown clay 95%, coaly shale 5%	-5680--5755	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-5755--5760	additional interest sandstone	18	76	400
			-5760--5788	thin layer of clay, shale.			
				sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-5788--5791	wet sandstone	11	83	130
			-5791--5807	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5807--5815	gas sandstone	22	53	721
			-5815--5825	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5825--5829	wet sandstone	14	72	140
	-5848--5955	brown or reddish brown clay 95%. coaly shale 5%	-5829--5852	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5852--5890	wet sandstone	23	81	120
			-5890--5942	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5942--5945	wet sandstone	8	105	100
	-5955--6064	brown or reddish brown clay 95%. coaly shale 5%	-5945--5964	thin layer of clay, shale. sandstone, coal or coaly shale			
			-5964--5985	wet sandstone	19	70	62
	-6064--6175	brown or reddish brown clay 95%. coaly shale 5%	-5985--6125	thin layer of clay, shale. sandstone, coal or coaly shale			
			-6125--6130	wet sandstone	11	98	75
			-6130--6140	thin layer of clay, shale. sandstone, coal or coaly shale			
			-6140--6160	wet sandstone	27	84	190
	-6175--6285	brown or reddish brown clay 95%. coaly shale 5%	-6160--6214	thin layer of clay, shale. sandstone, coal or coaly shale			
			-6214--6220	additional interest sandstone	19	81	360
	-6285--6396	brown or reddish brown clay 95%. coaly shale 5%	-6220--6321	thin layer of clay, shale. sandstone, coal or coaly shale			
			-6321--6360	gas sandstone	18	40	2000
			-6360--6392	thin layer of clay, shale. sandstone, coal or coaly shale			
	-6396--6470	brown or reddish brown clay 95%. coaly shale 5%	-6392--6450	gas sandstone	20	37	2000
			-6450--6470	thin layer of clay, shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
				sandstone.coal or coaly shale			
2	-6470--6507	brown or reddish brown clay 95%. coaly shale 5%	-6470--6512	thin layer of clay. shale. sandstone.coal or coaly shale			
VD6481.6->9464.7	-6507--6618	brown or reddish brown clay 95%. coaly shale 5%	-6512--6535	wet sandstone	20	89	75
MD8250-12280			-6535--6560	thin layer of clay. shale. sandstone.coal or coaly shale			
SS-6470->-7666			-6560--6565	wet sandstone	20	83	53
	-6618--6728	brown or reddish brown clay 75%. coaly shale 5%. sand 20%	-6565--6658	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6658--6672	wet sandstone	20	65	62
			-6672--6685	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6685--6695	wet sandstone	21	70	76
	-6728--6839	brown or reddish brown clay 95%. coaly shale 5%	-6695--6778	thin layer of clay. shale. sandstone.coal or coaly shale			
			-6778--6788	wet sandstone	15	82	63
			-6788--6822	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6839--6949	brown or reddish brown clay 95%. coaly shale 5%	-6822--6854	gas sandstone	21	28	2000
			-6854--6942	thin layer of clay. shale. sandstone.coal or coaly shale			
	-6949--7057	brown or reddish brown clay 95%. coaly shale 5%	-6942--6965	gas sandstone	17	58	310
			-6965--6982	wet sandstone	17	58	310
			-6982--7025	thin layer of clay. shale. sandstone.coal or coaly shale			
	-7057--7166	brown or reddish brown clay 75%. coaly shale 5%. sand 20%	-7025--7067	wet sandstone	21	88	54
			-7067--7086	thin layer of clay. shale. sandstone.coal or coaly shale			
	-7166--7274	brown or reddish brown clay 95%. coaly shale 5%	-7086--7187	wet sandstone	20	82	56
			-7187--7203	thin layer of clay. shale. sandstone.coal or coaly shale			
			-7203--7210	wet sandstone	22	63	65

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-7210--7218	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7218--7220	wet sandstone	9	86	50
			-7220--7258	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7258--7272	wet sandstone	18	75	150
-7274--7382	brown or reddish brown		-7272--7437	thin layer of clay, shale.			
	clay 95%. coaly shale 5%			sandstone, coal or coaly shale			
-7382--7486	brown or reddish brown		-7437--7443	wet sandstone	19	80	60
	clay 95%. coaly shale 5%		-7443--7490	thin layer of clay, shale.			
-7486--7591	brown or reddish brown			sandstone, coal or coaly shale			
	clay 95%. coaly shale 5%		-7490--7500	wet sandstone	19	85	65
-7591--7695	brown or reddish brown		-7500--7605	thin layer of clay, shale.			
	clay 75%. coaly shale 5%.			sandstone, coal or coaly shale			
	sand 20%		-7605--7608	wet sandstone	10	75	80
			-7608--7681	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
-7695--7800	brown or reddish brown		-7681--7710	gas sandstone	18	40	1800
	clay 95%. coaly shale 5%		-7710--7751	additional interest sandstone	16	62	520
			-7751--7765	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7765--7768	wet sandstone	9	79	32
-7800--7908	brown or reddish brown		-7768--7830	thin layer of clay, shale.			
	clay 55%. coaly shale 5%.			sandstone, coal or coaly shale			
	sand 40%		-7830--7840	wet sandstone	17	87	41
			-7840--7862	thin layer of clay, shale.			
				sandstone, coal or coaly shale			
			-7862--7875	wet sandstone	20	50	260
-7908--8018	brown or reddish brown		-7875--7933	thin layer of clay, shale.			
	clay 75%. coaly shale 5%.			sandstone, coal or coaly shale			
	sand 20%		-7933--7948	wet sandstone	20	71	110
-8018--8128	brown or reddish brown		-7948--8058	thin layer of clay, shale.			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		clay 80%. sand 20%,		sandstone, coal or coaly shale			
			-8058--8110	wet sandstone	14	72	32
	-8128--8237	brown or reddish brown	-8110--8129	thin layer of clay. shale.			
		clay 100%		sandstone, coal or coaly shale			
			-8129--8148	wet sandstone	18	62	140
	-8237--8351	brown or reddish brown	-8148--8278	thin layer of clay. shale.			
		clay 40%. sand 60%.		sandstone, coal or coaly shale			
			-8278--8316	wet sandstone	19	67	180
	-8351--8474	brown or reddish brown	-8316--8485	thin layer of clay. shale.			
		clay 100%		sandstone, coal or coaly shale			
	-8474--8597	brown or reddish brown	-8485--8489	wet sandstone	6	93	23
		clay 100%		thin layer of clay. shale.			
			-8489--8588	sandstone, coal or coaly shale			
				wet sandstone	9	89	25
	-8597--8720	brown or reddish brown	-8594--8603	thin layer of clay. shale.			
		clay 80%. sand 20%.		sandstone, coal or coaly shale			
			-8603--8605	wet sandstone	9	94	25
			-8605--8634	thin layer of clay. shale.			
				sandstone, coal or coaly shale			
			-8634--8644	gas sandstone	18	44	50
			-8644--8695	thin layer of clay. shale.			
				sandstone, coal or coaly shale			
			-8695--8714	gas sandstone	16	42	385
	-8720--8850	brown or reddish brown	-8714--8726	thin layer of clay. shale.			
		clay 80%. sand 20%.		sandstone, coal or coaly shale			
			-8726--8755	gas sandstone	15	28	330
	-8850--8981	brown or reddish brown	-8755--8852	thin layer of clay. shale.			
		clay 80%. sand 20%.		sandstone, coal or coaly shale			
			-8852--8867	gas sandstone	16	27	90
			-8867--8920	thin layer of clay. shale.			
				sandstone, coal or coaly shale			
	-8981--9112	brown or reddish brown	-8920--8997	wet sandstone	19	25	250

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-9112--9244	clay 100%	-8997--9163	thin layer of clay, shale.	20	62	600
		brown or reddish brown clay 40%. sand 60%.	-9163--9185	additional interest sandstone			
	-9244--9379	brown or reddish brown clay 80%. sand 20%.	-9185--9213	thin layer of clay, shale.	12	64	110
			-9213--9262	additional interest sandstone			
		-9262--9367	thin layer of clay, shale, sandstone, coal or coaly shale				
	>-9379	brown or reddish brown clay 100%	-9367--9380	wet sandstone	12	70	59
			-9380-- ?	thin layer of clay, shale. sandstone, coal or coaly shale			

## A-10 Well description of J

### A-10.1 Information Description

Operator	UNOCAL THAILAND		
Partner	UNOCAL 70% MOECO 20% SEAPECT 10%		
API number	70310400 0700		
Block	13		
Category	Gas well		
KB elevation	50.0		
Water depth	200		
Status	Gas well		
TD drilling	10393 MD	9600 TVD	-9550 SS
TD logging	10400 MD	9607 TVD	-9557 SS
Surface coordinates			
Longitude	101 : 22 : 28.5		
Latitude	8 : 53 : 43.6		
UTM 47 X	761112		
UTM 47Y	984051		
Bottom hole coordinates			
Longitude	101 : 22 : 14.1		
Latitude	8 : 53 : 10.8		
UTM 47 X	760677		
UTM 47Y	983040		
Displacement	3611 ft		
Max angle	29.00		
Hydrocarbon summary			
○	73 ft hydrocarbon to base in 4 zones		
	includes 0 ft oil to base in 0 zones		
⊖	0 ft hydrocarbon on water in 0 zones		
	includes 0 ft oil on water in 0 zones		
⊘	excludes 0 ft in 0 additional zones of interest		

Table A-10 Lithological description of J well

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
5	-1040--1190	coal or coaly shale 5%. gray clay 95%	-2950--4098	can not interprete			
VD1089.9-4232.3							
MD1090-4540	-1190--1339	gray clay 100%					
SS-2950--4098	-1339--1487	gray clay 100%					
	-1487--1632	gray clay 100%					
	-1632--1773	gray clay 100%					
	-1773--1909	coal or coaly shale 5%. gray clay 95%					
	-1909--2042	coal or coaly shale 5%. gray clay 95%					
	-2042--2174	coal or coaly shale 5%. gray clay 95%					
	-2174--2307	coal or coaly shale 5%. gray clay 95%					
	-2307--2440	gray clay 100%					
	-2440--2573	coal or coaly shale 10%. gray clay 90%					
	-2573--2706	coal or coaly shale 10%. gray clay 90%					
	-2706--2840	coal or coaly shale 10%. gray clay 90%					
	-2840--3108	coal or coaly shale 10%. gray clay 90%					
	-3108--3243	coal or coaly shale 10%. gray clay 90%					
	-3243--3378	coal or coaly shale 10%. gray clay 90%					
	-3378--3513	coal or coaly shale 10%. gray clay 90%					
	-3513--3647	coal or coaly shale 5%					

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-3647--3781	gray clay 95% coal or coaly shale 10%.					
	-3781--3915	gray clay 90% coal or coaly shale 10%.					
	-3915--4050	gray clay 90% coal or coaly shale 10%.					
	-4050--4098	gray clay 90% coal or coaly shale 10%.					
4	-4098--4182	coal or coaly shale 10%.	-4098--4450	can not interpret			
VD4232.3-7049.6	-4182--4316	gray clay 90% coal or coaly shale 10%.					
MD4540-7690	-4316--4450	gray clay 90% coal or coaly shale 5%.					
SS-4098--7003	-4450--4583	gray and brown clay 95% coal or coaly shale 5%.	-4450--4490	thin layer of clay, shale.			
		gray and brown clay 95%	-4490--4552	sandstone, coal or coaly shale wet sandstone	29	105	30
	-4583--4716	gray clay mixed with brown or reddish brown clay 100%	-4452--4682	thin layer of clay, shale.			
			-4682--4688	sandstone, coal or coaly shale wet sandstone	21	95	75
	-4716--4847	brown or reddish brown clay 100%	-4688--4763	thin layer of clay, shale.			
			-4763--4766	sandstone, coal or coaly shale wet sandstone	18	125	20
	-4847--5110	brown or reddish brown clay 100%	-4766--4860	thin layer of clay, shale.			
			-4860--4886	sandstone, coal or coaly shale wet sandstone	26	94	25
	-5110--5242	brown or reddish brown clay 100%	-4886--4940	thin layer of clay, shale.			
			-4940--4960	sandstone, coal or coaly shale wet sandstone	26	103	23
			-4960--4988	thin layer of clay, shale. sandstone, coal or coaly shale			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-4988--4995	wet sandstone	26	98	25
			-4995--5054	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5054--5150	wet sandstone	25	85	24
	-5252--5374	brown or reddish brown clay 100%	-5150--5323	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5323--5330	wet sandstone	24	91	20
	-5374--5507	brown or reddish brown clay 100%	-5330--5420	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5420--5425	wet sandstone	30	88	16
	-5507--5641	brown or reddish brown clay 100%	-5425--5556	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5556--5570	wet sandstone	27	87	20
			-5570--5608	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5608--5610	wet sandstone	20	101	18
	-5641--5774	brown or reddish brown clay 100%	-5610--5700	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5700--5732	wet sandstone	26	160	20
	-5774--5908	brown or reddish brown clay 100%	-5732--5882	thin layer of clay, shale, sandstone, coal or coaly shale			
			-5882--5885	wet sandstone	17	104	10
			-5885--5908	thin layer of clay, shale, sandstone, coal or coaly shale			
	-5908--6043	brown or reddish brown clay 100%	-5908--5910	wet sandstone	23	87	12
	-6043--6179	brown or reddish brown clay 100%	-5910--6088	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6088--6092	wet sandstone	21	92	20
			-6092--6162	thin layer of clay, shale, sandstone, coal or coaly shale			
			-6162--6165	wet sandstone	17	119	18
	-6179--6316	brown or reddish brown clay	-6165--6188	thin layer of clay, shale,			

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
		100%		sandstone.coal or coaly shale			
			-6188--6200	wet sandstone	23	93	15
			-6200--6260	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6260--6265	wet sandstone	21	84	25
			-6265--6298	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6298--6302	wet sandstone	23	73	15
	-6316--6453	brown or reddish brown clay	-6302--6375	thin layer of clay, shale.			
		100%		sandstone.coal or coaly shale			
			-6375--6388	wet sandstone	25	82	20
			-6388--6420	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6420--6434	wet sandstone	25	84	18
	-6453--6590	brown or reddish brown clay	-6434--6482	thin layer of clay, shale.			
		95%, coaly shale 5%		sandstone.coal or coaly shale			
			-6482--6486	gas sandstone	22	69	40
			-6486--6495	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6495--6498	wet sandstone	28	87	15
	-6590--6727	brown or reddish brown clay	-6498--6615	thin layer of clay, shale.			
		95%, coaly shale 5%		sandstone.coal or coaly shale			
			-6615--6628	wet sandstone	28	90	18
			-6628--6705	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6705--6720	wet sandstone	21	116	13
	-6727--6863	brown or reddish brown clay	-6720--6900	thin layer of clay, shale.			
		95%, coaly shale 5%		sandstone.coal or coaly shale			
	-6863--7003	brown or reddish brown clay	-6900--6915	wet sandstone	26	79	104
		95%, coaly shale 5%	-6915--6962	thin layer of clay, shale.			
				sandstone.coal or coaly shale			
			-6962--6982	wet sandstone	19	89	25

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-6982--7003	thin layer of clay, shale. sandstone, coal or coaly shale			
3	-7003--7136	brown or reddish brown clay 95%, coaly shale 5%	-7003--7068	thin layer of clay, shale. sandstone, coal or coaly shale			
VD7049.6-9157.3			-7068--7072	wet sandstone	11	138	25
MD7690-9940			-7072--7125	thin layer of clay, shale. sandstone, coal or coaly shale			
SS-7003--9150			-7125--7135	gas sandstone	19	54	165
	-7136--7272	brown or reddish brown clay 95%, coaly shale 5%	-7135--7332	thin layer of clay, shale. sandstone, coal or coaly shale			
	-7272--7407	brown or reddish brown clay 95%, coaly shale 5%	-7332--7338	wet sandstone	14	76	55
			-7338--7388	thin layer of clay, shale. sandstone, coal or coaly shale			
	-7407--7545	brown or reddish brown clay 95%, coaly shale 5%	-7388--7398	gas sandstone	20	54	280
			-7398--7548	thin layer of clay, shale.			
	-7545--7683	brown or reddish brown clay 95%, coaly shale 5%	-7548--7568	sandstone, coal or coaly shale wet sandstone	18	79	32
			-7568--7692	thin layer of clay, shale. sandstone, coal or coaly shale			
	-7683--7821	brown or reddish brown clay 100%	-7692--7700	wet sandstone	14	89	23
			-7700--7882	thin layer of clay, shale. sandstone, coal or coaly shale			
	-7821--7959	brown or reddish brown clay 100%	-7882--7890	wet sandstone	19	90	32
			-7890--7975	thin layer of clay, shale. sandstone, coal or coaly shale			
	-7959--8100	brown or reddish brown clay 100%	-7975--7980	wet sandstone	13	74	150
			-7980--8032	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8032--8035	wet sandstone	11	97	95
	-8100--8241	brown or reddish brown clay 100%	-8035--8202	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8202--8232	wet sandstone	23	84	80

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
	-8241--8383	brown or reddish brown clay 100%	-8232--8245	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8245--8255	wet sandstone	22	67	95
			-8255--8368	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8368--8372	wet sandstone	15	75	36
	-8383--8527	brown or reddish brown clay 95%, coaly shale 5%	-8372--8398	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8398--8405	wet sandstone	7	113	20
			-8405--8490	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8490--8495	wet sandstone	12	108	80
			-8495--8520	thin layer of clay, shale. sandstone, coal or coaly shale			
	-8527--8671	brown or reddish brown clay 95%, coaly shale 5%	-8520--8550	wet sandstone	19	83	58
			-8550--8615	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8615--8620	wet sandstone	11	104	54
			-8620--8652	thin layer of clay, shale. sandstone, coal or coaly shale			
	-8671--8816	brown or reddish brown clay 100%	-8652--8675	wet sandstone	16	88	98
			-8675--8750	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8750--8805	gas sandstone	15	64	107
	-8816--8961	brown or reddish brown clay 100%	-8805--8868	thin layer of clay, shale. sandstone, coal or coaly shale			
			-8868--8872	wet sandstone	10	93	80
		-8872--8952	thin layer of clay, shale. sandstone, coal or coaly shale				
-8961--9150	brown or reddish brown clay 100%	-8952--8972	wet sandstone	14	83	60	
		-8972--9010	thin layer of clay, shale. sandstone, coal or coaly shale				

Sequence and Depth (ft)	Description						
	Lithological Cutting Log		Subsea Geophysical Correlation log				
	Depth (ft)	Description	Depth (ft)	Description	Porosity (%)	Water Saturate (%)	Total Gas Unit
			-9010--9012	wet sandstone	0	0	0
			-9012--9150	thin layer of clay, shale. sandstone, coal or coaly shale			
2	-9150--9254	brown or reddish brown clay 100%	-9150--9225	thin layer of clay, shale. sandstone, coal or coaly shale			
VD9157.3->9597.4			-9225--9228	wet sandstone	7	113	20
MD9940-10390	-9254--9400	brown or reddish brown clay 100%	-9228-- ?	thin layer of clay, shale, sandstone, coal or coaly shale			
SS-9150->-9542	-9400--9547	brown or reddish brown clay 100%					

**APPENDIX B**

**MACERALS CONTAIN IN  
EACH WELL**

มหาวิทยาลัยเชียงใหม่  
Chiang Mai University

**APPENDIX B-1**  
**TOTAL MACERALS CONTENT IN A WELL**

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
2876.3	-2826.3	3090		3.23	27.42	4.84		14.52	6.45	4.84	4.84	9.68	8.05	14.52	1.61
2990.3	-2940.3	3240		5.33	24	4		10.67	6.67		13.33	8	5.33	20	2.67
3104.4	-3054.4	3390		1.16	13.95	10.47	2.33	16.28	5.81	5.81	13.96	11.63	1.16	16.28	1.16
3218.1	-3168.1	3540		12.2	19.51	7.32	1.22	9.75	3.66	6.1	10.98	4.88	4.88	18.28	1.22
3331.1	-3281.1	3690			10	2.14		17.86	7.86	10	9.28	13.57	4.29	21.43	3.57
3443.5	-3393.5	3840			7.23	4.82	2.41	15.66	3.62	13.25	9.63	8.43	2.41	28.92	3.62
3554.2	-3504.2	3990			8.06	6.46		8.06	8.06	19.35	4.84	11.29		32.26	1.62
3664.6	-3614.6	4140			8.11	4.05	1.35	10.81	8.11	18.92	4.05	10.81	2.7	27.04	4.05
3773.2	-3723.2	4290		1.28	10.26	2.56	1.28	15.38	10.26	10.26	6.41	8.97		28.21	5.13
3881.6	-3831.6	4440			11.11		4.17	4.17	5.55	23.61	8.33	15.28		27.78	
3988.1	-3938.1	4590			6.76	4.05	1.35	21.62	5.41	6.76	17.56	4.05		32.44	
4094.3	-4044.3	4740			6.67	1.33		18.67	12	12	12	4		32	1.33



Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
5687.8	-5637.8	6990											100		
5796.3	-5746.3	7140											100		
5905.4	-5855.4	7290											100		
6014.6	-5964.6	7440											100		
6124.2	-6074.2	7590											100		
6233.8	-6183.8	7740											100		
6344.4	-6294.4	7890											100		
6455.0	-6405.0	8040											100		
6566.0	-6516.6	8190											100		
6678.3	-6628.3	8340											100		
6790.8	-6740.8	8490											100		
6903.4	-6853.4	8640											100		
7010.0	-6967.0	8790											100		
7131.0	-7081.0	8940											100		

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
7246.3	-7196.3	9090											100		
7362.6	-7312.6	9240											100		
7480.0	-7430.0	9390											100		
7598.5	-7548.5	9540											100		
7717.4	-7667.4	9690											100		
7837.0	-7787.0	9840											100		
7956.0	-7906.0	9990											100		
8076.5	-8026.5	10,140											100		
8196.4	-8146.4	10,290											100		
8316.6	-8266.6	10,440											100		
8437.9	-8387.9	10,590											100		
8559.8	-8509.8	10,740											100		
8682.1	-8632.1	10,890											100		
8803.6	-8753.6	11,040											100		



**APPENDIX B-2**  
TOTAL MACERALS CONTENT IN **B** WELL

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite		Liptodetrinite
2996.8	-2910.8	4110					5.88	20.59	14.71	14.71	2.94		8.82	29.41	2.94
3078	-2992	4260				4				4			80	8	4
3159.5	-3073.5	4410		3.57				7.14	3.57	3.57			78.58	3.57	
3242.3	-3156.3	4560		2.44	9.76			12.2	17.07	7.32		2.44	41.45	2.44	4.88
3325.3	-3233.9	4710		2.63	13.16		2.63	13.16	5.26	5.26		2.63	44.74	10.53	
3405.9	-3319.9	4860			13.96	2.32		32.56	2.32	20.95	2.32	2.32	18.6	4.65	
3487.6	-3401.6	5010		4.87				26.83	19.51	17.08	2.44		7.32	21.95	
3572.3	-3486.3	5160						27.5	20	12.5		2.5		35	2.5
3658	-3572	5310			20.83	6.25		27.08	4.17	8.34	10.42	2.08	14.58	4.17	2.08
3742.3	-3656.3	5460			15.15			27.28	9.09	3.03			24.24	18.18	3.03
3824.9	-3738.9	5610			5.26			21.05	2.63	26.32	2.63	10.53	2.63	26.32	2.63
3906.5	-3820.5	5760			15.38	5.13		33.33		20.50	7.71	2.56	5.13	10.26	



Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
5218.2	-5132.2	8010											100		
5312.2	-5226.2	8160											100		
5405.1	-5319.1	8310											100		
5499.1	-5413.1	8460											100		
5595.1	-5509.1	8610											100		
5692.3	-5606.3	8760											100		
5791	-5705	8910											100		
5889.5	-5803.5	9060											100		
5987.3	-5901.3	9210											100		
6086.1	-6000.1	9360													
6186.4	-6100.4	9510		3.45				3.45			13.8		68.96	10.34	
6286.3	-6200.3	9660									3.85		96.15		
6385.9	-6299.9	9810		17.14							11.43		71.43		
6486.8	-6400.8	9960		18.75							3.13		78.13		
											3.85		96.15		

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite	
6587.7	-6501.7	10,110											100	
6688.7	-6602.7	10,260											100	
6791.3	-6705.3	10,410		13.51	5.41						13.51		67.57	
6895.7	-6809.7	10,560		17.14	5.71	2.86	2.86				8.57	2.86	54.29	5.71
6999.6	-6913.6	10,710		18.18	6.06								75.76	
7104	-7018	10,860		18.42	18.42						5.26		55.27	2.63
7209.8	-7123.8	11,010		2.94	20.59					2.94	26.47		47.06	
7317.4	-7231.4	11,160		17.39	2.17						32.61	2.17	43.49	2.17
7423.2	-7337.2	11,310		9.76	12.2			2.44			19.51		53.65	2.44
7527.2	-7441.2	11,460		6.9							6.9		86.2	
7630.3	-7544.3	11,610		51.85	18.52							11.11	18.52	
7734.7	-7648.7	11,760		40	11.44						5.71	5.71	37.14	
7840.6	-7754.6	11,910		26.67	26.67						3.33		23.33	20
7946.2	-7860.2	12,060		48.28	3.45	13.79					3.45	10.34	20.69	



**APPENDIX B-3**  
TOTAL MACERALS CONTENT IN C WELL

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
		2970			8.22	1.37	4.11	30.14	8.22	2.7	8.22	1.37		31.51	4.11
		3120			18.52		5.56	14.81	3.7		7.41			42.59	7.41
		3300			14.06		7.81	18.75	4.69	10.94	4.69	1.56		34.38	3.13
		3420			18.75	1.56	10.94	12.5	15.63	1.56	4.69		1.56	29.69	3.13
		3570			15.69	1.96	1.96	5.88	5.88	5.88	7.84	9.8		43.14	1.96
		3750			1.92	1.92	9.62	21.15	1.92	13.46	3.85			42.31	3.85
		3870			8.33		2.78	8.33	2.78	25				52.78	
		4020			3.77		9.43	15.09	15.09	5.66	3.77	1.89		41.51	3.77
		4170			1.96		7.84	25.49	17.65	7.84	7.84			29.41	1.96
		4320			5.13		7.69	25.64	5.13	7.69	5.13			41.03	2.56
		4470			4.55		13.64	9.09	9.09	29.55				34.09	

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
		4620			2.22		2.22	17.78		28.89	2.22	2.22		44.44	
		4770						8.57		22.86		5.71		62.86	
		4920			2.22		2.22	4.44	15.56	24.44	6.67			42.22	2.22
		5020					7.5	5	10	25	5			47.5	
		5220			7.84			13.73	3.92	23.53	5.88	1.96		41.18	1.96
		5370						12.9		16.13	3.23			67.74	
4037.3	-3987.3	5520													
4116.0	-4066.0	5670					3.13	18.75	3.13	9.38				65.63	
4193.4	-4143.4	5820					1.96	17.65	15.69	13.73	5.88			41.18	3.92
4268.9	-4218.9	5970					3.77	13.21	3.77	26.42	7.54	1.89		41.51	1.89
4342.8	-4292.8	6120					5.56	8.33		16.67	2.78			66.67	
4414.3	-4364.3	6270			9.62	3.85	3.85	15.38	5.77	17.31	5.77		1.92	34.62	1.92
4484.4	-4434.8	6420			26.19	4.76		4.76	4.76	4.76	9.52		16.67	28.57	

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
4556.4	-4506.4	6570			3.85								96.15		
4637.3	-4587.3	6720											100		
4728.1	-4678.1	6870											100		
4822.4	-4772.4	7020											100		
4921.9	-4871.9	7170											100		
5026.2	-4976.2	7320											100		
5135.2	-5085.2	7470		3.33	6.67						3.33		83.33	3.33	
5248.5	-5198.5	7620											100		
5365.2	-5315.2	7770		14.29	14.29						11.9		59.52		
5483.9	-5433.9	7920		16.67	18.75			2.08			12.5		50		
5602.8	-5552.8	8070		24.53	32.08			5.66			1.89	3.77	26.42	5.66	
5721.4	-5671.4	8220			6.45			3.23			9.68		74.19	6.45	
5839.8	-5798.8	8370		15.52	25.86			3.45			18.96	1.72	27.59	6.9	

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite	
5957.8	-5907.8	8520		25.76	27.27						10.61		36.36	
6075.8	-6025.8	8670											100	
6194.1	-6144.1	8820		20.63	30.16			3.17			7.94		23.81	14.29
6312.7	-6262.7	8970		11.36	31.82						4.55		34.09	18.18
6431.6	-6381.6	9120		12.5	25			2.08		2.08	25		25	8.33
6550.7	-6500.7	9270		25.76	33.33			1.52			4.55	4.55	25.76	4.55
6670.2	-6620.2	9420		36.23	34.78							5.8	21.74	1.45
6790.9	-6740.9	9570		26.87	29.85			1.49			8.96		23.88	8.96
6913.5	-6863.5	9720		30.43	34.78			1.45			1.45		31.88	
7038.1	-6963.5	9870		30	31.43						4.29		34.29	
7163.9	-7113.9	10,020		23.73	32.2						10.17		33.9	
7289.7	-7239.7	10,170		29.23	35.38						3.08		32.31	
7415.6	-7365.6	10,320		32.88	34.25								32.88	

Depth			Vitrinite Group			Liptinite Group									Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite	Liptodetrinite	
7541.8	-7491.8	10,470		32.88	34.25								32.88		
7668.0	-7618.0	10,620		23.21	28.57		3.57			1.79	1.79	1.79	30.36	8.93	
7793.3	-7743.3	10,770		31.51	34.25							2.74	31.51		
7918.4	-7868.4	10,920		23.08	42.31			1.92					23.08	9.62	
8043.5	-7993.5	11,070											100		
8168.6	-8118.6	11,220											100		
8293.6	-8243.6	11,370		32.26	38.71						1.61		19.35	8.06	
8418.7	-8368.7	11,520		26.39	33.33		2.78	1.39			2.78		29.17	4.17	
8543.2	-8493.2	11,670		30.56	30.56						4.17		34.72		
8667.2	-8617.2	11,820		44.9	2.04						4.08		48.98		
8791.2	-8741.2	11,970		32.88	34.25								32.88		
8915.2	-8865.2	12,120		31.88	34.78						1.45		31.88		
		12,270		26.32	42.11								24.56	7.02	



**APPENDIX B-4**  
**TOTAL MACERALS CONTENT IN D WELL**

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
2999.8	-2934.8	3000		8.16	22.45			2.04	6.12	2.04	2.04	12.24	4.08	26.53	14.3
3149.8	-3084.8	3190		8	20	2		12	2	2	24		20	8	2
3299.7	-3234.7	3300		6.67	18.33	10	3.33	5			23.34	3.33	16.67	13.33	
3449.7	-3384.7	3450		2.04	26.53		6.12			8.16	16.32	12.25	10.21	18.37	
3599.6	-3534.6	3600		9.8	17.65	5.89	5.89	7.84			19.6		25.49	7.84	
3749.6	-3684.6	3750		1.92	32.69	1.92	3.85	9.62	1.92	1.92	7.7		15.38	19.23	3.85
3899.5	-3834.5	3900		1.82	18.18	1.82	9.09	14.54	1.82	7.28	9.09	3.63	9.09	21.82	1.82
4049.5	-3984.5	4050		7.84	27.45		3.92	5.88		1.96	3.92	3.92	17.65	27.46	
4199.3	-4134.3	4200		2.17	32.61		4.35	10.87	2.17	2.17	8.7	4.35	15.22	17.39	
4348.9	-4283.9	4350			19.23						3.85		76.92		
4497.6	-4432.6	4500											100		

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinife	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinite
4642.9	-4577.9	4650											100	
4784.5	-4719.5	4800											100	
4921.3	-4856.3	4950											100	
5053.7	-4988.7	5100											100	
5181.5	-5116.5	5250											100	
5306.3	-5241.3	5400		2.56	15.38			2.56			7.7		58.98	12.82
5427.5	-5362.5	5550		11.86	35.6			5.08			5.08		20.34	22.04
5545.9	-5480.9	5700		2.5	15						12.5	2.5	52.5	15
5661.1	-5596.1	5850			6.12			2.04			44.9		44.9	2.04
5773.7	-5708.7	6000		11.11	22.22			1.85			14.82	1.85	46.3	1.85
5885.3	-5820.3	6150		11.32	35.85			1.89			3.77		24.53	22.64
5998.3	-5933.3	6300		14.29	23.21			1.79			17.86	1.79	37.49	3.57
6112.3	-6047.3	6450		12.73	30.91			1.82	1.82		10.9		27.27	14.55

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinitite
6228.7	-6163.7	6600		10	32.86		2.86	5.71				4.29	27.14	17.14
6345.1	-6280.1	6750		31.5	28.77						2.74	1.37	32.88	2.74
6465.4	-6400.4	6900		10.17	25.42						16.95		40.68	6.78
6586.3	-6521.3	7050		26.87	28.36						8.95		35.82	
6709.6	-6644.6	7200		28	16						16		40	
6836.1	-6771.1	7350		10.2	44.9			2.04			4.08		38.78	
6962.6	-6897.6	7500		32.26	25.81	1.61					8.06		32.26	
7089.2	-7024.2	7650		23.08	36.92	3.08					1.54		30.76	4.62
7219.6	-7154.6	7800		11.63	58.14							9.3	16.28	4.65
7351.2	-7286.2	7950		14.29	32.65						4.08		44.9	4.08
7484.5	-7419.5	8100		21.43	44.64						1.79		25	7.14
7617.9	-7552.9	8250		32.88	34.24								32.88	
7750.6	-7685.6	8400		32.88	34.25								32.88	

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinitite
7881.5	-7816.5	8550		50									50	
8010.7	-7945.7	8700		31.03	36.22						1.72		31.03	
8137.7	-8072.7	8850		11.11	55.56								11.11	22.22
8262.7	-8197.7	-9000		31.94	34.72								31.94	1.4
8386.3	-8321.3	9150		32.88	34.24								32.88	
8507.5	-8442.5	9300		25	46.16						1.92		25	1.92
8626.2	-8561.2	9450		37.7	24.6								37.7	
8741.8	-8676.8	9600		29.51	40.98								29.51	
8855.4	-8790.4	9750		31.88	36.24								31.88	
8966.1	8901.1	9900		32.47	32.47						1.3		32.47	1.3
9077.3	-9012.3	10,050			4								96	
9188.8	-9123.8	10,200		27.28	36.36								36.36	
9302.5	-9237.5	10350		32.88	34.24								32.88	



**APPENDIX B-5**  
**TOTAL MACERALS CONTENT IN E WELL**

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite		
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinite	Liptodetrinite
3090.0	-3040.0	3090			5.71	2.86		14.29	2.86	11.42	2.86	5.71	20	31.43	2.86
3240.0	-3190.0	3240			2.08	4.17	6.25	14.58	2.08	35.43	2.08	2.08	2.08	29.17	
3390.0	-3340.0	3390			4	2	2	18	8	24	4	6	6	26	
3540.0	-3490.0	3540						14.71		32.35		5.88	23.53	20.59	2.94
3690.0	-3640.0	3690			4.44		2.22	17.78	6.67	20		11.11	11.11	26.67	
3840.0	-3790.0	3840			2.7	2.7	2.7	24.33	2.7	5.41	8.11	8.11	21.62	21.62	
3989.7	-3939.7	3990			6.25			27.08	6.25	12.5	10.42	2.08	16.67	18.75	
4138.2	-4088.2	4140			10.53		2.63	21.05		13.16	2.63	2.63	42.11	5.26	
4284.4	-4234.4	4290			9.68			22.58		3.23			58.06	6.45	
4426.8	-4376.8	4440											100		
4565.1	-4515.1	4590											100		
4700.9	-4650.9	4740											100		





Vertical	Depth		Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
8366.7	-8316.7	9090											100		
8485.3	-8435.3	9240											100		
8722.5	-8672.5	9390											100		
8722.5	-8672.5	9540											100		
8837.9	-8787.9	9690											100		
8937.3	-8887.3	9840											100		
9036.8	-8986.8	9990											100		
9136.3	-9086.3	10,140											100		
9235.7	-9185.7	10,290											100		
9335.2	-9285.2	10,440											100		
9431.3	-9381.3	10,590											100		
9513.8	-9463.8	10,740											100		
9596.3	-9546.3	10,890											100		
9678.8	-9628.8	11,040											100		



**APPENDIX B-6**  
TOTAL MACERAL CONTENT IN **F** WELL

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite		Liptodetrinite
2788.0	-2691.0	3120			37.1	3.24	4.84	1.61	1.61	9.67	4.84	1.61	1.61	32.26	1.61
2910.7	-2813.7	3270			31.11		2.22	2.22	2.22	13.33		8.9		40	
3034.5	-2937.5	3420			22.63			16.98	1.89	9.45	7.55	5.65		32.08	3.77
3158.1	-3061.1	3570			14.71	1.47		13.24	2.94	14.71	11.76	7.35		30.88	2.94
3280.7	-3183.7	3720			11.86		6.78	15.25	5.08	13.59	3.39	8.47	1.69	32.2	1.69
3402.6	-3305.6	3870			16.35		3.64	9.09	1.82	21.83	5.45	9.09		30.91	1.82
3524.3	-3427.3	4020			4	2	4	8	2	24	10	8		38	
3645.8	-3548.8	4170			14.88		6.38	6.38		23.43	6.38	4.25		38.3	
3767.0	-3670.0	4320			6.82		2.27	13.64		27.26	4.55	6.82		36.37	2.27
3887.9	-3790.9	4470			2.5		2.5	7.5	2.5	22.5	7.5	2.5		50	2.5
4008.1	-3911.1	4620			15.39	1.92	1.92	7.69	7.69	19.22	1.92	3.85	3.85	36.55	



Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite	
5748.5	-5651.5	6720											100	
5877.6	-5780.6	6870											100	
6007.4	-5910.4	7020												
6137.1	-6040.1	7170									50		50	
6266.5	-6169.5	7320									50		50	
6395.1	-6298.1	7470									50		50	
6521.1	-6424.1	7620									4		96	
6645.5	-6548.5	7770											100	
6768.2	-6671.2	7920											100	
6890.7	-6793.7	8070												
7013.2	-6916.2	8220		14.29	25.71							2.86	57.14	
7135.9	-7038.9	8370		39.29	17.86						1.78		41.07	
7258.6	-7161.6	8520		27.08	31.25						4.17		33.33	4.17
				19.51	24.39							2.44	53.66	



**APPENDIX B-7**  
**TOTAL MACERALS CONTENT IN G WELL**

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite		
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinitite	Liptodetrinite
2975.8	-2889.8	4000			3.71		3.71	18.52	3.71	22.2	1.85	11.11		31.48	3.71
3070.5	-2984.5	4150					4.87	12.19	2.44	2.44	2.44	12.19	2.44	36.59	2.44
3166.1	-3080.1	4300			5.88			17.65	5.89	25.48	1.96	3.92		37.26	1.96
3373.1	-3287.1	4450			2.32		2.32	11.63	4.65	23.27	2.32			53.49	
3487.2	-3401.2	4600						13.17	7.9	21.04	2.63			55.26	
3602.7	-3516.7	4750			2.56			7.69	7.69	15.4	2.56	7.69		53.85	2.56
3720.6	-3634.6	4900			2.94			8.82	2.94	14.7	2.94			64.72	2.94
3839.2	-3753.2	5050		2.38	9.52		2.38	11.9		7.15	9.52	4.77	2.38	50	
3957.4	-3871.4	5200											100		
4072.6	-3986.6	5350											100		
4187.3	-4101.3	5500											100		
4301.7	-4215.7	5650											100		

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite	
4412.7	-4326.7	5800											100	
4522.7	-4436.7	5950											100	
4631.7	-4545.7	6100											100	
4737.7	-4651.7	6250											100	
4843.6	-4757.6	6400											100	
4951.3	-4865.3	6550											100	
5061.4	-4975.4	6700											100	
5172.4	-5086.4	6850											100	
5281.9	-5195.9	7000			44.23		1.92				3.85		26.92	23.08
5392.6	-5306.6	7150		10.42	29.17			2.08					43.75	14.58
5506.0	-5420.0	7300		2.27	40.91			4.55			11.37	2.27	2.27	36.36
5622.8	-5536.8	7450		18.18	30.91			7.27			1.82		20	21.82
5741.8	-5655.8	7600		31.25	31.25								31.25	6.25
5860.7	-5774.7	7750		6.45	6.45						6.45		80.65	







Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite		
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinitite	Liptodetrinite
4398.7	-4312.7	6220													
4513.4	-4427.4	6370			7.4			3.7			3.7		85.2		
4626.8	-4540.8	6520			9.38			9.38				6.25	71.86	3.13	
4739.6	-4653.6	6770											100		
4850.8	-4764.8	6820													
4962.8	-4876.8	6970		3.7	3.7				3.7				88.9		
5076.7	-4990.7	7120											100		
5192.4	-5106.4	7270											100		
5311.6	-5225.6	7420											100		
5437.0	-5351.0	7570											100		
5565.4	-5479.4	7720											100		
5693.6	-5607.6	7870											100		
5821.6	-5735.6	8020											100		
5949.3	-5863.3	8170											100		

Depth			Vitrinite Group			Liptinite Group							Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite		Exsudatinitite
6076.9	-5990.9	8320											100	
6204.3	-6118.3	8470											100	
6331.4	-6245.4	8620											100	
6458.4	-6372.4	8770											100	
6585.6	-6499.6	8920											100	
6712.8	-6626.8	9070											100	
6840.0	-6754.0	9220											100	
6972.4	-6881.4	9370											100	
7095.7	-7009.7	9520											100	
7224.0	-7138.0	9670											100	
7352.8	-7266.8	9820											100	
7482.2	-7398.2	9970											100	
7615.5	-7529.5	10,120		27.27	31.82							2.27	26.14	12.5
7746.9	-7660.9	10,270											100	
				35.3	19.12			1.47			1.47	1.47	33.82	7.35



**APPENDIX B-9**  
TOTAL MACERALS CONTENT IN I WELL

Depth			Vitrinite Group			Liptinite group									Inertinite Group Sclerotinite
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite	Liptodetrinite	
3004.6	-2918.6	3150		2.7	16.23	2.7	2.7	8.11	5.41	2.7	35.13			24.32	
3109.8	-3023.8	3300		5	10		2.5	17.5		17.5	10	5		30	2.5
3211.7	-3125.7	3450		8.7	21.74			8.7		13.05	10.86	4.35	6.51	26.09	
3312.9	-3226.9	3600		6.25	25	6.25	2.08	8.34	2.08	2.08	2.08	14.58	8.34	20.84	2.08
3416.9	-3330.9	3750			10			10		30	2.5	7.5		37.5	2.5
3523.4	-3437.4	3900		4.76	26.2			11.9	2.38	7.14	16.66		4.76	26.2	
3628.1	-3542.1	4050		18.59	30.23	2.32		6.98	2.32		20.97	2.32	4.65	11.62	
3728.8	-3642.8	4200		12.72	21.81	1.82		20	3.64	7.27	10.92	1.82		20	
3824.0	-3738.0	4350		2.94	11.76			2.94		2.94	5.88	2.94	64.71	5.88	
3915.7	-3829.7	4500							4				96		
4007.4	-3921.4	4650			7.41			3.7					81.48	7.41	
4095.4	-4009.4	4800											100		

Depth			Vitrinite Group			Liptinite group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite		Liptodetrinite
4183.8	-4097.8	4950											100		
4275.1	-4189.1	5100			7.69								88.46	3.85	
4369.2	-4283.2	5250											100		
4464.9	4378.9	5400			3.85								92.3	3.85	
4564.0	4478.0	5500											100		
4665.1	4579.1	5700		20.52	7.7			2.56		2.56	2.56		61.54	2.56	
4768.7	4682.7	5850											100		
4872.4	-4786.4	6000											100		
4977.4	-4891.4	6150											100		
5082.4	-4996.4	6300											100		
5187.4	-5101.4	6450								6.25	3.12		62.5	9.38	
5293.1	-5207.1	6600											100		
5398.9	-5312.9	6750		15.38	23.08			19.25	1.92	3.85	3.85		11.54	21.15	
5504.7	-5418.7	6900		14.29	16.67		2.38				19.04		33.33	14.29	
				14.58	33.33		2.08	2.08		2.08	6.25		20.83	18.75	

Depth			Vitrinite Group			Liptinite group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite		Liptodetrinite
5610.6	-5524.6	7050		21.74	13.04			2.17			17.39		28.27	17.39	
5718.2	-5632.2	7200		9.09	32.73			7.27		1.82	9.09	1.82	18.18	20	
5825.8	-5739.8	7350		21.43	26.79		1.79			1.79	5.34	3.57	25	14.29	
5933.5	-5847.5	7500		14	36						8	6	12	24	
6041.1	-5955.1	7650		20	36.36		1.82				1.82	7.27	10.91	21.82	
6150.5	-6064.5	7800		34.69	18.38		2.04	4.08			6.12		26.53	8.16	
6260.7	-6174.7	7950		22.08	32.47			2.6			7.79	1.3	25.97	7.79	
6371.0	-6285.0	8100		27.27	23.64						14.54		32.73	1.82	
6481.6	-6395.6	8250		31.91	19.15						8.51		36.17	4.26	
6592.5	-6506.5	8400		17.39	43.48						2.17	6.52	23.92	6.52	
6703.5	-6617.5	8550		31.48	20.37			1.85		1.85	1.85		33.33	9.27	
6814.2	-6728.2	8700		27.59	29.31			1.72			5.17		29.31	6.9	
6924.6	-6838.6	8850		10.26	2.56		5.13				25.64		53.85	2.56	
7034.8	-6948.8	9000		8.82	8.82						11.77		67.65	2.94	





**APPENDIX B-10**  
TOTAL MACERALS CONTENT IN . . . J . . . WELL

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite		
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocolinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite	Liptodetrinite		
1089.9	-1039.9	1090			44.73			31.58				10.53		13.16		
1239.8	-1189.8	1240											100			
1389.2	-1339.2	1390			3.7			3.7				3.7	88.9			
1537.1	-1487.1	1540												100		
1682.5	-1632.5	1690												100		
1823.2	-1773.2	1840			79.31			13.79						6.9		
1959.4	-1909.4	1990			39.02			7.32					48.78	2.44	2.44	
2092.3	-2042.3	2140			39.22	1.96	3.92	21.57	1.96	3.92	1.96			25.49		
2224.5	-2174.5	2290			32.61	4.35		4.35	4.35	2.17	4.35		17.39	28.26	2.17	
2357.2	-2307.2	2440											100			
2490.0	-2440.0	2590			33.9	3.39	1.69	15.26	3.39	5.08	5.08			28.82	3.39	
2622.8	-2572.8	2740			32.55	2.33	4.64	11.63	6.98	6.98	2.33	2.33		27.9	2.33	

Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocolinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinite		Liptodetrinite
2756.0	-2706.0	2890			19.51	4.88	2.44	24.39			2.44			43.9	2.44
2889.9	-2839.9	3040			23.4	2.13	2.13	17.02	2.13	2.13	2.13	2.13		42.54	4.26
5023.9	-2973.9	3190			38.29	4.26	4.26	25.52		2.13	4.26			21.28	
3158.1	-3108.1	3340			17.65		9.8	15.69	1.96	11.76		1.96		39.22	1.96
3293.1	-3243.1	3490			36.11	2.78		16.66		2.78	5.56			36.11	
3428.0	-3378.0	3640			38.71	3.23		9.68			6.45		35.48	6.45	
3562.7	-3512.7	3790			5.13			5.13	2.56	25.64	5.13	2.56		53.85	
3697.4	-3647.4	3940			8.56	2.86		5.71	8.56	22.88	2.86			45.71	2.86
3831.0	-3781.0	4090			2.86	2.86	2.86	8.56	2.86	14.295	2.86			62.85	
3964.7	-3914.7	4240			5.26	14.04	3.51	5.26		14.04	15.79	3.51		36.84	1.75
4098.5	-4048.5	4390			11.32	7.55	3.77	11.32		9.43	7.55	7.55		41.51	
4232.3	4182.3	4540				6.06		3.03		12.12	12.12			66.67	
4366.3	-4316.3	4690					2.78	16.66		19.453	2.78	2.78		55.56	



Depth			Vitrinite Group			Liptinite Group								Inertinite Group Sclerotinite	
Vertical	Subsea	Sample	Humotelinite	Humodetrinite	Humocollinite	Sporinite	Cutinite	Resinite	Amber	Suberinite	Alginite	Bituminite	Exsudatinitite		Liptodetrinite
6229.3	-6179.3	6790											100		
6366.3	-6316.3	6940											100		
6503.3	-6453.3	7090			8.11					8.11			75.68	8.11	
6640.1	-6590.1	7240			16.67								83.33		
6776.6	-6726.6	7390			7.69								88.46	3.85	
6913.1	-6863.1	7540			37.14								54.29	8.57	
7049.6	-6999.6	7690			13.79								86.21		
7185.8	-7135.8	7840			16.67								83.33		
7321.6	-7271.6	7990			12								88		
7457.4	-7407.4	8140			55.56								44.44		
7595.2	-7545.2	8290			7.41								92.59		
7733.1	-7683.1	8440											100		
7871.0	-7821.0	8590											100		



## CURRICULUM VITAE

Name: Miss Wasana Tanakwang

Date of birth: August 19, 1972

Education:

1994, B.Sc.(Geology), Faculty of Science, Chiang Mai University, Chiang Mai, Thailand.

1999, M.S.(Geology), Faculty of Science, Chiang Mai University, Chiang Mai, Thailand.

Experience:

1994-1995, Geologist at Khun Phang Mine, Uttaradit.

1995-1996, Laboratory Scientist at Northern Ceramic Development Center, Lampang.