



### TOTAL MATERIALS

Well: 6507/8-5 Operator: Statoil  
From/to: 355,0 m 2000,0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost NOK:
21	Bentonite	ton	2 075,00	43 575,00
263	Barite	ton	705,00	185 415,00
8075	CMC HV	kg	14,63	118 137,25
800	Soda Ash	kg	2,38	1 904,00
250	Bicarbonate Sod.	kg	3,61	902,50
9150	Celpol SL	kg	32,35	296 002,50
1600	Celpol Reg	kg	32,35	51 760,00
300	Ancocide	kg	16,52	4 956,00
10100	Gypsum	kg	1,92	19 392,00
120	Lime	kg	1,56	187,20
	VOLUME	m3		1609,00
<b>Total Cost for Well:</b>				<b>722 231,45</b>
<b>Cost per meter:</b>				<b>439,05</b>
<u>Drilling days: 10</u>	<b>Cost per m3:</b>			<b>448,87</b>



### CASING INTERVAL

**Well:** 6507/8-5      **Operator:** Statoil  
**Casing:** 30"      **From/to:** 355,0 m      417,0 m  
**Bit:** 36"      **From/to:** 355,0 m      420,0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost NOK:
13	Wyoming Bentonite	mt	2 075,00	26 975,00
550	Soda Ash	kg	2,38	1 309,00
3900	CMC EHV	kg	14,63	57 057,00
100	Sod. Bicarbonate	kg	3,61	361,00
50	Ancocide	kg	16,52	826,00
VOLUME      m3				325,00
<b>Total Cost for Interval:</b>				<b>86 528,00</b>
<b>Cost per meter</b>				<b>1 331,20</b>
<b>Drilling days: 2</b>	<b>Cost per m3:</b>			<b>266,24</b>



### CASING INTERVAL

**Well:** 6507/8-5      **Operator:** Statoil  
**Casing:** 20x13 3/8"      **From/to:** 355,0 m      808,0 m  
**Bit:** 17 1/2"      **From/to:** 420,0 m      817,0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost NOK:
77	Barite	metric ton	705,00	54 285,00
8	Wyoming Bentonite	metric ton	2 075,00	16 600,00
4025	CMC EHV	kg	14,63	58 885,75
75	Celpol Reg.	kg	32,35	2 426,25
250	Soda Ash	kg	2,38	595,00
<b>VOLUME      m3</b>				<b>583,00</b>
<b>Total Cost for Interval:</b>				<b>132 792,00</b>
<b>Cost per meter</b>				<b>334,49</b>
<b>Drilling days: 4</b>	<b>Cost per m3:</b>			<b>227,77</b>



### CASING INTERVAL

Well: 6507/8-5 Operator: Statoil  
Casing: From/to:  
Bit: 12 1/4" From/to: 817,0 m 2000,0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost NOK:
186	Barite	metric ton	705,00	131 130,00
250	Ancocide	kg	16,52	4 130,00
10100	Gypsum	kg	1,92	19 392,00
9150	Celpol S/L	kg	32,35	296 002,50
1525	Celpol Reg.	kg	32,35	49 333,75
120	Lime	kg	1,56	187,20
150	CMC EHV	kg	14,63	2 194,50
150	Sod. Bicarb.	kg	3,61	541,50
	VOLUME	m3		701,00
<b>Total Cost for Interval:</b>				<b>502 911,45</b>
<b>Cost per meter</b>				<b>425,12</b>
<b>Drilling days: 4</b>	<b>Cost per m3:</b>			<b>717,42</b>

Well: 6507/8-5

Rig: ROSS RIG

Product	Unit size	Unit price NOK	36" sect.	Cost NOK	17 1/2" sect.	Cost NOK	12 1/4" sect.	Cost NOK	Total consumed	Total cost NOK
Barite	mt	705,00			77	54 285,00	186	131 130,00	263	185 415,00
Wyoming bentonite	mt	2 075,00	13	26 975,00	8	16 600,00			21	43 575,00
Soda Ash	kg	2,38	550	1 309,00	250	595,00			800	1 904,00
Celpol LV	kg	32,35					9150	296 002,50	9150	296 002,50
Celpol Reg	kg	32,35			75	2 426,25	1525	49 333,75	1600	51 760,00
Ancocide	kg	16,52	50	826,00			250	4 130,00	300	4 956,00
CMC EHV	kg	14,63	3900	57 057,00	4025	58 885,75	150	2 194,50	8075	118 137,25
Gypsum	kg	1,92					10100	19 392,00	10100	19 392,00
Lime	kg	1,56					120	187,20	120	187,20
Bicarbonate	kg	3,61	100	361,00			150	541,50	250	902,50
<b>Total cost</b>	<b>NOK</b>			<b>86 528,00</b>		<b>132 792,00</b>		<b>502 911,45</b>		<b>722 231,45</b>
Hole drilled	m			65		397		1183		1645
Cost per metre	NOK/m			1 331,20		334,49		425,12		439,05
Total days				2		4		4		12,00
Cost per day	NOK/day			43 264,00		33 198,00		125 727,86		60 185,95
Mud mixed	m3			325		583		701		701
Cost per m3	NOK/m3			266,24		227,77		717,42		1 030,29



Volume summary

**MUD VOLUME SUMMARY**

**WELL:** 6507/8-5      **OPERATOR:** Statoil  
**RIG:** Ross Rig

<b>Section:</b>	<b>36"</b>	<b>17 1/2"</b>	<b>12 1/4"</b>
Hole from [m]	355	420	817
Hole to [m]	420	817	2000
Hole length [m]	65	397	1183
Mud Type	CMC	CMC/Bent.	Gyp/Pac
Vol buildt	325	583	701
Vol transfered from external	322		
Vol transfered to external			0
Vol behind casing [m3]	0	0	35 left in hole
Vol dumped	279	951	508
Vol lost to formation	0	0	0
Vol lost on solids equipment	0	0	158
Vol transferred to next interval	368,0	0,0	0,0
Vol cuttings drilled [cub. m]	43,0	62,0	90,0

<b>TOTALS</b>			
mud built	1609,0	<b>total buildt</b>	<b>1609</b>
mud dumped	1738,0	<b>total dumped</b>	<b>1896</b>
mud lost to formation	0,0	<b>total left in hole</b>	<b>35</b>
mud lost on solids cont.	158,0		
mud behind csg	0,0		
mud left in hole	35,0		
<i>total mud left in hole</i>	35,0		
total vol cuttings drilled	195,0		



<b>DAILY DRILLING MUD ADDITIONS</b>														
		<b>Product:</b>	Barite	Bentonite	Soda Ash	CMC EHV	Ancocide	Lime	Celpol SL	Celpol Rec	Gypsum	Bicarb		
		<b>Unit:</b>	ml	ml	kg	kg	kg	kg	kg	kg	kg	kg		
		<b>Unit Price:</b>	705,00	2 075,00	2,38	14,63	16,52	1,56	32,35	32,35	1,92	3,61	<b>Daily Cost</b>	<b>Cumulative Cost</b>
<b>Date:</b>	<b>Section:</b>	<b>Depth:</b>												
1-mar-91	36"			13	300	900	50					100	42 043,00	42 043,00
2-mar-91	36"	396			175	2100							31 139,50	73 182,50
3-mar-91	36"	420			75	900							13 345,50	86 528,00
4-mar-91	26"	433	30		75	1350				75			43 505,25	130 033,25
5-mar-91	26"	854	30		75	1400							41 810,50	171 843,75
6-mar-91	26"	738	17	8	100	1275							47 476,25	219 320,00
7-mar-91	26"	818	30				25	20	1150	200	1625		68 386,70	287 706,70
8-mar-91	12 1/4"	818	37			150	100	40	3125	350	2975		148 122,15	435 828,85
9-mar-91	12 1/4"	1317	50				50		1825	175	1800	150	104 773,50	540 602,35
10-mar-91	12 1/4"	1737	33				25	20	1825	175	2500		93 209,20	633 811,55
11-mar-91	12 1/4"	1866,5	22				25	20	425	150	375		35 275,45	669 087,00
12-mar-91	12 1/4"	2000	14				25	20	800	225	825		45 056,95	714 143,95
13-mar-91	12 1/4"	2000								75			2 426,25	716 570,20
14-mar-91	12 1/4"	P&A								175			5 661,25	722 231,45
15-mar-91	12 1/4"	P&A											0,00	722 231,45



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**SECTOR FOR PETROLEUM TECHNOLOGY**

**Geological laboratories**

**Grading**

<b>Title</b> Geochemical evaluation of well 6507/8-5		
<b>Requested by</b> Kjell Ruud LET ST-KSU	<b>Project</b>	
<b>Date</b> 13.10.91	<b>No. of pages</b>	<b>No. of enclosures</b>

**Key words** Organic geochemistry, hydrocarbon characterisation migration.

**Abstract**

This study has been performed in accordance with Statoil Standard Guide for organic geochemistry at GEOLAB NOR.

BA 91-2414-1

15 NOV. 1991

**REGISTRERT**

**OLJEDIREKTORATET**

<b>Prepared by</b>  GEOLAB NOR a/s
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## *Chapter 1*

# Introduction

## **1.1 General Comments**

Well NOCS 6507/8-5 (block location in Figure 1) was studied for organic geochemistry on behalf of STATOIL, Forus in Stavanger (authorised by Ingun Skjevraak).

A total of 67 samples (30 cuttings + 28 side wall cores + 9 core chip samples) was received by Geolab Nor for geochemical analyses. First the screening analyses were performed on these samples and subsequently a selected suite of samples underwent a detailed follow-up analysis program.

The report is presented, chapter and section-wise, in chronological order of analyses, starting from the first screening analysis. Each section discusses the results, where ever possible, in a stratigraphic context (top to bottom).

## 1.2 Analytical Program

In accordance with the contract, sample availability and the screening analyses results, the following analytical program was executed for well NOCS 6507/8-5 in the section from 1000m to 2000m (TD).

Analysis type	No of samples	Figures	Tables
Head space and occluded gas	15	2a-c	1a-c
Lithology description	67	3	2
Total Organic Carbon	22	3	3
Rock-Eval pyrolysis	67	4,5,6	3
Thermal extraction GC (GHM, S1)	15	7a-e	
Pyrolysis GC (GHM, S2)	8	8a-c,9	4
Soxhlet Extraction of organic matter	6		
MPLC/HPLC separation	6		5a-d
Whole Extract GC	6	10a-b	
GC - MS of saturated HC	1	11a-c	6a-i

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas  
( $\mu$ l gas/kg rock)

Project: 6507/8-5

Well: 6507/8-5

Depth unit of measure: m \* Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
1000.00	127147	93	68	39	18	27	127365	218	0.2	2.17
1100.00	153964	113	100	49	39	34	154265	301	0.2	1.26
1200.00	36103	26	18	7	6	6	36160	57	0.2	1.17
1300.00	21568	18	15	5	4	13	21610	42	0.2	1.25
1400.00	66280	90	161	73	27	27	66631	351	0.5	2.70
1500.00	746249	1197	1735	2999	396	1677	752576	6327	0.8	7.57
1600.00	34187	39	44	17	13	5	34300	113	0.3	1.31
1700.00	4469	45	3	3	1	5	4521	52	1.2	3.00
1800.00	15658	58	8	12	4	39	15740	82	0.5	3.00
1830.00	2439	13	2	1	1	2	2456	17	0.7	1.00
1860.00	526	3	1	1	-	1	531	5	0.9	-
1890.00	3115	11	2	1	-	2	3129	14	0.5	-
1920.00	151344	490	85	45	40	48	152004	660	0.4	1.13
1950.00	7113	23	4	1	2	2	7143	30	0.4	0.50
1980.00	2080	11	2	1	1	-	2095	15	0.7	1.00

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas  
( $\mu$ l gas/kg rock)

Project: 6507/8-5

Well: 6507/8-5

Depth unit of measure: m

\* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
1000.00	238	10	4	1	2	21	255	17	6.7	0.50
1100.00	234	7	3	2	1	16	247	13	5.3	2.00
1200.00	270	13	6	1	3	25	293	23	7.9	0.33
1300.00	259	7	3	-	2	5	271	12	4.4	-
1400.00	219	7	3	-	2	4	231	12	5.2	-
1500.00	17	5	2	1	1	1	26	9	34.6	1.00
1600.00	96	10	6	1	3	13	116	20	17.2	0.33
1700.00	42	6	3	1	2	7	54	12	22.2	0.50
1800.00	29	4	2	-	1	5	36	7	19.4	-
1830.00	25	3	2	-	1	5	31	6	19.4	-
1860.00	41	3	1	-	1	2	46	5	10.9	-
1890.00	16	2	1	-	-	1	19	3	15.8	-
1920.00	76	4	2	-	1	5	83	7	8.4	-
1950.00	136	5	2	-	1	4	144	8	5.6	-
1980.00	84	4	2	2	1	2	93	9	9.7	2.00

Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas  
( $\mu\text{l}$  gas/kg rock)

Project: 6507/8-5

Well: 6507/8-5

Depth unit of measure: m

\* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
1000.00	127385	103	72	40	20	48	127620	235	0.2	2.00
1100.00	154198	120	103	51	40	50	154512	314	0.2	1.27
1200.00	36373	39	24	8	9	31	36453	80	0.2	0.89
1300.00	21827	25	18	5	6	18	21881	54	0.3	0.83
1400.00	66499	97	164	73	29	31	66862	363	0.5	2.52
1500.00	746266	1202	1737	3000	397	1678	752602	6336	0.8	7.56
1600.00	34283	49	50	18	16	18	34416	133	0.4	1.13
1700.00	4511	51	6	4	3	12	4575	64	1.4	1.33
1800.00	15687	62	10	12	5	44	15776	89	0.6	2.40
1830.00	2464	16	4	1	2	7	2487	23	0.9	0.50
1860.00	567	6	2	1	1	3	577	10	1.7	1.00
1890.00	3131	13	3	1	-	3	3148	17	0.5	-
1920.00	151420	494	87	45	41	53	152087	667	0.4	1.10
1950.00	7249	28	6	1	3	6	7287	38	0.5	0.33
1980.00	2164	15	4	3	2	2	2188	24	1.1	1.50

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1000.00						0061	
		100	S/Sst	: gy w to lt gy to m gy, crs, l		0061-1L	
			tr Ca	: lt or, fos		0061-2L	
1100.00						0062	
		100	S/Sst	: gy w to lt gy to m gy, f, crs, l		0062-1L	
			tr Ca	: lt or, fos		0062-2L	
			tr Cont	: prp, dd		0062-3L	
1200.00						0063	
		100	S/Sst	: gy w to lt gy to m gy, f, crs, l		0063-1L	
			tr Ca	: lt or, fos		0063-2L	
			tr Cont	: prp, dd		0063-3L	
1300.00						0064	
		100	S/Sst	: gy w to lt gy to m gy, f, crs, l		0064-1L	
			tr Ca	: lt or, fos		0064-2L	
			tr Cont	: prp, dd		0064-3L	
1320.00 swc						0001	
		100	sltst	: m ol gy		0001-1L	
1354.00 swc						0002	
	0.68	100	Sh/Clst:	m ol gy, calc		0002-1L	

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1400.00						0065
			100	S/Sst : gy w to lt gy to m gy, f, crs, l tr Ca : lt or to or gy, fos tr Cont : prp, dd		0065-1L 0065-2L 0065-3L
1490.00	swc					0003
			100	Sltst : brn gy to drk brn gy, mic, s		0003-1L
1500.00						0066
			50	S/Sst : gy w to lt gy, f, crs, l		0066-1L
			45	Sh/Clst: lt gy to lt brn gy, slt		0066-2L
			5	Sh/Clst: dsk bl gn, glauc		0066-3L
1540.00	swc					0004
			100	Sltst : brn gy to pl y brn, calc		0004-1L
1600.00						0067
		1.50	100	Sh/Clst: y gy to lt gy		0067-1L
1635.00	swc					0005
		0.96	100	Sh/Clst: drk brn gy to pl y brn, calc		0005-1L
1648.00	swc					0006
		0.30	100	Sh/Clst: m gy to m ol gy, slt		0006-1L

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1653.00	swc					0007
	0.66	100		Sh/Clst: lt brn gy to m brn gy, slt		0007-1L
1661.00	swc					0008
	0.35	100		Sh/Clst: lt ol gy to m ol gy, wx		0008-1L
1680.00						0038
			90	Cont : cem		0038-1L
			10	Sh/Clst: m gy to lt brn gy to pl ol, fis		0038-2L
1700.00						0039
	0.47		90	Sh/Clst: lt bl gy to pl ol		0039-2L
			10	Cont : cem		0039-1L
1700.00						0068
			100	Sh/Clst: lt gn gy to gn gy to pl y gn to lt ol gy		0068-1L
1718.00	swc					0009
	0.03	100		Sh/Clst: drk y brn to dsk y brn, wx		0009-1L
1750.00	swc					0010
	0.29	100		Sh/Clst: lt ol gy to m ol gy, wx		0010-1L



Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1775.00	swc					0011
	0.46	100		Sh/Clst: ol gy to drk ol gy, wx		0011-1L
1784.00	swc					0012
	0.12	100		Sh/Clst: brn		0012-1L
1788.00	swc					0013
	0.18	100		Sh/Clst: m gy, slt		0013-1L
1790.00						0040
				95 Sh/Clst: lt gy to m gy		0040-1L
				5 Sh/Clst: brn to m brn		0040-2L
				tr Sh/Clst: lt bl gn		0040-3L
				tr S/Sst : w, crs, l		0040-4L
1800.00						0069
				95 Sh/Clst: lt gy to lt bl gy to m gy to drk gy, fis		0069-1L
				5 Sh/Clst: lt red brn to m brn		0069-2L
				tr Other : pyr		0069-3L
1803.00	swc					0014
	1.84	100		Sh/Clst: brn blk, slt		0014-1L
1806.00						0041
				95 Sh/Clst: lt gy to m gy, pyr, fis		0041-1L
				5 Sh/Clst: brn to m brn		0041-2L
				tr Sh/Clst: lt bl gn		0041-3L
				tr S/Sst : w to gy w, crs, l		0041-4L
				tr Coal : blk		0041-5L

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1815.00						0042
	0.38	100		Sh/Clst: lt gy to m gy to pl ol gy, pyr, fis		0042-1L
				tr Sh/Clst: lt bl gn		0042-2L
				tr S/Sst : w to gy w, crs, l		0042-3L
1824.00						0043
	0.50	100		Sh/Clst: lt gy to m gy to pl ol gy, pyr, fis		0043-1L
				tr Sh/Clst: lt bl gn		0043-2L
				tr S/Sst : w to gy w, crs, l		0043-3L
				tr Sh/Clst: brn to m brn		0043-4L
1827.00	swc					0015
	1.12	100		Sh/Clst: drk gy to brn blk, slt		0015-1L
1830.00						0070
		50		Sh/Clst: lt gy to lt bl gy to m gy to drk gy, fis		0070-1L
		50		S/Sst : lt gy w, crs, l		0070-4L
				tr Sh/Clst: lt red brn to m brn		0070-2L
				tr Other : pyr		0070-3L
1831.00	swc					0016
		100		S/Sst : lt gy to gy w, crs, l		0016-1L
1832.00	swc					0017
		100		S/Sst : lt gy, crs, l		0017-1L

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1836.00						0044
	0.41	50	Sh/Clst:	lt gy to m gy to pl ol gy, pyr, fis		0044-1L
		50	S/Sst :	w to gy w, crs, l		0044-3L
			tr Sh/Clst:	lt bl gn		0044-2L
1839.00						0045
	0.44	60	S/Sst :	w to gy w, crs, l		0045-3L
		30	Sh/Clst:	lt gy to m gy to pl ol gy, pyr, fis		0045-1L
		10	Sh/Clst:	lt bl gn to gn		0045-2L
1855.00	swc					0018
		100	S/Sst :	gy w to lt gy, crs, l		0018-1L
1857.80	ccp					0029
		100	S/Sst :	lt gy to lt or gy, crs, cngl, l		0029-1L
1860.00						0071
		95	S/Sst :	lt gy w to lt or pi, crs, l		0071-2L
		5	Sh/Clst:	lt gy to lt bl gy to m gy to drk gy, fis		0071-1L
			tr Cont :	prp		0071-3L
1862.60	ccp					0030
		100	S/Sst :	lt gy to gy w, crs, l		0030-1L

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1864.67	ccp					0031	
		100	S/Sst	:	lt gy to lt brn gy, crs, l	0031-1L	
1866.57	ccp					0032	
		100	S/Sst	:	lt gy to lt brn gy, crs, l	0032-1L	
1869.30	ccp					0033	
		100	S/Sst	:	lt brn gy, crs, l, st	0033-1L	
1869.55	ccp					0034	
		100	S/Sst	:	lt brn gy, crs, l, st	0034-1L	
1872.50	ccp					0035	
		100	S/Sst	:	lt brn gy to lt gy, crs, l, st	0035-1L	
1875.40	ccp					0036	
		100	S/Sst	:	lt gy, crs, l	0036-1L	
1878.61	ccp					0037	
		100	S/Sst	:	lt gy, f, l	0037-1L	
1881.00						0046	
		85	S/Sst	:	w to gy w, crs, l	0046-2L	
		10	Sh/Clst:		lt gy to m gy to pl ol gy, pyr, fis	0046-1L	
		5	Cont	:	prp	0046-3L	

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1883.00	swc					0019	
		100	S/Sst	:	lt gy, f, l	0019-1L	
1884.00						0047	
		80	S/Sst	:	w to gy w, f, pyr	0047-2L	
		10	Sh/Clst:	:	lt gy to m gy to pl ol gy, pyr, fis	0047-1L	
		10	Cont	:	prp	0047-3L	
1889.00	swc					0020	
		100	Sltst	:	gy w to lt gy, mic, lam	0020-1L	
1890.00						0072	
		80	Sh/Clst:	:	lt gy to m gy to lt brn gy, fis	0072-1L	
		20	S/Sst	:	lt gy w, f, kln, pyr	0072-3L	
		tr	S/Sst	:	lt gy w to lt or pi, crs, l	0072-2L	
1898.00	swc					0021	
		100	Sltst	:	gy w to lt gy, mic, l	0021-1L	
1902.00	swc					0022	
		100	Sltst	:	lt gy to m gy to brn gy, cly	0022-1L	
1914.00						0048	
	0.53	75	Sh/Clst:	:	m gy	0048-1L	
		20	S/Sst	:	w to gy w, crs, l	0048-2L	
		5	Cont	:	prp	0048-3L	

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1920.00						0073	
		80	Sh/Clst: lt gy to m gy to gn gy to lt brn gy, fis			0073-1L	
		20	S/Sst : gy w to lt gy, f, crs, l, pyr			0073-2L	
			tr Cont : prp			0073-3L	
1925.00	swc					0023	
	2.17	100	Sh/Clst: dsk brn to brn blk, slt			0023-1L	
1934.00	swc					0024	
	1.72	100	Sh/Clst: drk gy to brn blk, slt			0024-1L	
1941.00						0049	
	1.51	80	Sh/Clst: m gy to brn gy			0049-1L	
		20	S/Sst : w to gy w, crs, l			0049-2L	
			tr Cont : prp			0049-3L	
1943.00	swc					0025	
		100	sltst : brn gy to dsk brn			0025-1L	
1944.00						0050	
		95	S/Sst : gy w, crs, l			0050-1L	
		5	Sh/Clst: gn gy to m gy to brn gy			0050-2L	
			tr Cont : prp			0050-3L	

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1945.00	swc					0026
			100	S/Sst : lt or gy to or gy, crs, l		0026-1L
1947.00						0051
			95	S/Sst : gy w to lt gy, crs, l		0051-1L
			5	Sh/Clst: gn gy to m gy to brn gy		0051-2L
				tr Cont : prp		0051-3L
1950.00						0052
			100	S/Sst : gy w to lt gy, crs, l		0052-1L
				tr Sh/Clst: gn gy to m gy to brn gy		0052-2L
				tr Cont : prp		0052-3L
1950.00						0074
			95	S/Sst : lt gy w to lt or pi, crs, l		0074-2L
			5	Sh/Clst: lt gy to m gy to gn gy to lt brn gy, fis		0074-1L
				tr Cont : prp		0074-3L
1953.00						0053
			95	S/Sst : gy w to lt gy, crs, l		0053-1L
			5	Sh/Clst: gn gy to m gy to brn gy		0053-2L
				tr Cont : prp		0053-3L
				tr Coal : blk, wx		0053-4L
1956.00						0054
			90	S/Sst : gy w to lt gy, crs, l		0054-1L
			5	Sh/Clst: gn gy to m gy to brn gy		0054-2L
			5	Cont : prp		0054-3L

Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1965.00	swc					0027
			100	Sltst : lt gy to lt brn gy to brn gy to dsk brn, s, cly		0027-1L
1971.00						0055
			60	S/Sst : gy w to lt gy, crs, l		0055-1L
			40	Sh/Clst: m gy to brn gy, slt		0055-2L
			tr	Cont : prp		0055-3L
1977.00						0056
			75	S/Sst : gy w to lt gy, crs, l		0056-1L
			15	Cont : prp		0056-3L
			10	Sh/Clst: m gy to brn gy		0056-2L
1980.00						0075
			40	Sltst : w to lt gy w		0075-5L
			25	Ca : w		0075-4L
			20	Sh/Clst: lt gy to m gy to gn gy to lt brn gy, fis		0075-1L
			15	S/Sst : gy w to lt or pi, crs, l, f, kln, pyr		0075-2L
			tr	Cont : prp		0075-3L
1983.00						0057
			75	S/Sst : gy w to lt gy, crs, l		0057-1L
			10	Cont : prp		0057-3L
			10	Ca : w		0057-4L
			5	Sh/Clst: m gy to brn gy		0057-2L



Table 2 : Lithology description for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1985.00	swc					0028
			100	S/Sst : y gy, f, l		0028-1L
1992.00						0058
			70	S/Sst : gy w to lt gy, crs, f, l		0058-1L
			20	Sh/Clst: lt gy to m gy to brn gy, fis		0058-2L
			5	Cont : prp		0058-3L
			5	Ca : w		0058-4L
1995.00						0059
			85	S/Sst : gy w to lt gy, crs, f, l		0059-1L
			10	Sh/Clst: lt gy to m gy to brn gy, fis		0059-2L
			5	Ca : w		0059-4L
			tr	Cont : prp		0059-3L
			tr	Coal : blk		0059-5L
2000.00						0060
			95	S/Sst : gy w to lt gy, crs, f, l, pyr		0060-1L
			5	Sh/Clst: lt gy to m gy to brn gy, fis		0060-2L
			tr	Cont : prp		0060-3L
			tr	Ca : w		0060-4L

Table 3 : Rock-Eval table for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1000.00	cut	S/Sst : gy w to lt gy to m gy	0.04	0.29	0.24	1.21	-	-	-	0.3	0.12	420	0061-1L
1100.00	cut	S/Sst : gy w to lt gy to m gy	0.03	0.13	0.17	0.76	-	-	-	0.2	0.19	421	0062-1L
1200.00	cut	S/Sst : gy w to lt gy to m gy	-	-	0.05	-	-	-	-	-	-	380	0063-1L
1300.00	cut	S/Sst : gy w to lt gy to m gy	-	0.02	0.11	0.18	-	-	-	-	-	339	0064-1L
1320.00	swc	Sltst : m ol gy	0.03	0.13	0.46	0.28	-	-	-	0.2	0.19	419	0001-1L
1354.00	swc	Sh/Clst: m ol gy	0.04	0.32	1.57	0.20	0.68	47	231	0.4	0.11	430	0002-1L
1400.00	cut	S/Sst : gy w to lt gy to m gy	0.04	0.11	0.43	0.26	-	-	-	0.2	0.27	414	0065-1L
1490.00	swc	Sltst : brn gy to drk brn gy	0.09	0.52	1.06	0.49	-	-	-	0.6	0.15	418	0003-1L
1500.00	cut	Sh/Clst: lt gy to lt brn gy	0.14	1.00	0.71	1.41	-	-	-	1.1	0.12	425	0066-2L
1540.00	swc	Sltst : brn gy to pl y brn	0.19	1.51	1.33	1.14	-	-	-	1.7	0.11	427	0004-1L
1600.00	cut	Sh/Clst: y gy to lt gy	0.31	2.27	0.86	2.64	1.50	151	57	2.6	0.12	416	0067-1L
1635.00	swc	Sh/Clst: drk brn gy to pl y brn	0.15	1.06	1.20	0.88	0.96	110	125	1.2	0.12	420	0005-1L
1648.00	swc	Sh/Clst: m gy to m ol gy	0.08	0.22	0.35	0.63	0.30	73	117	0.3	0.27	415	0006-1L
1653.00	swc	Sh/Clst: lt brn gy to m brn gy	0.16	0.64	0.45	1.42	0.66	97	68	0.8	0.20	408	0007-1L
1661.00	swc	Sh/Clst: lt ol gy to m ol gy	0.02	0.13	0.38	0.34	0.35	37	109	0.1	0.13	422	0008-1L

Table 3 : Rock-Eval table for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1680.00	cut	Sh/Clst: m gy to lt brn gy to pl ol	0.15	0.80	1.06	0.75	-	-	-	1.0	0.16	420	0038-2L
1700.00	cut	Sh/Clst: lt bl gy to pl ol	0.03	0.20	0.85	0.24	0.47	43	181	0.2	0.13	421	0039-2L
1718.00	swc	Sh/Clst: drk y brn to dsk y brn	-	0.02	0.07	0.29	0.03	67	233	-	-	410	0009-1L
1750.00	swc	Sh/Clst: lt ol gy to m ol gy	-	0.06	0.16	0.38	0.29	21	55	0.1	-	382	0010-1L
1775.00	swc	Sh/Clst: ol gy to drk ol gy	0.02	0.13	0.30	0.43	0.46	28	65	0.1	0.13	449	0011-1L
1784.00	swc	Sh/Clst: brn	0.01	0.03	0.10	0.30	0.12	25	83	-	0.25	370	0012-1L
1788.00	swc	Sh/Clst: m gy	0.04	0.01	0.08	0.13	0.18	6	44	0.1	0.80	304	0013-1L
1790.00	cut	Sh/Clst: lt gy to m gy	0.01	0.14	1.25	0.11	-	-	-	0.2	0.07	417	0040-1L
1803.00	swc	Sh/Clst: brn blk	0.02	0.38	0.96	0.40	1.84	21	52	0.4	0.05	423	0014-1L
1806.00	cut	Sh/Clst: lt gy to m gy	0.02	0.10	1.15	0.09	-	-	-	0.1	0.17	418	0041-1L
1815.00	cut	Sh/Clst: lt gy to m gy to pl ol gy	0.01	0.07	1.01	0.07	0.38	18	266	0.1	0.13	409	0042-1L
1824.00	cut	Sh/Clst: lt gy to m gy to pl ol gy	0.03	0.15	1.07	0.14	0.50	30	214	0.2	0.17	409	0043-1L
1827.00	swc	Sh/Clst: drk gy to brn blk	0.04	0.20	0.43	0.47	1.12	18	38	0.2	0.17	426	0015-1L
1831.00	swc	S/Sst : lt gy to gy w	0.02	0.12	0.37	0.32	-	-	-	0.1	0.14	599	0016-1L

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1832.00	swc	S/Sst : lt gy	0.03	0.07	0.20	0.35	-	-	-	0.1	0.30	589	0017-1L
1836.00	cut	Sh/Clst: lt gy to m gy to pl ol gy	0.02	0.13	1.13	0.12	0.41	32	276	0.1	0.13	414	0044-1L
1839.00	cut	Sh/Clst: lt gy to m gy to pl ol gy	0.03	0.10	1.16	0.09	0.44	23	264	0.1	0.23	414	0045-1L
1855.00	swc	S/Sst : gy w to lt gy	0.02	0.04	0.36	0.11	-	-	-	0.1	0.33	527	0018-1L
1857.80	ccp	S/Sst : lt gy to lt or gy	-	0.01	0.15	0.07	-	-	-	-	-	333	0029-1L
1862.60	ccp	S/Sst : lt gy to gy w	-	-	0.29	-	-	-	-	-	-	427	0030-1L
1864.67	ccp	S/Sst : lt gy to lt brn gy	-	-	0.31	-	-	-	-	-	-	379	0031-1L
1866.57	ccp	S/Sst : lt gy to lt brn gy	0.02	0.01	0.55	0.02	-	-	-	-	0.67	256	0032-1L
1869.30	ccp	S/Sst : lt brn gy	-	-	0.40	-	-	-	-	-	-	305	0033-1L
1869.55	ccp	S/Sst : lt brn gy	-	-	0.52	-	-	-	-	-	-	368	0034-1L
1872.50	ccp	S/Sst : lt brn gy to lt gy	0.01	0.01	0.35	0.03	-	-	-	-	0.50	303	0035-1L
1875.40	ccp	S/Sst : lt gy	0.01	0.01	0.44	0.02	-	-	-	-	0.50	304	0036-1L
1878.61	ccp	S/Sst : lt gy	-	0.10	0.13	0.77	-	-	-	0.1	-	595	0037-1L
1881.00	cut	S/Sst : w to gy w	-	-	0.13	-	-	-	-	-	-	333	0046-2L
1883.00	swc	S/Sst : lt gy	0.01	0.02	0.19	0.11	-	-	-	-	0.33	379	0019-1L

Table 3 : Rock-Eval table for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1884.00	cut	S/Sst : w to gy w	-	-	0.15	-	-	-	-	-	-	304	0047-2L
1889.00	swc	Sltst : gy w to lt gy	0.08	0.12	0.40	0.30	-	-	-	0.2	0.40	435	0020-1L
1898.00	swc	Sltst : gy w to lt gy	0.08	0.20	0.41	0.49	-	-	-	0.3	0.29	412	0021-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	0.15	1.71	0.70	2.44	-	-	-	1.9	0.08	421	0022-1L
1914.00	cut	Sh/Clst: m gy	0.04	0.21	0.96	0.22	0.53	40	181	0.3	0.16	419	0048-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	0.15	4.72	0.73	6.47	2.17	218	34	4.9	0.03	431	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	0.10	3.30	0.62	5.32	1.72	192	36	3.4	0.03	430	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	0.10	2.50	0.75	3.33	1.51	166	50	2.6	0.04	431	0049-1L
1943.00	swc	Sltst : brn gy to dsk brn	0.05	0.84	0.41	2.05	-	-	-	0.9	0.06	426	0025-1L
1944.00	cut	S/Sst : gy w	-	0.02	0.48	0.04	-	-	-	-	-	420	0050-1L
1945.00	swc	S/Sst : lt or gy to or gy	-	0.03	0.67	0.04	-	-	-	-	-	430	0026-1L
1947.00	cut	S/Sst : gy w to lt gy	-	0.01	0.48	0.02	-	-	-	-	-	363	0051-1L
1950.00	cut	S/Sst : gy w to lt gy	-	-	0.42	-	-	-	-	-	-	421	0052-1L
1953.00	cut	S/Sst : gy w to lt gy	0.02	-	0.20	-	-	-	-	-	1.00	348	0053-1L
1956.00	cut	S/Sst : gy w to lt gy	-	-	0.15	-	-	-	-	-	-	239	0054-1L

Table 3 : Rock-Eval table for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1965.00	swc	Sltst : lt gy to lt brn gy to brn gy to dsk brn	0.02	0.42	1.08	0.39	-	-	-	0.4	0.05	432	0027-1L
1971.00	cut	S/Sst : gy w to lt gy	-	0.01	0.10	0.10	-	-	-	-	-	431	0055-1L
1977.00	cut	S/Sst : gy w to lt gy	0.01	-	0.14	-	-	-	-	-	1.00	237	0056-1L
1983.00	cut	S/Sst : gy w to lt gy	0.01	-	0.24	-	-	-	-	-	1.00	252	0057-1L
1985.00	swc	S/Sst : y gy	0.02	0.10	0.21	0.48	-	-	-	0.1	0.17	433	0028-1L
1992.00	cut	S/Sst : gy w to lt gy	-	0.01	0.13	0.08	-	-	-	-	-	339	0058-1L
1995.00	cut	S/Sst : gy w to lt gy	-	-	0.16	-	-	-	-	-	-	297	0059-1L
2000.00	cut	S/Sst : gy w to lt gy	-	-	0.34	-	-	-	-	-	-	302	0060-1L

Table 4 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
1600.00	cut	Sh/Clst: y gy to lt gy	4.08	23.08	58.30	14.54	2.27	0067-1L
1635.00	swc	Sh/Clst: drk brn gy to pl y brn	5.11	23.99	58.65	12.25	1.06	0005-1L
1803.00	swc	Sh/Clst: brn blk	6.72	28.65	59.90	4.73	0.38	0014-1L
1827.00	swc	Sh/Clst: drk gy to brn blk	6.60	29.71	59.30	4.39	0.20	0015-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	3.33	16.35	52.90	27.43	1.71	0022-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	3.79	15.20	43.93	37.07	4.72	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	4.06	16.79	45.59	33.57	3.30	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	4.35	21.87	51.03	22.75	2.50	0049-1L

Table 5 a: Weight of EOM and Chromatographic Fraction for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
1600.00	cut	Sh/Clst: y gy to lt gy	4.0	3.3	0.6	0.2	2.2	0.3	0.8	2.5	1.44	0067-1L
1803.00	swc	Sh/Clst: brn blk	8.9	2.3	0.2	0.6	1.3	0.2	0.8	1.5	1.89	0014-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	7.2	2.8	0.3	1.2	0.9	0.4	1.5	1.3	1.36	0022-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	9.5	5.7	0.3	0.9	1.1	3.4	1.2	4.5	2.05	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	7.7	5.7	0.3	0.3	3.2	1.9	0.6	5.1	1.73	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	1.6	1.4	0.3	0.2	0.5	0.4	0.5	0.9	0.70	0049-1L



Table 5 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
1600.00	cut	Sh/Clst: y gy to lt gy	831	151	50	554	75	201	629	0067-1L
1803.00	swc	Sh/Clst: brn blk	259	22	67	146	22	90	169	0014-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	388	41	166	125	55	208	180	0022-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	599	31	94	115	357	126	473	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	739	38	38	415	246	77	661	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	880	188	125	314	251	314	566	0049-1L

Table 5 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
1600.00	cut	Sh/Clst: y gy to lt gy	57.72	10.50	3.50	38.48	5.25	13.99	43.73	0067-1L
1803.00	swc	Sh/Clst: brn blk	13.75	1.20	3.59	7.77	1.20	4.78	8.97	0014-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	28.59	3.06	12.25	9.19	4.08	15.32	13.28	0022-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	29.24	1.54	4.62	5.64	17.44	6.16	23.08	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	42.73	2.25	2.25	23.99	14.24	4.50	38.24	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	125.79	26.95	17.97	44.92	35.94	44.92	80.86	0049-1L

Table 5 d: Composition of material extracted from the rock (%) for well NOCS 6507/8-5

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
1600.00	cut	Sh/Clst: y gy to lt gy	18.18	6.06	66.67	9.09	24.24	75.76	300.00	32.00	0067-1L
1803.00	swc	Sh/Clst: brn blk	8.70	26.09	56.52	8.70	34.78	65.22	33.33	53.33	0014-1L
1902.00	swc	Sltst : lt gy to m gy to brn gy	10.71	42.86	32.14	14.29	53.57	46.43	25.00	115.38	0022-1L
1925.00	swc	Sh/Clst: dsk brn to brn blk	5.26	15.79	19.30	59.65	21.05	78.95	33.33	26.67	0023-1L
1934.00	swc	Sh/Clst: drk gy to brn blk	5.26	5.26	56.14	33.33	10.53	89.47	100.00	11.76	0024-1L
1941.00	cut	Sh/Clst: m gy to brn gy	21.43	14.29	35.71	28.57	35.71	64.29	150.00	55.56	0049-1L

Table 6 A: Variation in Triterpane Distribution (peak height) for Well NOCS 6507/8-5

Depth unit of measure: m

Depth	Lithology	B/A	B/B+A <sup>0</sup>	B		C/E	C/C+E	X/E	Z/E	Z/C	Z/Z+E	Q/E	E/E+F	C+D		J1		Sample
				B+E+F	C/E									C+D+E+F	D+F/C+E	J1+J2%		
1941.00	bulk	1.73	0.63	0.23	0.77	0.44	0.03	0.17	0.22	0.14	0.58	0.83	0.44	0.21	51.37			0049-0

Table 6B: Variation in Sterane Distribution (peak height) for Well NOCS 6507/8-5

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Ratio6</u>	<u>Ratio7</u>	<u>Ratio8</u>	<u>Ratio9</u>	<u>Ratio10</u>	<u>Sample</u>
1941.00	bulk	0.41	15.81	59.63	1.19	0.82	0.60	0.50	0.42	0.19	0.88	0049-0

Ratio1:  $a / a + j$   
 Ratio2:  $q / q + t * 100\%$   
 Ratio3:  $2(r + s) / (q + t + 2(r + s)) * 100\%$   
 Ratio4:  $a + b + c + d / h + k + l + n$   
 Ratio5:  $r + s / r + s + q$

Ratio6:  $u + v / u + v + q + r + s + t$   
 Ratio7:  $u + v / u + v + i + m + n + q + r + s + t$   
 Ratio8:  $r + s / q + r + s + t$   
 Ratio9:  $q / t$   
 Ratio10:  $r + s / t$

Table 6 C: Raw GCMS triterpane data (peak height) for Well NOCS 6507/8-5

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	j1		
		j2	k1	k2	l1	l2	m1	m2			
1941.00	bulk	190.92	95.47	31.00	49.29	16.84	34.20	59.05	27.56	127.85	0049-0
		5.33	29.00	165.48	34.00	41.07	73.86	53.57	18.23		
		17.26	10.79	7.34	6.25	3.70	0.00	0.00			

Table 6 D: Raw GCMS sterane data (peak height) for Well NOCS 6507/8-5

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
1941.00	bulk	102.39	37.71	32.35	24.63	6.72	8.98	14.09	10.39	20.32	0049-0
		27.43	25.40	45.85	14.79	5.31	8.49	13.52	16.87		
		12.95	8.54	26.40	13.50	45.49					