

ORIGINAL

Norske Shell

Tananger 23/8-84

Report : Shell-8

Water analysis and
compositional analysis
of suspended solids.

Well 6407/a-1

Att : N. Crawley
c.c.: D. Krabbedam
: K. Mottland

LABORATORY REPORT.

Sample description :

Sample no. 5 : Shell-08 no. 2
1 gal seregrated watersample, 6407/9-1.
Sample date 6/8-84, depth 1703 m.
RFT-run no. 3.

Sample no. 6 : Shell-09 no. 1
Mud sample taken before logging,
3 Aug.'84. 6047/9-1.
Depth 2500 m.

Customer: Shell/N. Crawley		Sample No: 2	Date Sampled: 6/8-84	
Field:	Legal description:		Job no: Shell-08	
Lease or Unit:	Well: 6407/g-1	Depth:	Formation:	Rate B/D:
Type of Water (Produced, supply, etc.)		Sampling Point	Sampled by	
Remarks (Any other relevant information) 1 gal serigated watersample. Depth : 1703 m. RFT-run no. 3.				

DISSOLVED SOLIDS:

<u>CATIONS</u>	mg/l	me/l
Sodium, Na(calc)	7.199	313
Calcium, Ca	781	39
Magnesium, Mg	244	20
Barium, Ba	9	-
Iron, Fe	0,7	-
Strontium, Sr	18	-
Potassium, K	23.778	608
<u>ANIONS</u>		
Chloride, Cl	34.435	970
Sulfate, SO ₄	275	6
Carbonate, CO ₃	0	-
Bicarbonate HCO ₃	272	4
Hydroxide, OH	0	-
<hr/>		
Total Dissolved Solids(calc.)	67.012	===== mg/l

OTHER PROPERTIES:

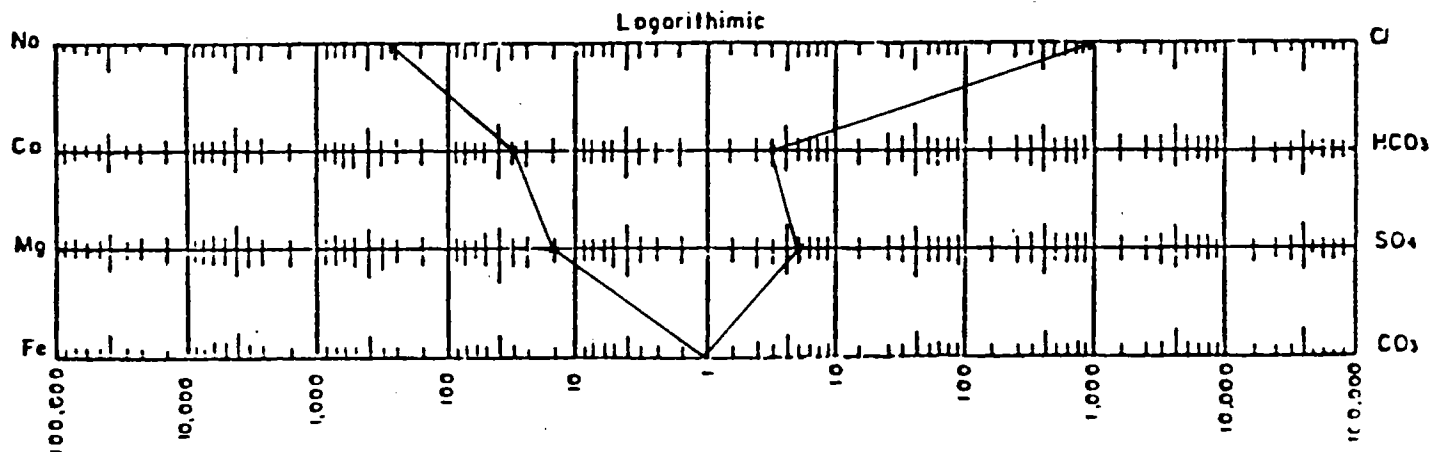
pH	7,40	200C
Specific Grav. 60/60 F	1,044	
Resistivity(ohm-meters)	0,113	200C
Sulfide as H ₂ S mg/l		
Suspended solids mg/l	797,2	

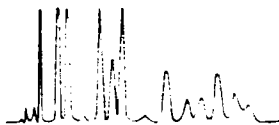
REMARKS & RECOMMENDATIONS

328 mg/l Br⁻

Analyses by: T.F. / L.K.W.

WATER PATTERNS _____ me/l





6079-

ANALYSIS OF SUSPENDED SOLIDS.

Report : Shell-08

Sample no.: 2.

Element Weight% of ash. Most probable chem form, weight%

<u>Inorganics.</u>			
Sulphur, S.	3,97	SO ₄ (Excess)	2,05
Zinc, Zn.	0,16	ZnO	0,20
Barium, Ba.	13,50	BaSO ₄	23,00
Silicon, Si.	12,40	SiO ₂	26,40
Iron, Fe.	8,05	Fe ₂ O ₃	11,50
Magnesium, Mg.	0,88	MgCO ₃	3,05
Aluminium, Al.	7,53	Al ₂ O ₃	14,20
Calcium, Ca.	1,28	CaCO ₃	3,20
Sodium, Na.	0,95	NaCl	2,41
Strontium, Sr.	0,35	SrSO ₄	0,71
Potassium, K.	2,40	KCl	4,58
Phosphorus, P.	0,13	P ₂ O ₅	0,30
Manganese, Mn.	0,04	MnO	0,07
Lead, Pb.	< 0,01	PbO	
Copper, Cu.	0,07	CuO	0,09
Tin, Sn.	< 0,01	SnO	
Titanium, Ti.	0,45	TiO ₂	0,74
Chromium, Cr.	< 0,01	CrO ₃	
<u>Organics:</u>	Weight % of		
% loss on ignition at 550°C	tot. sample.		
-----	14,6		
% ash residue at 550°C	-----		
	85,4		

Remarks:

The sample was ignited, ashed at 550°C and acid extracted. The acid insoluble residues was fused in alkali medium, analysed by plasma emission spectrometry.

100% sample = Ash + Organics.

Ash = element oxides.

LABORATORY REPORT.

Results :

Sample no.	5	6
pH, 20°C	7,40	***
Specific gravity 60/60 F	1,044	1,074
Resistivity, 20°C (ohm-meters)	0,113	0,074
Sulfide as H ₂ S mg/l	-	-
Suspended solids mg/l	797,2	2367,9
	mg/l	mg/l
	-----	-----
Sodium Na	7.199 **	4.603 *
Calcium Ca	781	388
Magnesium Mg	244	47
Barium Ba	9	8,4
Iron Fe	0,7	13
Strontium Sr	18	14
Potassium K	23.778	66.151
Chloride Cl	34.435	33.015
Sulfate SO ₄	275	220
Carbonate CO ₃	0	***
Bicarbonate HCO ₃	272	***
Hydroxide OH	0	***
Bromid Br ⁻	328	

* : Measured (meas)

** : Calculated (calc)

*** : Sample is not pH-stabile and results from alkalinity-titration is not reproduceable. pH measured in the range : 4-6.

ANALYSIS OF SUSPENDED SOLIDS

Report : Shell-09

Sample no.: 1.

Element Weight% of ash. Most probable chem form, weight%

Inorganics. Sulphur, S.	8,63	SO ₄ (Excess)	2,98
Zinc, Zn.	0,03	ZnO	0,02
Barium, Ba.	31,70	BaSO ₄	53,80
Silicon, Si.	7,97	SiO ₂	17,00
Iron, Fe.	2,19	Fe ₂ O ₃	3,12
Magnesium, Mg.	0,37	MgCO ₃	1,28
Aluminium, Al.	3,19	Al ₂ O ₃	6,03
Calcium, Ca.	0,94	CaCO ₃	2,36
Sodium, Na.	0,37	NaCl	0,94
Strontium, Sr.	0,77	SrSO ₄	1,58
Potassium, K.	2,72	KCl	5,19
Phosphorus, P.	0,17	P ₂ O ₅	0,39
Manganese, Mn.	0,03	MnO ₂	0,04
Lead, Pb.	0,02	PbO	0,02
Copper, Cu.	0,03	CuO	0,04
Titanium, Ti.	0,18	TiO ₂	0,31
Chromium, Cr.	< 0,01	CrO ₃	
Cadmium, Cd.	< 0,01	CdO	
<u>Organics:</u>	Weight % of	<u>Notes :</u> The sample is not radio- active. The sample appears to be drilling mud (barite + clay).	
% loss on drying 100°C	tot. sample.		
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% loss on ignition at 100 - 550°C	-----		
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% ash residue 500°C	94,1		

Remarks:

The deposit was removed from the filter, crushed, dried at 100°C and ashed at 550°C. The ashed material was acid extracted, the insoluble residues fused in an alkali medium and all solutions analysed by plasma emission spectrometry.