

**Ásbjarnarstaðir, Stafholtstungum, Mýrasýslu.
Um sýni til efnagreininga, tekið 1983-05-18**

Halldór Ármannsson

Greinargerð HÁ-83-04

ÁSBJARNARSTAÐIR, STAFHOLTSTUNGUM, MÝRASÝSLU. UM SÝNI TIL EFNAGREININGA,

TEKIÐ 1983-05-18

Niðurstöður efnagreininga og reikningar á efnahita og ýmiss konar efnajafnvægi eru í meðfylgjandi tölvuútskrift. Reynsla bendir til þess, að kalsedónhiti sé jafnan næst lagi í slíkum tilvikum, og er hann 51°C. Jónskiptahiti natríums og kalíums er einnig oft notaður sem leiðarvísir, og sýnir hann 69°C í þessu tilviki, en fremur óalgengt er, að hann sé hærri en kalsedónhiti. Sýrustig er hóflega basískt, og vatnið er undir- mettað með tilliti til kalsíts, svo að ekki er útlit fyrir tæringar- eða útfellingahættu, ef nýta ætti vatnið. Selta er lág, flúorstyrkur lítill og heildarstyrkur uppleystra steinefna einnig, svo að ekki yrði um neysluvandamál að ræða.

36044007008305180122 ASBJARNARSTADIR

STAFHOLTSTUNGHAFREPP MYRARSYSLA

PROGRAM WATCH2.

WATER SAMPLE (PPM)		GAS (VOL.%)		REFERENCE TEMP,	DEGREES C	0.0 (CHA)
PH/DEG.C	8.20/21.2	CO2				
SI02	31.80	H2S		SAMPLING PRESSURE	BARS ABS.	
NA	35.79	H2		DISCHARGE ENTHALPY	KJOUL/KG	
K	0.67	O2		DISCHARGE	KG/SEC.	0.0
CA	4.48	N2		MEASURED TEMPERATURE	DEGREES C	33.0
MG	0.226			RESISTIVITY/TEMP,	OHM/DEG.C	60.6/21.0
CO2	64.00			EH/TEMP,	MV/DEG.C	0.000/ 0.0
SO4	4.13					
H2S	0.00					
CL	12.91					
F	0.15	LITERS GAS PER KG				
DISS.SOLIDS	123.80	CONDENSATE/DEG.C		MEASURED DOWNHOLE TEMP,	DEGREES C/MEIERS	FLUID INFLOW
AL	0.0000					DEPTH (METERS)
B	0.0000					
FE	0.0000	CONDENSATE (PPM)		0.0	0.0	0.0
NH3	0.0000	PH/DEG.C		0.0	0.0	0.0
		CO2		0.0	0.0	0.0
		H2S		0.0	0.0	0.0
		NA		0.0	0.0	0.0
				0.0	0.0	0.0
				0.0	0.0	0.0
				0.0	0.0	0.0
		CONDENSATE WITH NAOH (PPM)		0.0	0.0	0.0
		CO2		0.0	0.0	0.0
		H2S		0.0	0.0	0.0

IONIC STRENGTH = 0.00203 IONIC BALANCE : CATIONS (MOL.EQ.)0.00181158
ANIONS (MOL.EQ.)0.00190802
DIFFERENCE (%) -5.19

DEEP WATER (PPM)		DEEP STEAM (PPM)		GAS PRESSURES (BARS ABS.)	
SI02	31.80	CO2	64.00	CO2	0.105E-02
NA	35.79	H2S	0.00	H2S	0.000E+00
K	0.67	H2	0.00	H2	0.000E+00
CA	4.48	O2	0.00	O2	0.000E+00
MG	0.226	CH4	0.00	CH4	0.000E+00
SO4	4.13	N2	0.00	N2	0.000E+00
CL	12.91	NH3	0.00	NH3	0.000E+00
F	0.15			H2O	0.128E+00
DISS.S.	123.80			TOTAL	0.129E+00
AL	0.0000				
B	0.0000			H2O (%)	0.00
FE	0.0000			BOILING PORTION	0.00

ACTIVITY COEFFICIENTS IN DEEP WATER

H+	0.953	KSO4-	0.950	FE++	0.817	FECL+	0.949
OH-	0.949	F-	0.949	FE+++	0.647	AL+++	0.647
H3SiO4-	0.949	CL-	0.949	FE(OH)+	0.950	AL(OH)++	0.816
H2SiO4--	0.816	NA+	0.949	FE(OH)3-	0.950	AL(OH)2+	0.950
H2BO3-	0.948	K+	0.949	FE(OH)4--	0.815	AL(OH)4-	0.950
HCO3-	0.949	CA++	0.817	FE(OH)++	0.815	ALSO4+	0.950
CO3--	0.814	MG++	0.822	FE(OH)2+	0.950	AL(SO4)2-	0.950
HS-	0.949	CAHCO3+	0.951	FE(OH)4-	0.950	ALF++	0.816
S--	0.815	MGHCO3+	0.949	FESO4+	0.950	ALF2+	0.950
HSO4-	0.950	CAOH+	0.951	FECL++	0.815	ALF4-	0.950
SO4--	0.813	MGOH+	0.951	FECL2+	0.950	ALF5--	0.814
NASO4-	0.950	NH4+	0.948	FECL4-	0.949	ALF6---	0.630

CHEMICAL COMPONENTS IN DEEP WATER (PPM AND LOG MOLE)

H+ (ACT.)	0.00	-7.942	MG++	0.22	-5.047	FE(OH)3	0.00	0.000
OH-	0.09	-5.284	NACL	0.00	-7.540	FE(OH)4-	0.00	0.000
H4SiO4	49.34	-3.290	KCL	0.00	-9.626	FECL+	0.00	0.000
H3SiO4-	1.49	-4.806	NASO4-	0.01	-6.903	FECL2	0.00	0.000
H2SiO4--	0.00	-8.158	KSO4-	0.00	-8.228	FECL++	0.00	0.000
NAH3SiO4	0.03	-6.542	CASO4	0.06	-6.354	FECL2+	0.00	0.000
H3BO3	0.00	0.000	MGSO4	0.01	-7.029	FECL3	0.00	0.000
H2BO3-	0.00	0.000	CACO3	0.17	-5.767	FECL4-	0.00	0.000
H2CO3	1.98	-4.495	MSCO3	0.01	-7.127	FESO4	0.00	0.000
HCO3-	85.93	-2.651	CAHCO3+	0.28	-5.564	FESO4+	0.00	0.000
CO3--	0.56	-5.027	MGHCO3+	0.01	-6.834	AL+++	0.00	0.000
H2S	0.00	0.000	CAOH+	0.00	-8.009	ALOH++	0.00	0.000
HS-	0.00	0.000	MGOH+	0.00	-8.071	AL(OH)2+	0.00	0.000
S--	0.00	0.000	NH4OH	0.00	0.000	AL(OH)3	0.00	0.000
H2SO4	0.00	-20.583	NH4+	0.00	0.000	AL(OH)4-	0.00	0.000
HSO4-	0.00	-10.063	FE++	0.00	0.000	ALSO4+	0.00	0.000
SO4--	4.07	-4.373	FE+++	0.00	0.000	AL(SO4)2-	0.00	0.000
HF	0.00	-9.677	FE(OH)+	0.00	0.000	ALF++	0.00	0.000
F-	0.15	-5.103	FE(OH)2	0.00	0.000	ALF2+	0.00	0.000
CL-	12.91	-3.439	FE(OH)3-	0.00	0.000	ALF3	0.00	0.000
NA+	35.78	-2.808	FE(OH)4--	0.00	0.000	ALF4-	0.00	0.000
K+	0.67	-4.766	FE(OH)++	0.00	0.000	ALF5--	0.00	0.000
CA++	4.28	-3.971	FE(OH)2+	0.00	0.000	ALF6---	0.00	0.000

IONIC STRENGTH = 0.00202 IONIC BALANCE : CATIONS (MOL.EQ.) 0.00180806
 ANIONS (MOL.EQ.) 0.00190447
 DIFFERENCE (%) -5.19

CHEMICAL GEOTHERMOMETERS DEGREES C 1000/T DEGREES KELVIN = 3.09

QUARTZ 80.7
 CHALCEDONY 50.7
 NAK 69.4

OXIDATION POTENTIAL (VOLTS) : EH H2S= 99.999 EH CH4= 99.999 EH H2= 99.999 EH NH3= 99.999

LOG SOLUBILITY PRODUCTS OF MINERALS IN DEEP WATER

	TEOR.	CALC.		TEOR.	CALC.		TEOR.	CALC.
ADULARIA	-19.622	99.999	ALBITE LOW	-18.677	99.999	ANALCIME	-14.854	99.999
ANHYDRITE	-4.974	-8.522	CALCITE	-8.728	-9.175	CHALCEDONY	-3.290	-3.290
MG-CHLORITE	-82.830	99.999	FLUORITE	-10.732	-14.309	GOETHITE	-6.405	99.999
LAUMONTITE	-30.160	99.999	MICROCLINE	-21.397	99.999	MAGNETITE	-33.496	99.999
CA-MONTMOR.	-101.094	99.999	K-MONTMOR.	-50.023	99.999	MG-MONTMOR.	-101.947	99.999
NA-MONTMOR.	-49.832	99.999	MUSCOVITE	-24.935	99.999	PREHNITE	-39.222	99.999
PYRRHOTITE	-124.668	99.999	PYRITE	-185.007	99.999	QUARTZ	-3.632	-3.290
WAIKAKITE	-26.500	99.999	WOLLASTONITE	12.574	8.535	ZOISITE	-37.886	99.999
EPIDOTE	-47.676	99.999	MARCASITE	-158.043	99.999			