ANALYST: S. B. NEUMANN 16-FEB-83 09:33:49 PROGRAM: GST

SCHLUMBERGER

GAMMA RAY SPECTROSCOPY CAPTURE MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
COUNTRY : LEA
REFERENCE: TEXAS
LOGGED : DEC. 10, 1981

THE HEADINGS IN THE DATA LIST IDENTIFY THE FOLLOWING TYPES OF DATA:

DEPTH - THIS IS THE DEPTH AT WHICH THE DATA WAS COMPUTED.

PHIE - EFFECTIVE POROSITY

VSH - SHALE VOLUME

SW - WATER SATURATION

I-PHIE - THIS IS THE EFFECTIVE POROSITY INTEGRATED FROM THE BOTTOM DEPTH OF THE JOB TO THIS DEPTH.

I-HY - THIS IS THE VALUE OF (1 - SW) * PHIE INTEGRATED FROM THE BOTTOM DEPTH OF THE JOB TO THIS DEPTH.

DATA IS NOT PRINTED IF SHALE VOLUME GREATER THAN .75
DATA IS NOT PRINTED IF PHIE IS LESS THAN 4 PU.

DEPTH FT	PHIE PU	VSH PU	Sw PU	I-PHIE FT	I-HY FT
3597.0	6.5	19.9	59.9	30.22	13.41
3598.0	4.0	14.1	93.3	30.16	13.39
3612.0	4.9	21.5	68.7	29.96	13.38
3613.0	9.1	27.3	36.0	29.90	13.36
3614.0	7.3	28.3	28.1	29.81	13.30
3615.0	5.0	28.1	26.9	29.75	13.25
3616.0	4.4	30.9	23.9	29.70	13.21
3630.0	8.7	18.2	65.2	29.52	13.16
3631.0	11.8	23.3	24.5	29.42	13.11
3632.0	7.0	12.4	34.6	29.31	13.03
3641.0	4.2	7.8	80.6	29.20	12.99
3645.0	13.2	0	30.6	29.12	12.97
3646.0	10.2	0	44.6	28.98	12.86
3661.0	4.5	0	58.1	28.84	12.82
3679.0	4.7	13.8	37.8	28.74	12.79
3683.0	5.1	.8	89.6	28.65	12.77
3684.0	7.8	6.6	65.6	28.59	12.76
3685.0	7.1	2.5	70.2	28.51	12.73
3691.0	4.4	0	83.1	28.37	12.70
3696.0	5.7	0	94.5	28.24	12.70
3697.0	9.2	2.4	89.6	28.17	12.69
3698.0	7.9	0	94.0	28.08	12.68
3699.0	4.9	0	97.3	28.00	12.68
3704.0	7.7	1.6	85.0	27.90	12.68
3705.0	9.8	.3	78.8	27.81	12.66
3706.0	6.8	0	93.1	27.72	12.64
3727.0	4.2	0	23.0	27.42	12.60
3735.0	6.4	0	75.6	27.30	12.54
3736.0	8.9	16.5	44.6	27.23	12.52
3737.0	6.6	15.8	51.0	27.14	12.49
3738.0	4.3	0	91.2	27.08	12.45
3739.0	7.1	0	85.1	27.03	12.44
3740.0	10.9	.8	54.8	26.95	12.42

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
3741.0	6.8	0	39.4	26.84	12.37
3742.0	5.8	0	38.4	26.76	12.32
3743.0	4.4	0	39.0	26.71	12.29
3744.0	5.1	0	38.5	26.66	12.26
3745.0	4.1	0	64.4	26.61	12.23
3763.0	4.2	0	61.7	26.41	12.21
3764.0	4.5	0	76.1	26.37	12.19
3767.0	7.9	0	88.5	26.25	12.18
3768.0	8.7	0	92.0	26.17	12.17
3769.0	7.8	8.2	97.6	26.08	12.17
3770.0	9.3	16.0	91.8	26.00	12.17
3771.0	11.1	12.9	86.6	25.90	12.16
3772.0	13.2	7.1	75.2	25.79	12.14
3773.0	13.6	6.5	60.5	25.66	12.10
3774.0	13.8	0	57.6	25.52	12.04
3775.0	9.3	0	67.5	25.39	11.99
3776.0	6.5	0	82.9	25.31	11.97
3777.0	4.3	0	96.1	25.25	11.96
3779.0	5.0	0	100.0	25.17	11.96
3780.0	7.2	0	93.1	25.11	11.96
3781.0	8.7	1.6	73.3	25.04	11.95
3782.0	9.8	0	57.4	24.95	11.92
3783.0	9.3	0	53.5	24.85	11.87
3784.0	6.1	0	60.0	24.76	11.84
3785.0	4.7	0	74.8	24.70	11.82
3789.0	4.4	0	80.2	24.59	11.80
3790.0	4.6	0	85.7	24.54	11.79
3792.0	5.9	1.1	92.1	24.46	11.79
3793.0	9.2	.9	78.8	24.39	11.78
3794.0	9.4	0	84.7	24.30	11.76
3795.0	9.1	2.7	89.9	24.20	11.75
3796.0	8.3	13.5	85.4	24.12	11.74
3797.0	8.3	3.5	93.6	24.04	11.73
3798.0	8.0	0	97.3	23.95	11.72
3799.0	4.2	0	99.1	23.88	11.72
3802.0	4.2	0	69.4	23.78	11.72
3803.0	6.7	0	42.3	23.74	11.70
3804.0	9.1	0	33.1	23.66	11.65
3805.0	10.4	0	33.6	23.57	11.59

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FI
3806.0	13.8	0	31.8	23.45	11.51
3807.0	14.2	0	32.5	23.31	11.42
3808.0	8.2	0	46.2	23.19	11.34
3809.0	6.3	0	59.9	23.12	11.30
3810.0	8.3	0	61.2	23.05	11.28
3811.0	11.1	0	57.4	22.96	11.24
3812.0	12.5	0	55.4	22.85	11.19
3813.0	12.3	0	58.1	22.72	11.14
3814.0	14.5	.2	55.8	22.60	11.08
3815.0	15.0	7.3	52.4	22.45	11.01
3816.0	14.6	8.4	53.0	22.30	10.94
3817.0	14.4	8.1	58.7	22.15	10.88
3818.0	9.7	0	82.5	22.02	10.83
3819.0	4.7	0	98.2	21.94	10.82
3823.0	7.8	0	55.3	21.78	10.80
3824.0	10.0	0	43.4	21.70	10.75
3825.0	10.2	0	40.7	21.60	10.70
3826.0	8.0	0	41.3	21.50	10.64
3827.0	7.1	0	43.8	21.42	10.59
3828.0	7.0	0	45.4	21.35	10.56
3829.0	7.9	0	38.8	21.28	10.52
3830.0	9.6	0	23.9	21.20	10.46
3831.0	8.3	0	16.7	21.10	10.38
3832.0	4.2	0	47.2	21.03	10.32
3834.0	4.1	0	43.9	20.97	10.31
3835.0	7.7	0	11.1	20.92	10.27
3836.0	9.7	0	10.0	20.84	10.20
3837.0	10.0	0	12.3	20.74	10.11
3838.0	7.1	0	18.0	20.64	10.03
3839.0	7.6	0	17.0	20.57	9.97
3840.0	9.2	0	13.7	20.49	9.90
3841.0	9.7	0	14.4	20.40	9.82
3842.0	9.9	0	15.0	20.30	9.74
3843.0	10.0	0	13.9	20.20	9.65
3844.0	7.3	0	16.2	20.11	9.57
3845.0	4.9	0	21.6	20.04	9.52
3846.0	4.6	0	33.0	19.99	9.48
3850.0	8.6	0	47.7	19.85	9.43
3851.0	12.3	0	35.4	19.75	9.38
3852.0	13.1	0	42.3	19.62	9.29
3853.0	10.8	0	60.4	19.50	9.23
3854.0	10.5	.2	68.7	19.39	9.19

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
3855.0	12.4	1.5	63.2	19.28	9.15
3856.0	13.9	1.4	58.9	19.16	9.10
3857.0	15.0	3.6	51.4	19.02	9.05
3858.0	16.2	3.4	42.0	18.86	8.97
3859.0	16.4	.4	40.2	18.70	8.87
3860.0	12.6	.5	51.5	18.54	8.78
3861.0	10.2	5.9	62.6	18.42	8.72
3862.0	10.4	3.7	68.9	18.32	8.69
3863.0	10.3	0	70.5	18.21	8.66
3864.0	10.0	0	70.2	18.11	8.63
3865.0	10.9	0	72.9	18.01	8.60
3866.0	13.0	1.9	72.2	17.89	8.56
3867.0	13.4	10.0	67.1	17.76	8.53
3868.0	12.9	12.1	61.9	17.62	8.48
3869.0	10.9	7.0	58.3	17.50	8.43
3870.0	8.6	3.6	57.3	17.39	8.39
3871.0	5.9	0	61.1	17.31	8.35
3872.0	4.5	0	58.1	17.26	8.33
3873.0	4.4	0	53.6	17.22	8.31
3877.0	4.1	0	52.6	17.10	8.28
3881.0	5.1	4.3	94.2	17.01	8.25
3882.0	6.9	3.3	91.3	16.95	8.25
3897.0	6.9	0	23.7	16.61	8.16
3898.0	7.9	0	37.1	16.54	8.10
3899.0	7.0	0	48.0	16.46	8.06
3900.0	6.5	0	28.7	16.39	8.02
3913.0	4.3	1.0	93.1	16.07	7.97
3919.0	4.1	11.3	55.1	15.94	7.95
3920.0	4.7	9.7	31.8	15.90	7.93
3946.0	7.4	0	97.7	15.54	7.87
3947.0	8.0	0	74.5	15.46	7.86
3948.0	7.4	5.8	29.5	15.38	7.83
3949.0	6.4	4.5	35.6	15.31	7.78
3950.0	5.1	0	49.7	15.24	7.74
3954.0	8.2	.2	42.7	15.09	7.67
3955.0	13.1	3.9	15.6	14.99	7.60
3956.0	10.0	3.9	36.0	14.87	7.50
3957.0	6.5	0	60.2	14.78	7.45

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
3958.0	7.1	0	33.8	14.72	7.42
3959.0	7.3	0	20.8	14.64	7.37
3960.0	8.5	0	26.5	14.57	7.31
3961.0	8.0	0	50.5	14.48	7.25
3962.0	7.6	0	79.0	14.40	7.22
3963.0	8.2	2.2	69.8	14.32	7.20
3964.0	6.3	10.2	50.2	14.25	7.17
3965.0	6.6	5.2	73.5	14.19	7.14
3966.0	6.9	0	79.4	14.12	7.13
3967.0	6.5	0	57.7	14.05	7.11
3968.0	10.7	0	34.8	13.98	7.07
3969.0	12.1	0	39.1	13.86	7.00
3970.0	5.8	1.5	80.6	13.76	6.94
3971.0	5.9	1.6	100.0	13.70	6.93
3972.0	8.4	1.2	100.0	13.63	6.93
3973.0	7.5	7.0	100.0	13.55	6.93
3974.0	7.7	13.4	97.6	13.48	6.93
3975.0	12.8	17.9	76.2	13.39	6.93
3976.0	14.0	20.4	54.1	13.25	6.88
3977.0	13.5	17.2	77.6	13.12	6.83
3978.0	12.1	22.8	71.0	12.99	6.80
3979.0	11.0	27.1	40.3	12.87	6.75
3980.0	9.6	21.7	58.5	12.77	6.69
3981.0	9.5	7.6	91.1	12.67	6.66
3982.0	5.5	6.5	100.0	12.58	6.66
3983.0	7.6	7.7	100.0	12.52	6.66
3984.0	7.3	10.9	100.0	12.44	6.66
3985.0	6.4	11.4	100.0	12.37	6.66
3986.0	7.8	11.0	96.8	12.31	6.66
3987.0	8.9	12.3	72.1	12.22	6.65
3988.0	8.3	9.6	54.1	12.14	6.62
3989.0	8.3	5.7	67.3	12.05	6.58
3990.0	8.6	6.2	74.9	11.97	6.56
3991.0	7.4	10.1	79.7	11.88	6.54
3992.0	5.7	11.6	93.2	11.81	6.52
3996.0	4.8	1.8	97.9	11.66	6.52
3997.0	5.7	8.0	95.5	11.61	6.52
3998.0	7.1	11.0	97.4	11.55	6.52
3999.0	8.9	10.2	77.0	11.47	6.51
4000.0	7.3	7.9	52.4	11.38	6.49
4001.0	9.2	1.8	50.8	11.31	6.45
4002.0	8.7	5.1	37.7	11.22	6.40
4003.0	6.8	5.5	35.3	11.13	6.35

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
4007.0	5.3	4.1	13.6	10.96	6.23
4008.0	7.0	3.0	38.1	10.90	6.18
4009.0	7.6	1.8	83.6	10.83	6.14
4010.0	7.0	2.3	99.9	10.75	6.14
4011.0	4.3	1.7	100.0	10.69	6.14
4013.0	5.6	2.6	86.6	10.61	6.13
4014.0	6.3	4.0	82.9	10.55	6.12
4015.0	5.1	2.6	95.9	10.49	6.12
4016.0	8.9	2.0	87.2	10.43	6.11
4017.0	14.4	0	58.6	10.33	6.09
4018.0	15.7	0	43.7	10.18	6.02
4019.0	14.5	0	56.7	10.02	5.94
4020.0	14.3	4.8	54.8	9.88	5.88
4021.0	17.9	0	47.1	9.72	5.80
4022.0	17.9	0	34.9	9.54	5.70
4023.0	15.2	0	27.5	9.37	5.59
4024.0	15.8	0	32.3	9.22	5.48
4025.0	13.6	0	45.7	9.06	5.38
4026.0	7.9	3.5	47.6	8.94	5.31
4027.0	5.3	3.7	61.3	8.87	5.28
4028.0	6.9	.1	78.8	8.81	5.26
4029.0	8.2	0	61.6	8.74	5.24
4030.0	8.1	0	60.1	8.66	5.21
4031.0	4.5	0	81.4	8.59	5.18
4032.0	4.0	0	53.1	8.55	5.17
4033.0	10.0	0	14.5	8.49	5.14
4034.0	14.5	0	14.7	8.38	5.04
4035.0	14.6	0	29.7	8.23	4.92
4036.0	18.6	0	37.5	8.08	4.82
4037.0	20.5	0	41.7	7.89	4.70
4038.0	11.5	0	59.8	7.70	4.60
4039.0	7.9	0	55.4	7.61	4.56
4040.0	13.9	0	22.5	7.52	4.51
4041.0	18.3	0	10.2	7.36	4.39
4042.0	17.3	0	10.0	7.18	4.22
4043.0	16.3	0	10.0	7.02	4.07
4044.0	16.5	0	10.0	6.85	3.93
4045.0	14.0	0	11.5	6.69	3.78
4046.0	11.1	0	30.2	6.56	3.67
4047.0	8.6	.5	59.9	6.46	3.60
4048.0	7.1	4.1	58.5	6.37	3.57
4049.0	6.0	5.8	51.3	6.30	3.54
4050.0	5.6	3.7	68.2	6.25	3.51
4051.0	4.4	.2	89.1	6.19	3.50

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
4052.0	4.3	0	83.8	6.15	3.50
4053.0	5.5	0	77.9	6.11	3.49
4054.0	7.0	.3	70.2	6.05	3.47
4055.0	7.7	3.0	60.4	5.98	3.45
4056.0	5.7	5.4	72.8	5.90	3.42
4057.0	4.7	5.3	89.7	5.85	3.41
4059.0	5.5	1.6	100.0	5.76	3.41
4060.0	6.2	1.0	100.0	5.71	3.41
4061.0	6.4	1.2	100.0	5.64	3.41
4062.0	6.6	.2	85.0	5.58	3.41
4063.0	6.7	0	47.9	5.51	3.39
4064.0	8.1	0	45.8	5.42	3.34
4065.0	5.6	0	67.6	5.35	3.30
4068.0	4.1	0	25.0	5.24	3.27
4069.0	7.9	0	12.1	5.19	3.23
4070.0	10.2	0	23.5	5.10	3.16
4071.0	5.6	0	49.0	5.01	3.09
4076.0	5.8	3.0	59.4	4.85	3.05
4077.0	6.6	2.5	73.9	4.79	3.03
4080.0	5.4	0	99.4	4.66	3.02
4081.0	4.5	.6	100.0	4.60	3.01
4084.0	5.6	1.7	66.3	4.49	3.00
4085.0	4.7	3.0	85.0	4.44	2.99
4086.0	6.5	3.4	78.8	4.39	2.98
4087.0	6.2	.7	71.1	4.32	2.96
4090.0	9.7	0	50.7	4.18	2.91
4091.0	12.1	2.2	36.6	4.08	2.86
4092.0	10.9	2.8	23.1	3.96	2.78
4093.0	8.0	0	42.8	3.85	2.70
4096.0	5.4	0	69.4	3.73	2.66
4097.0	10.5	8.9	21.1	3.66	2.63
4098.0	15.6	5.9	27.1	3.55	2.53
4099.0	18.3	0	38.1	3.38	2.42
4100.0	17.6	0	29.9	3.20	2.30
4101.0	16.1	0	28.0	3.03	2.18
4102.0	15.6	0	29.0	2.87	2.07
4103.0	15.8	0	23.0	2.71	1.96
4104.0	15.5	0	18.5	2.56	1.83

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
4105.0	13.7	0	22.5	2.40	1.71
4106.0	14.6	0	23.3	2.27	1.61
4107.0	17.5	0	23.0	2.11	1.49
4108.0	16.0	0	34.6	1.94	1.36
4109.0	15.8	0	45.4	1.78	1.26
4110.0	12.4	0	42.5	1.63	1.18
4111.0	8.8	0	26.0	1.52	1.11
4112.0	5.5	0	20.3	1.43	1.04
4115.0	6.2	0	19.9	1.34	.99
4116.0	11.1	0	10.0	1.26	.92
4117.0	11.9	0	10.0	1.14	.82
4118.0	9.9	0	10.2	1.03	.72
4119.0	11.1	0	10.7	.93	.62
4120.0	14.2	0	10.5	.81	.52
4121.0	12.3	0	19.7	.67	.39
4122.0	5.1	0	48.0	.56	.31
4124.0	4.6	0	30.6	.49	.27
4125.0	7.2	0	39.0	.44	.24
4126.0	9.9	1.4	31.4	.36	.19
4127.0	9.4	.8	15.5	.26	.12
4128.0	9.2	0	42.0	.16	.04
4129.0	6.0	0	89.2	.08	0
4130.0	4.8	.7	99.0	.02	0

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GAMMA RAY SPECTROSCOPY INELASTIC MODE INTERPRETATION

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WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
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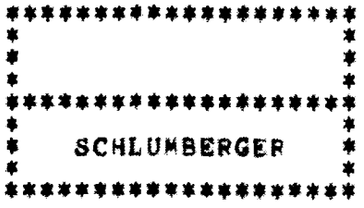
Schlumberger

ANALYST: S. B. NEUMANN 16-FEB-83 09:35:41 PROGRAM: GST



GAMMA RAY SPECTROSCOPY INELASTIC MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
COUNTRY : LEA
REFERENCE: TEXAS
LOGGED : DEC. 10, 1981

THE HEADINGS IN THE DATA LIST IDENTIFY THE FOLLOWING TYPES OF DATA:

DEPTH - THIS IS THE DEPTH AT WHICH THE DATA WAS COMPUTED.

VSH - VOLUME OF SHALE

ANHY - VOLUME OF ANHYDRITE

DOLO - VOLUME OF DOLOMITE

LIME - VOLUME OF LIMESTONE

SAND - VOLUME OF SANDSTONE

PHIE - EFFECTIVE POROSITY

COWW - CALCULATED COR OF FORMATION CONTAINING WATER

COWX - CALCULATED COR OF FORMATION CONTAINING OIL

COR - MEASURED CARBON OXYGEN RATIO

SW - WATER SATURATION CALCULATED FROM COR

DEPTH FT	VSH	ANHY	DOLO	LIME	SAND	PHIE PU	COMN	COMX	COR	SW
3614	28	0	8	23	33	7.3	.088	.115	.086	100
3620	5	1	93	0	0	.1	.206	.208	.177	100
3631	23	0	10	27	28	11.8	.086	.132	.120	27
3646	0	0	90	0	0	10.2	.161	.222	.193	70
3698	0	0	39	18	35	7.9	.133	.161	.145	56
3746	1	0	50	15	23	10.9	.135	.174	.168	16
3773	7	0	31	17	31	13.6	.098	.146	.140	13
3807	0	0	49	14	23	14.2	.126	.180	.169	20
3816	8	0	12	20	44	14.6	.075	.130	.103	49
3859	0	0	36	17	30	16.4	.107	.173	.132	63
3866	2	0	37	17	31	13.0	.118	.169	.132	73
3867	10	0	16	17	44	13.4	.081	.133	.132	5
3955	4	0	83	0	0	13.1	.171	.228	.227	5
3975	18	0	17	18	34	12.8	.088	.141	.067	100
3976	20	0	17	21	27	14.0	.091	.151	.067	100
4021	0	0	82	0	0	17.9	.159	.239	.199	50
4037	0	0	80	0	0	20.5	.158	.253	.205	51
4042	0	0	83	0	0	17.3	.161	.239	.224	20
4091	2	0	86	0	0	12.1	.176	.227	.199	55
4099	0	0	82	0	0	18.3	.158	.240	.204	44

ANALYST: S. B. NEUMANN 8-MAR-83 09:59:24 PROGRAM: GST

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GAMMA RAY SPECTROSCOPY CAPTURE MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
COUNTRY : LEA
REFFRENCE: TEXAS
LOGGED : DEC. 10, 1981

Schlumberger

ANALYST: S. B. NEUMANN 8-MAR-83 09:59:24 PROGRAM: GST

SCHLUMBERGER

GAMMA RAY SPECTROSCOPY CAPTURE MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
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THE HEADINGS IN THE DATA LIST IDENTIFY THE FOLLOWING TYPES OF DATA:

DEPTH - THIS IS THE DEPTH AT WHICH THE DATA WAS COMPUTED.

PHIE - EFFECTIVE POROSITY

VSH - SHALE VOLUME

SW - WATER SATURATION

I-PHIE - THIS IS THE EFFECTIVE POROSITY INTEGRATED FROM THE BOTTOM DEPTH OF THE JOB TO THIS DEPTH.

I-HY - THIS IS THE VALUE OF (1 - SW) * PHIE INTEGRATED FROM THE BOTTOM DEPTH OF THE JOB TO THIS DEPTH.

DATA IS NOT PRINTED IF SHALE VOLUME GREATER THAN .75
DATA IS NOT PRINTED IF PHIE IS LESS THAN 4 PU.

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
5599.0	5.3	31.3	25.8	24.83	8.17
5600.0	5.2	22.6	64.5	24.78	8.13
5609.0	4.4	1.5	62.6	24.61	8.10
5611.0	4.4	7.1	41.0	24.53	8.08
5612.0	5.4	4.9	10.8	24.49	8.05
5622.0	4.1	0	13.8	24.18	7.87
5623.0	4.6	0	28.4	24.14	7.83
5624.0	4.9	5.5	34.1	24.09	7.80
5627.0	4.4	16.3	99.8	23.98	7.75
5628.0	5.6	21.1	100.0	23.93	7.75
5629.0	6.4	19.7	100.0	23.87	7.75
5630.0	5.9	18.6	100.0	23.81	7.75
5631.0	6.1	16.3	100.0	23.75	7.75
5632.0	4.8	20.1	100.0	23.69	7.75
5633.0	5.0	24.1	92.6	23.64	7.75
5634.0	6.3	34.3	47.9	23.59	7.74
5635.0	7.0	24.7	15.3	23.53	7.70
5636.0	4.7	10.1	31.8	23.46	7.65
5651.0	4.6	22.9	29.7	23.13	7.57
5652.0	4.5	19.6	64.2	23.08	7.54
5653.0	4.7	21.3	69.3	23.04	7.52
5654.0	6.7	26.8	24.7	22.99	7.50
5655.0	6.3	14.8	23.8	22.92	7.45
5659.0	4.6	15.8	33.0	22.82	7.40
5660.0	4.6	17.8	22.2	22.77	7.36
5685.0	5.1	17.9	100.0	22.26	7.25
5686.0	5.7	14.9	100.0	22.21	7.25
5687.0	5.0	12.1	100.0	22.15	7.25
5688.0	4.1	18.8	100.0	22.10	7.25
5689.0	4.6	21.6	100.0	22.06	7.25
5690.0	4.9	20.0	95.5	22.02	7.25
5691.0	4.9	23.4	61.7	21.97	7.25
5692.0	6.5	24.2	21.1	21.91	7.22
5693.0	6.2	14.1	14.8	21.85	7.16
5700.0	4.5	0	43.0	21.62	7.05
5701.0	6.2	4.2	19.8	21.57	7.02

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
5702.0	7.2	4.3	10.5	21.50	6.96
5703.0	6.7	7.7	13.6	21.43	6.90
5704.0	5.8	10.0	32.5	21.36	6.85
5705.0	4.3	0	77.7	21.31	6.81
5709.0	5.9	4.3	89.8	21.18	6.80
5710.0	5.9	5.9	86.9	21.11	6.80
5711.0	4.8	16.3	70.7	21.06	6.79
5712.0	4.6	25.5	33.4	21.01	6.77
5713.0	5.8	25.2	11.8	20.97	6.74
5714.0	5.3	13.4	24.4	20.90	6.69
5731.0	4.8	7.0	98.7	20.40	6.53
5732.0	5.3	11.8	100.0	20.35	6.53
5733.0	5.0	19.1	100.0	20.30	6.53
5734.0	6.2	18.6	100.0	20.25	6.53
5735.0	5.8	21.8	69.4	20.19	6.53
5736.0	4.7	29.0	24.8	20.13	6.50
5747.0	4.3	11.4	30.8	19.89	6.37
5758.0	4.3	0	18.4	19.75	6.31
5760.0	4.7	0	32.7	19.67	6.25
5763.0	5.1	2.0	47.5	19.57	6.20
5764.0	5.8	4.1	27.6	19.51	6.17
5765.0	5.9	4.4	19.8	19.46	6.13
5777.0	4.1	0	95.5	19.14	6.06
5778.0	7.3	0	83.3	19.09	6.06
5779.0	8.9	0	78.8	19.02	6.05
5780.0	8.6	0	84.9	18.93	6.03
5781.0	8.9	2.1	85.3	18.84	6.01
5782.0	7.7	6.5	90.0	18.75	6.00
5783.0	4.8	7.2	98.8	18.68	6.00
5785.0	4.6	0	100.0	18.60	6.00
5786.0	6.5	.5	100.0	18.55	6.00
5794.0	4.5	0	41.5	18.36	5.97
5795.0	6.2	.6	26.2	18.31	5.94
5796.0	7.2	3.6	23.6	18.24	5.89
5797.0	6.8	0	38.3	18.17	5.83
5798.0	5.6	0	57.1	18.11	5.80

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
5903.0	5.6	9.9	92.4	17.59	5.73
5904.0	5.2	13.1	83.3	17.53	5.71
5980.0	4.4	0	39.1	17.16	5.70
5981.0	4.3	0	49.2	17.12	5.67
5995.0	9.2	0	76.3	17.01	5.64
5999.0	14.4	0	60.6	16.90	5.61
6000.0	11.7	7.9	57.3	16.76	5.55
6003.0	5.2	0	69.8	16.62	5.51
6201.0	7.3	15.7	24.2	16.04	5.45
6213.0	7.0	14.3	22.9	15.88	5.36
6240.0	8.9	7.4	29.8	15.70	5.28
6292.0	4.1	12.1	61.2	15.42	5.21
6305.0	5.0	2.5	96.2	15.34	5.20
6309.0	5.1	.6	34.5	15.21	5.19
6392.0	4.2	20.1	34.9	14.52	5.05
6400.0	5.5	24.6	67.3	14.41	5.02
6406.0	4.6	21.3	60.5	14.26	4.97
6422.0	4.9	36.3	26.7	13.93	4.87
6423.0	5.2	27.7	56.6	13.88	4.83
6426.0	4.4	19.3	100.0	13.76	4.82
6427.0	4.8	26.4	100.0	13.71	4.82
6428.0	5.8	26.1	100.0	13.66	4.82
6429.0	6.5	28.4	100.0	13.60	4.82
6430.0	7.1	23.8	100.0	13.54	4.82
6431.0	7.3	18.1	100.0	13.46	4.82
6432.0	6.6	17.5	100.0	13.39	4.82
6433.0	6.8	20.1	100.0	13.33	4.82
6434.0	7.8	19.5	100.0	13.26	4.82
6435.0	8.7	12.1	100.0	13.18	4.82
6436.0	7.3	13.9	100.0	13.09	4.82

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
6437.0	5.6	38.6	100.0	13.03	4.8[illegible]
6438.0	5.4	53.5	100.0	12.97	4.8[illegible]
6439.0	5.6	54.0	100.0	12.91	4.8[illegible]
6440.0	5.9	51.8	100.0	12.86	4.8[illegible]
6441.0	5.7	48.3	100.0	12.80	4.8[illegible]
6442.0	5.5	52.0	100.0	12.74	4.8[illegible]
6443.0	5.6	50.8	100.0	12.69	4.8[illegible]
6444.0	6.1	50.7	100.0	12.63	4.8[illegible]
6445.0	6.4	47.5	100.0	12.57	4.8[illegible]
6446.0	5.7	37.2	100.0	12.50	4.8[illegible]
6447.0	4.4	32.7	88.7	12.45	4.8[illegible]
6448.0	6.6	34.4	68.2	12.40	4.8[illegible]
6449.0	8.7	26.8	67.9	12.33	4.78
6450.0	7.7	29.8	71.7	12.24	4.76
6451.0	6.6	28.7	73.0	12.17	4.74
6452.0	7.2	29.1	68.5	12.10	4.72
6453.0	6.8	28.7	69.8	12.03	4.69
6454.0	6.7	35.9	44.3	11.96	4.67
6455.0	6.2	45.6	14.9	11.89	4.63
6456.0	5.2	41.5	10.0	11.83	4.58
6457.0	6.0	35.2	11.3	11.78	4.53
6458.0	5.5	32.7	14.1	11.72	4.48
6459.0	6.0	29.0	18.9	11.67	4.43
6460.0	7.4	14.1	55.7	11.60	4.38
6461.0	6.4	0	94.7	11.53	4.36
6462.0	4.6	2.6	96.1	11.47	4.36
6463.0	4.7	.2	91.7	11.43	4.35
6475.0	11.2	7.1	19.9	11.21	4.30
6479.0	4.9	7.9	66.2	11.05	4.20
6481.0	4.5	0	100.0	10.96	4.19
6482.0	5.3	0	90.1	10.91	4.19
6483.0	7.7	27.3	40.6	10.85	4.17
6484.0	10.0	26.4	11.1	10.77	4.11
6485.0	6.8	15.5	23.2	10.68	4.03
6486.0	7.8	7.3	43.7	10.61	3.98
6487.0	6.9	8.0	56.7	10.53	3.94
6488.0	5.6	7.5	76.3	10.46	3.92
6492.0	5.2	12.2	36.0	10.33	3.89
6496.0	4.7	24.4	25.2	10.26	3.85
6497.0	5.5	28.3	18.7	10.20	3.81

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
6501.0	6.7	41.7	84.4	10.07	3.76
6502.0	6.9	43.1	98.6	10.00	3.75
6503.0	6.5	46.4	100.0	9.94	3.75
6504.0	8.3	40.4	99.4	9.87	3.75
6505.0	8.9	35.2	96.9	9.78	3.75
6506.0	6.2	31.5	84.0	9.70	3.75
6507.0	5.3	37.3	36.7	9.64	3.73
6508.0	4.6	22.2	41.2	9.58	3.69
6511.0	5.7	12.4	27.7	9.51	3.65
6514.0	4.1	0	81.6	9.39	3.61
6515.0	7.1	12.6	41.0	9.34	3.59
6539.0	9.3	44.6	27.9	9.07	3.53
6540.0	14.5	29.4	10.3	8.96	3.45
6584.0	5.5	0	36.0	8.51	3.32
6585.0	8.7	0	24.6	8.45	3.27
6586.0	9.1	0	26.5	8.35	3.20
6587.0	7.8	0	29.5	8.26	3.14
6588.0	5.5	0	44.9	8.19	3.09
6592.0	4.5	11.2	18.4	8.10	3.05
6593.0	4.2	13.7	11.0	8.06	3.01
6595.0	6.2	15.5	12.8	7.97	2.94
6596.0	7.8	11.3	22.4	7.90	2.89
6603.0	5.9	0	54.7	7.71	2.80
6604.0	7.9	0	44.6	7.64	2.77
6656.0	4.5	24.3	21.8	7.17	2.67
6671.0	4.1	7.9	91.5	7.01	2.63
6672.0	4.4	0	92.7	6.97	2.62
6702.0	6.2	0	76.9	6.71	2.61
6703.0	6.3	0	76.9	6.65	2.60
6704.0	6.1	0	89.4	6.59	2.58
6705.0	4.4	0	97.8	6.53	2.56
6716.0	4.1	6.7	42.2	6.40	2.58
6717.0	5.3	10.5	28.5	6.35	2.54

DEPTH FT	PHIE PU	VSH PU	SW PU	I-PHIE FT	I-HY FT
6721.0	4.7	0	30.4	6.24	2.49
6729.0	4.5	0	83.5	6.09	2.45
6730.0	4.2	1.6	88.9	6.05	2.44
6732.0	4.4	0	61.3	5.97	2.43
6733.0	4.8	0	39.8	5.93	2.41
6734.0	5.6	0	29.3	5.88	2.38
6735.0	7.4	0	21.6	5.82	2.34
6736.0	8.8	1.3	14.0	5.74	2.27
6737.0	11.5	3	13.0	5.64	2.19
6738.0	9.0	0	19.2	5.53	2.09
6739.0	7.0	0	25.2	5.45	2.03
6740.0	8.8	0	30.1	5.37	1.97
6741.0	6.0	0	60.5	5.29	1.92
6743.0	5.5	1.5	74.6	5.21	1.90
6744.0	6.6	0	68.6	5.15	1.88
6747.0	5.1	1.1	67.4	5.02	1.86
6748.0	5.6	0	56.6	4.97	1.84
6749.0	8.3	0	41.7	4.91	1.81
6750.0	11.8	0	30.8	4.81	1.75
6751.0	10.0	0	37.5	4.70	1.67
6752.0	8.3	.5	43.9	4.60	1.61
6753.0	4.3	6.0	62.2	4.53	1.57
6755.0	4.7	0	91.1	4.46	1.56
6756.0	6.7	0	69.2	4.41	1.55
6757.0	8.1	16.8	29.2	4.34	1.53
6759.0	9.5	19.5	14.1	4.25	1.45
6761.0	5.2	0	88.3	4.10	1.38
6762.0	5.7	0	78.2	4.05	1.37
6763.0	6.8	0	65.6	3.99	1.36
6764.0	7.3	0	61.0	3.92	1.33
6765.0	5.8	0	72.4	3.85	1.30
6766.0	5.2	0	80.3	3.79	1.29
6767.0	5.6	1.6	73.1	3.74	1.28
6768.0	6.3	0	69.9	3.68	1.26
6769.0	6.3	0	74.4	3.62	1.24
6770.0	5.9	0	77.9	3.55	1.23
6771.0	5.0	0	82.0	3.50	1.22

DEPTH FT	PHIE PU	VSH PU	SW PU	I=PHIE FT	I=HY FT
6773.0	4.5	2.8	90.3	3.41	1.20
6774.0	4.3	0	95.4	3.36	1.20
6775.0	4.2	0	93.8	3.32	1.20
6786.0	5.2	5.9	16.5	3.08	1.15
6795.0	4.7	.5	100.0	2.85	1.07
6798.0	4.4	0	61.5	2.76	1.07
6799.0	6.4	0	35.8	2.71	1.04
6800.0	4.4	0	59.9	2.65	1.01
6803.0	7.0	0	57.4	2.55	.98
6804.0	6.4	0	61.6	2.47	.95
6809.0	4.7	0	84.5	2.31	.92
6812.0	8.2	3.8	47.7	2.19	.89
6813.0	8.6	0	61.0	2.10	.85
6814.0	5.6	0	82.6	2.02	.82
6815.0	4.1	0	93.2	1.97	.82
6818.0	4.3	0	77.2	1.86	.81
6819.0	8.2	2.6	53.3	1.81	.79
6820.0	10.5	1.2	47.3	1.72	.75
6821.0	10.0	0	54.0	1.62	.70
6822.0	10.6	4.2	44.7	1.52	.65
6823.0	13.7	8.1	23.7	1.41	.58
6824.0	16.8	10.0	14.7	1.26	.46
6825.0	16.3	.8	27.1	1.09	.32
6826.0	9.9	0	56.2	.94	.22
6840.0	9.1	0	51.7	.69	.18
6841.0	9.8	0	59.5	.59	.13
6842.0	4.1	0	88.9	.50	.10
6866.0	4.1	0	75.6	.31	.09
6867.0	5.7	4.6	37.3	.27	.08
6868.0	7.3	7.0	44.5	.21	.04
6869.0	9.1	0	89.4	.13	.01
6870.0	8.1	0	99.0	.04	0

ANALYST: S. B. NEUMANN 8-MAR-83 10:01:44 PROGRAM: GST

SCHLUMBERGER

GAMMA RAY SPECTROSCOPY INELASTIC MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
FIELD : HARDY
COUNTRY : LEA
REFERENCE: TEXAS
LOGGED : DEC. 10, 1981

ANALYST: S. B. NEUMANN 8-MAR-83 10:01:44 PROGRAM: GST

SCHLUMBERGER

GAMMA RAY SPECTROSCOPY INELASTIC MODE INTERPRETATION

COMPANY : GULF OIL CO.
WELL : R. R. BELL (NCT-E) #4
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Schlumberger

THE HEADINGS IN THE DATA LIST IDENTIFY THE FOLLOWING TYPES OF DATA:

DEPTH - THIS IS THE DEPTH AT WHICH THE DATA WAS COMPUTED.
VSH - VOLUME OF SHALE
VANHY - VOLUME OF ANHYDRITE
VDOLC - VOLUME OF DOLOMITE
VLIME - VOLUME OF LIMESTONE
VSAND - VOLUME OF SANDSTONE
PHIE - EFFECTIVE POROSITY
CORW - CALCULATED COR OF FORMATION CONTAINING WATER
CORX - CALCULATED COR OF FORMATION CONTAINING OIL
COR - MEASURED CARBON OXYGEN RATIO
SW - WATER SATURATION CALCULATED FROM COR

DEPTH FT	VSH	ANHY	DOLO	LIME	SAND	PHIE PU	COMN	COMX	COR	SW
5780	0	0	56	14	21	8.6	.167	.205	.171	90
5796	4	0	89	0	0	7.2	.199	.230	.206	78
6000	8	0	78	2	0	11.7	.174	.227	.209	33
6539	45	0	18	17	12	9.3	.089	.130	.163	5
6540	29	2	27	16	12	14.5	.103	.170	.163	10
6586	0	0	79	12	0	9.1	.199	.240	.204	88
6604	0	0	92	0	0	7.9	.204	.238	.204	100
6737	0	0	78	10	0	11.5	.190	.242	.187	100
6750	0	0	85	3	0	11.8	.188	.242	.210	60
6756	19	0	71	0	0	9.5	.160	.202	.160	100
6824	10	0	73	0	0	16.8	.154	.233	.216	21
6841	0	0	19	72	0	9.8	.197	.245	.177	100
6869	0	0	80	10	0	9.1	.199	.240	.181	100
6870	0	0	80	12	0	8.1	.203	.239	.181	100