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Welex 2"=100'

DIP LOG CALCULATIONS

COMPANY OREGON NATURAL GAS DEVELOPMENT CORP.
WELL CROWN ZELLERBACH NO. 1
FIELD TILLAMOOK AREA
COUNTY TILL. STATE ORE.

COMPANY OREGON NATURAL GAS DEVELOPMENT CORP.
WELL CROWN ZELLERBACH NO. 1
FIELD TILLAMOOK AREA
COUNTY TILLAMOOK STATE OREGON

Location 1714' SOUTH & 2059' EAST OF THE NORTHWEST CORNER OF:
Other Services: IEL C/AVL SWC

Sec. 13 Twp. 2S Rge. 10W

Permanent Datum G.L. Elev. 199.7
Log Measured From K.B. OR 10.8 Ft. Above Perm. Datum
Drilling Measured From K.B.
Elev.: K.B. 210.5 D.F. G.L. 199.7

Date	1-6-80		
Run No.	ONE		
Depth - Driller	6158		
Depth - Welex	6145		
Btm. Log Inter.	6143		
Top Log Inter.	666		
Casing - Driller	8 5/8 @ 667	@	@
Casing - Welex	666		
Bit Size	7 7/8		
Type Fluid in Hole	LIGNO-SULF		
Dens. | Visc.	79 | 51	|	|
pH | Fluid Loss	10.5 | 13.8 ml	| ml	| ml
Source of Sample	CIRCULATED		
Rm @ Meas. Temp.	2.88 @ 38 °F	@ °F	@ °F
Rmf @ Meas. Temp.	2.57 @ 38 °F	@ °F	@ °F
Rmc @ Meas. Temp.	3.06 @ 38 °F	@ °F	@ °F
Source Rmf | Rmc	MEASURED	|	|
Rm @ BHT	0.76 @ 143 °F	@ °F	@ °F
Time Since Circ.	3 1/2 HOURS		
Max. Rec. Temp.	143 °F @ BHT	°F @	°F @
Equip. | Location	9430 | WDLND	|	|
Recorded By	DOVE		
Witnessed By	BRUER, CLARE		

Fold Here

Service Ticket No. 048984 Remarks:

Change in Mud Type or Additional Samples

Date | Sample No.	|	|
Depth - Driller		
Type Fluid in Hole		
Dens. | Visc.	|	|
pH | Fluid Loss	| ml	|
Source of Sample		
Rm @ Meas. Temp.	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F
Source: Rmf | Rmc	|	|
Rm @ BHT	0.76 @ 143 °F	@ °F
Rmf @ BHT	0.68 @ 143 °F	@ °F
Rmc @ BHT	0.81 @ 143 °F	@ °F

Run No.	1	2	3	4
Tool Type	DIP			
Tool Number	12892			
Pad Type	FORXO			
Correlated By				
Computed By				

MAND. 15632
Remarks: TRAN. 12892

Welex does not guarantee the accuracy of any interpretation of log data, conversion of log data to physical rock parameters, or recommendations which may be given by Welex personnel or which may appear on the log or in any other form. Any user of such data, interpretations, conversions, or recommendations agrees that Welex is not responsible, except where due to gross negligence or wilful misconduct, for any loss, damages, or expenses from the use thereof.

Magnetic Declination NORTH 20.5° EAST

TABLE OF CONSTANTS FOR DETERMINING VERTICAL DIFFERENCE AT VARIOUS DIP ANGLES

DIP ANGLES Degrees	CONSTANT	DIP ANGLES Degrees	CONSTANT	DIP ANGLES Degrees	CONSTANT	DIP ANGLES Degrees	CONSTANT
1	.0175	11	.194	21	.384	35	.700
2	.035	12	.213	22	.404	40	.839
3	.052	13	.231	23	.425	45	1.000
4	.070	14	.249	24	.445	50	1.192
5	.088	15	.268	25	.466	55	1.428
6	.105	16	.287	26	.487	60	1.732
7	.123	17	.306	27	.509	65	2.144
8	.141	18	.325	28	.531	70	2.748
9	.158	19	.344	29	.554	75	3.732
10	.176	20	.364	30	.577	80	5.671

Vertical difference in feet is obtained by multiplying the constant for any given dip angle by the horizontal distance in feet.
Example: Dip angle 10°, Horizontal distance 440 ft.
Vertical difference = .176 x 440 = 77.44

GRAPHIC PRESENTATION

OREGON NATURAL GAS DEVELOPMENT CORPORATION
CROWN ZELLERBACH NO. 1
TILLAMOOK AREA
TILLAMOOK COUNTY, OREGON

T.D. LOGGED 6143
T.D. DRILLER 6158
T.D. WELEX 6145
ELEV: KB 210.5 GL 199.7