MV Geophysical

BOREHOLE COMPENSATED SONIC w/ VARIABLE DENSITY LOG

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk
State/Prv Florida

Company **Rowe Well Drilling Co.**
Well **SE-DEW-1**
Field **Frostproof**
County **Polk** State/Prv . **Florida**
Location E. of Frostproof on CR-630
Polk County Utilities
PBS&J

Other Services
XY/GR,DIL
BHC,FLO
FCT,DHTV

Permanent Datum	G.L	Elevation	Elevation
Log Measured From	G.L		K.B.
Drilling Measured From	G.L.		D.F.
			G.L.

Date	11-FEB-2009		
Run Number	TWO		
Depth Driller	2417'		
Depth Logger	2410'		
Bottom Logged Interval	2402'		
Top Log Interval	981'		
Open Hole Size	12.25"		
Type Fluid	H2O		
Density / Viscosity	NA/NA		
Max. Recorded Temp.	See FCT log		
Estimated Cement Top	NA		
Time Well Ready	07:30 3/11/2009		
Time Logger on Bottom	13:30 3/11/2009		
Equipment Number	MVGS-1		
Location	Ft. Myers		
Recorded By	S.Miller/C.Miller		T.Toy (RWD)
Witnessed By	K.Dorsey (PBSJ)	M.Regan (PBSJ)	W.Nash (RWD)

	Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	981'	2417'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	24"	0.375" WT	SURFACE	981'
Prot. String				
Production String				
Liner				rdcsedew.db
Invoice No. 2009030		P.O. #	Job No.	* FIELD PRINT *

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

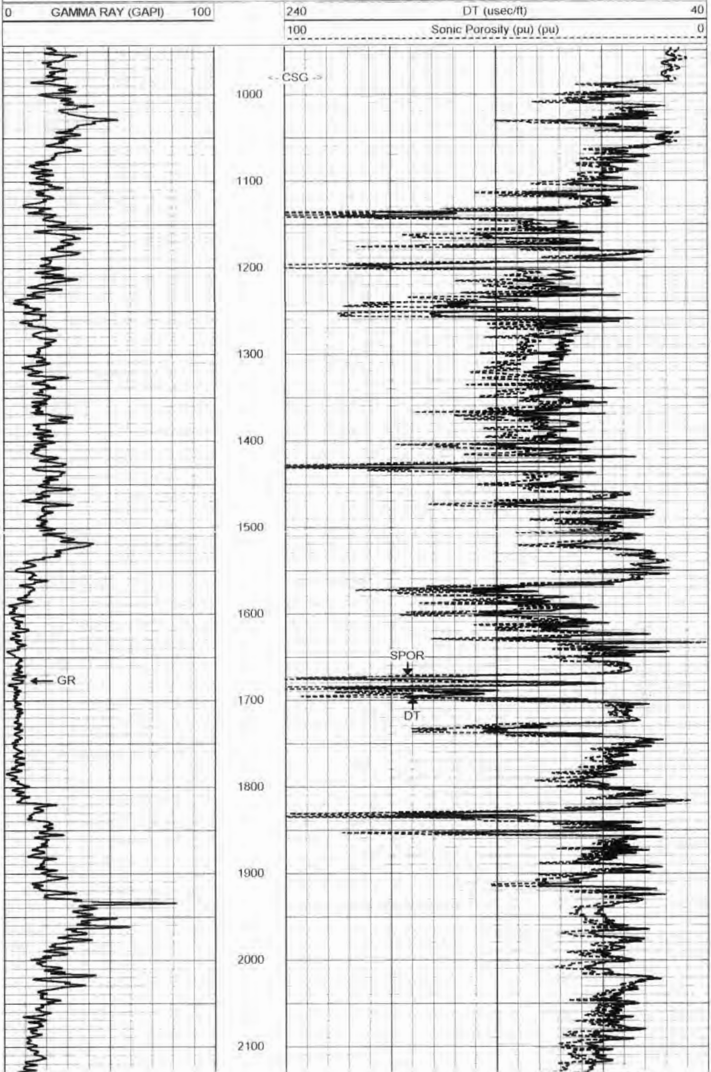
Comments

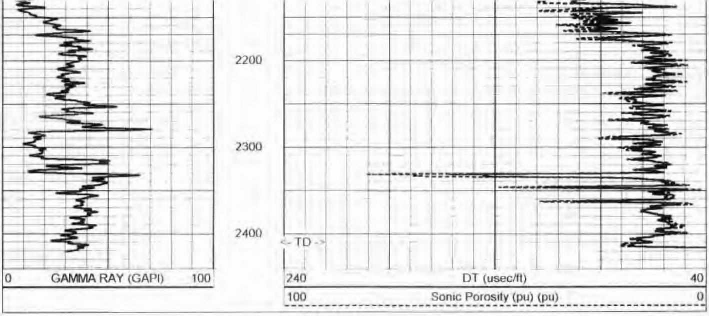
Sonic Porosity was run on a Limestone Matrix (=47.5)

MV Geophysical

MAIN PASS

Database File	rdcsedew.db
Dataset Pathname	run2/MAIN
Presentation Format	dtg-11.prs
Dataset Creation	Wed Mar 11 11:41:16 2009
Charted by	Depth in Feet scaled 1:1200

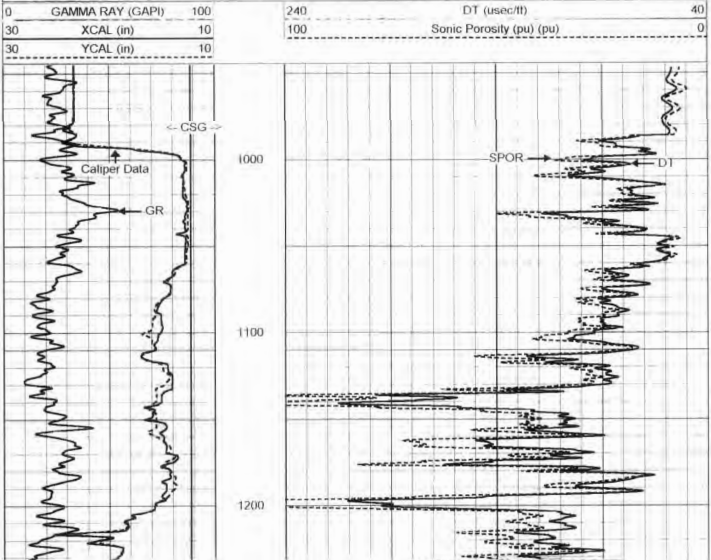


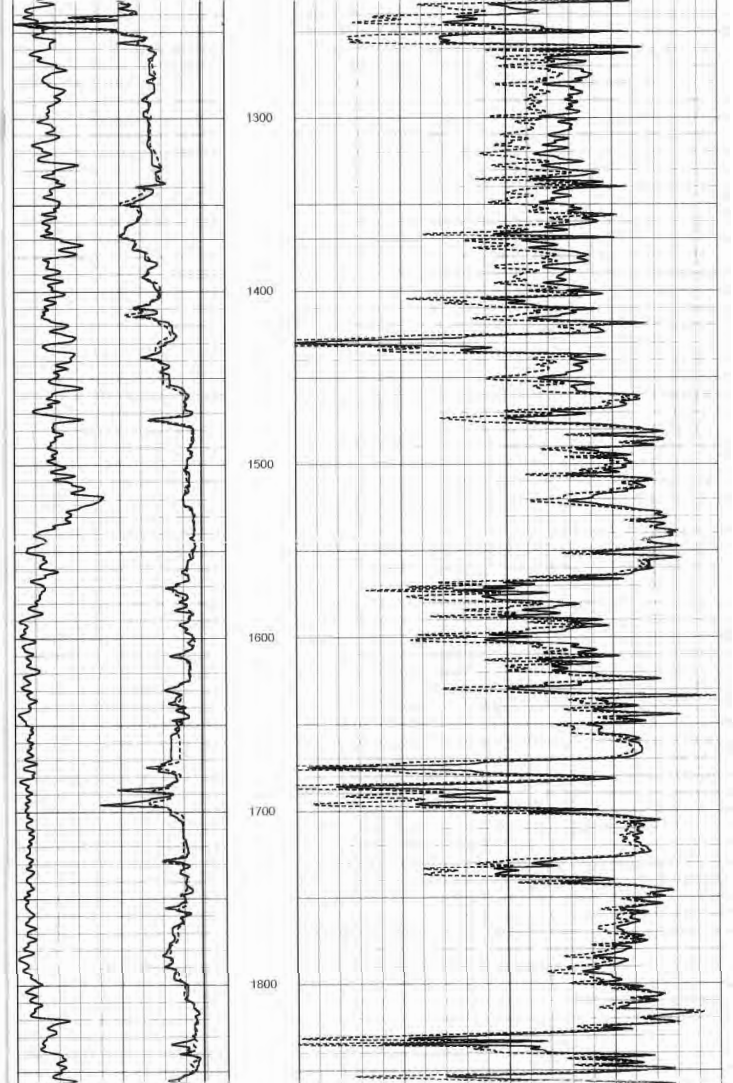


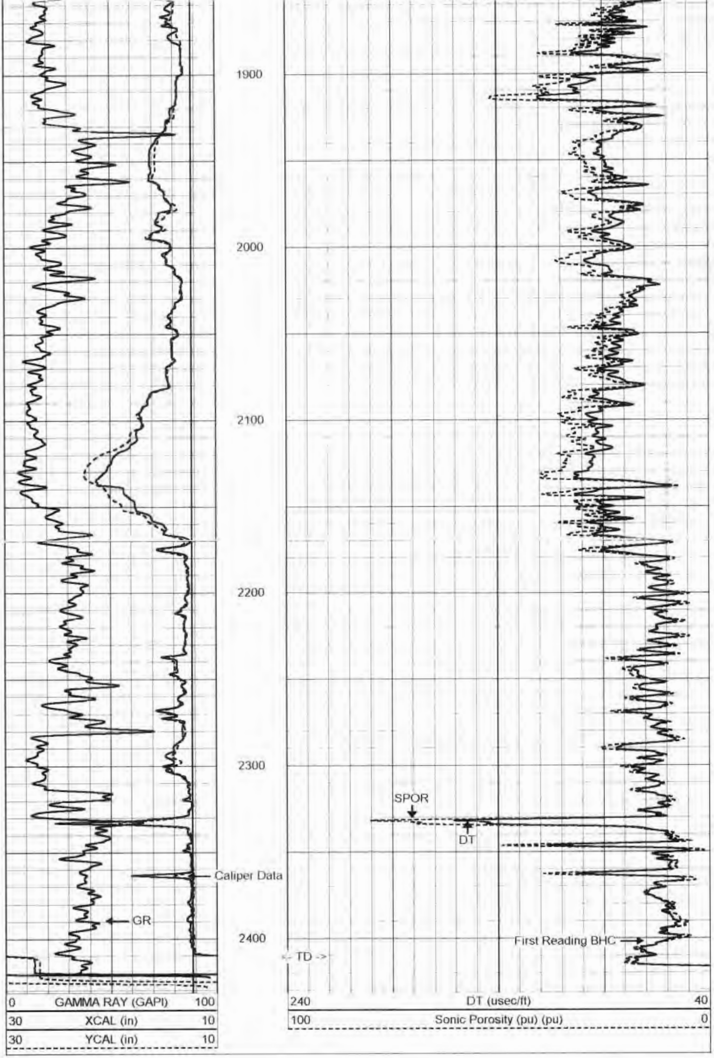
MV Geophysical

MAIN PASS

Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: dtxy1030.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:600



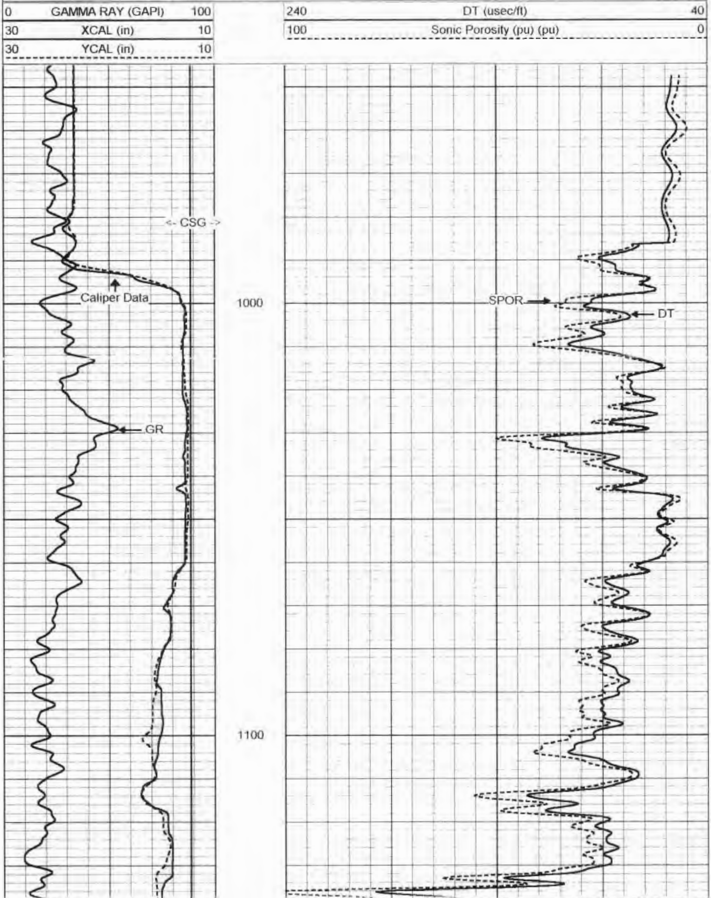


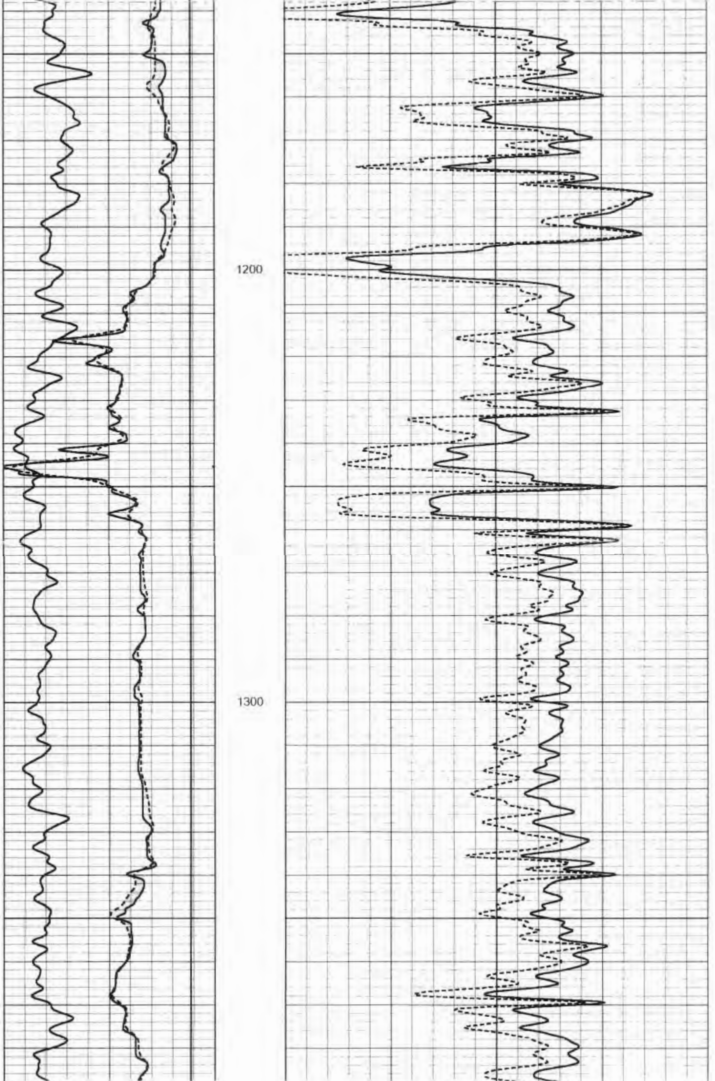


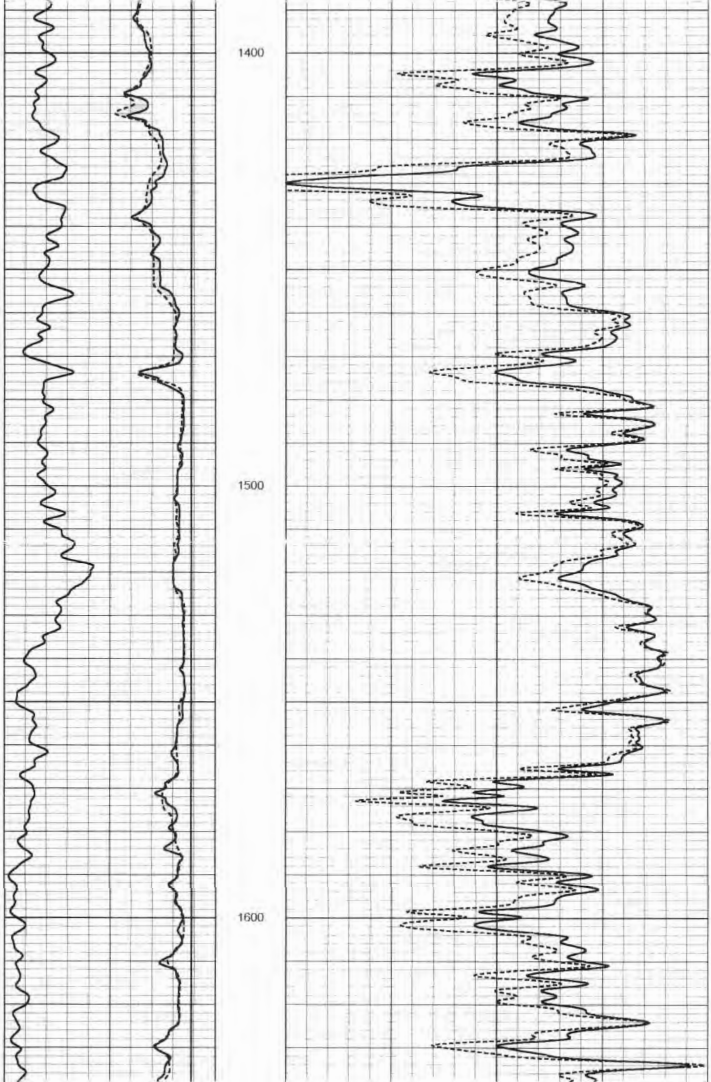
MV
Geophysical

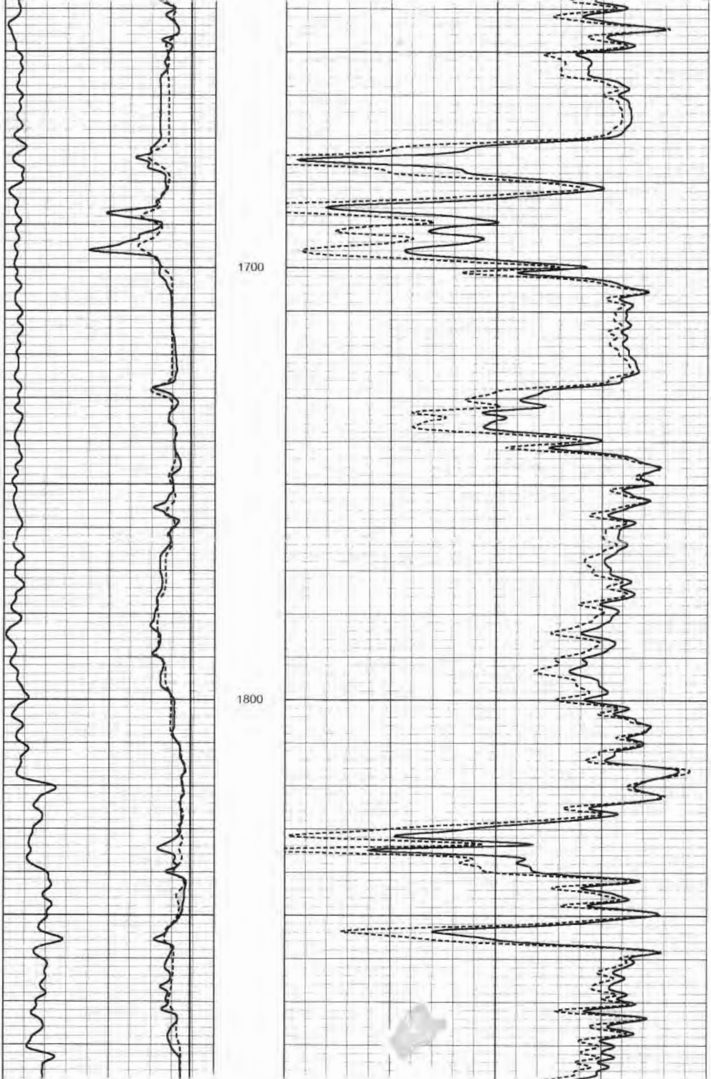
MAIN PASS

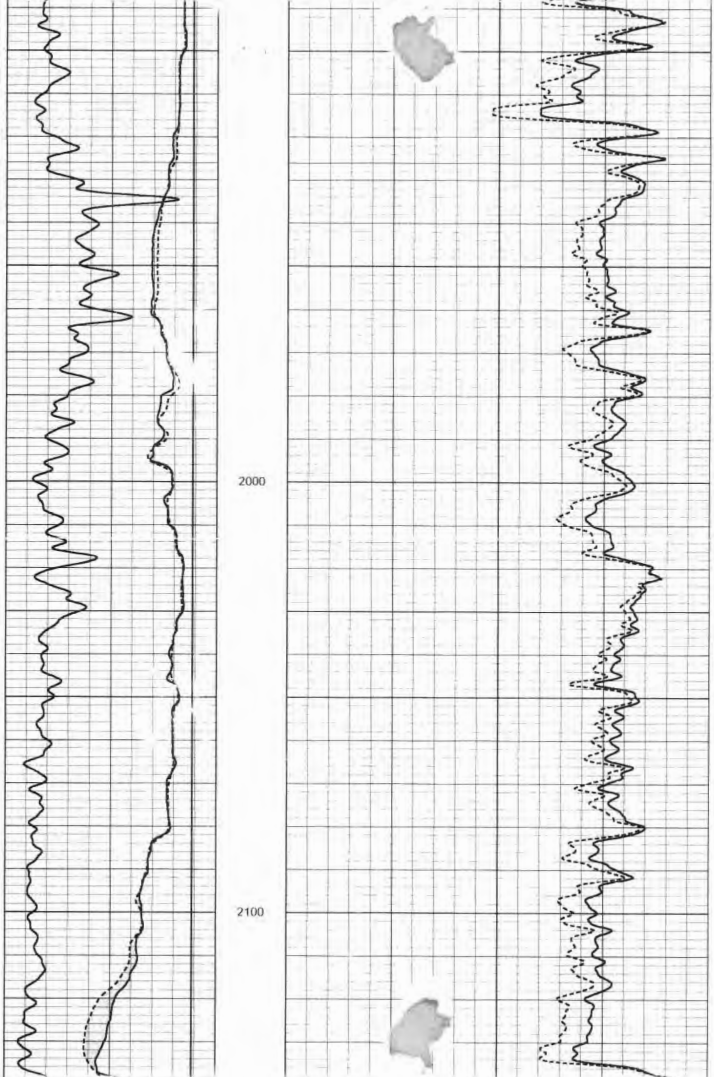
Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: dtxy1030.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:240

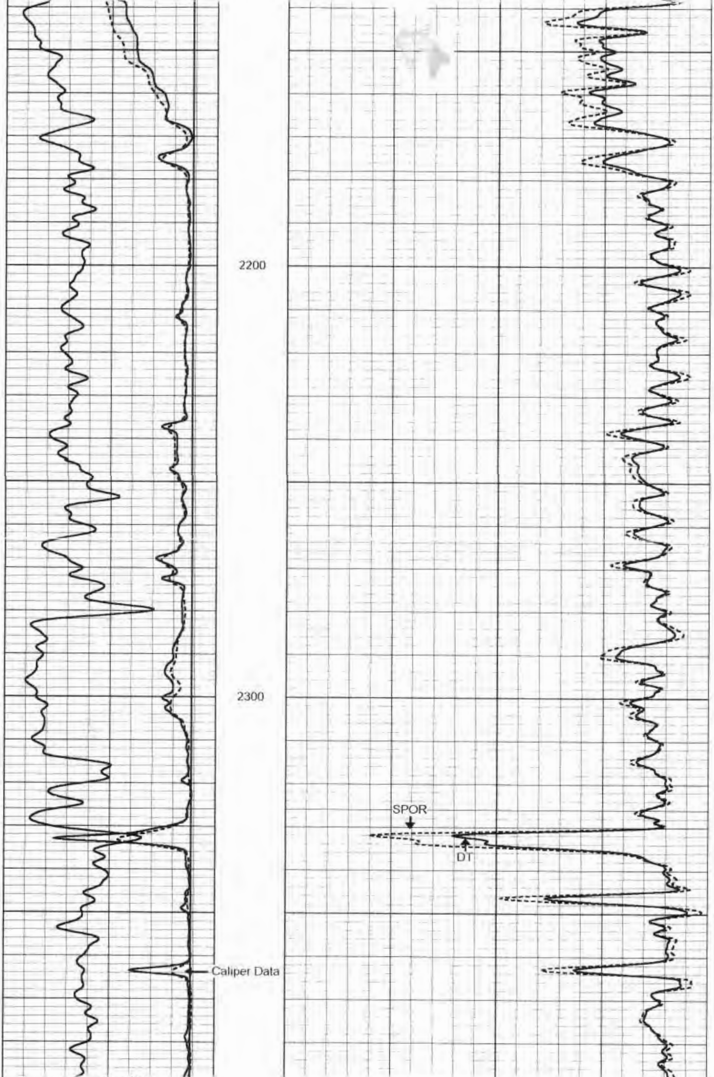


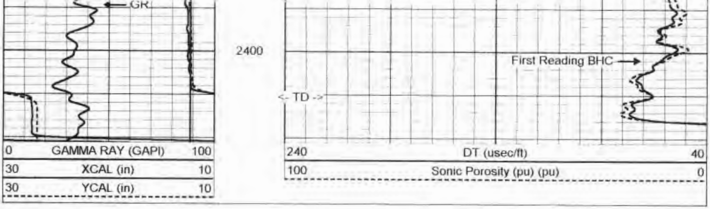








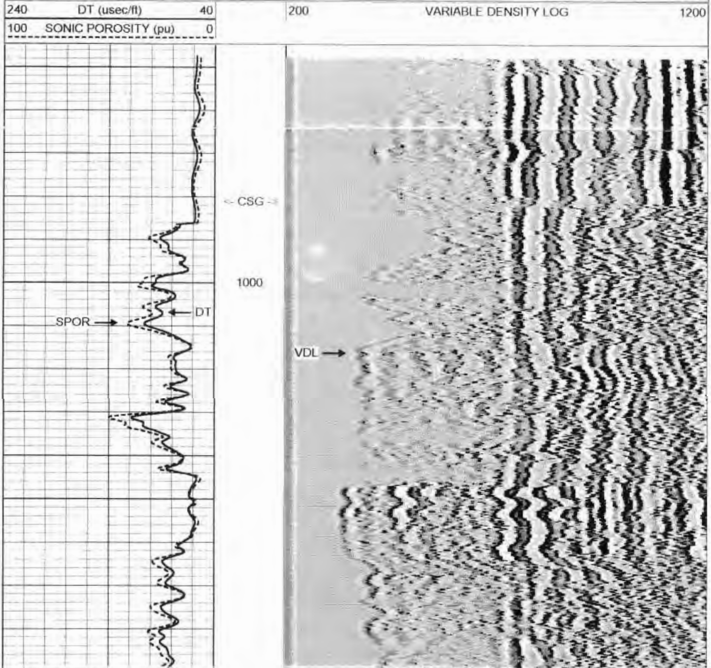


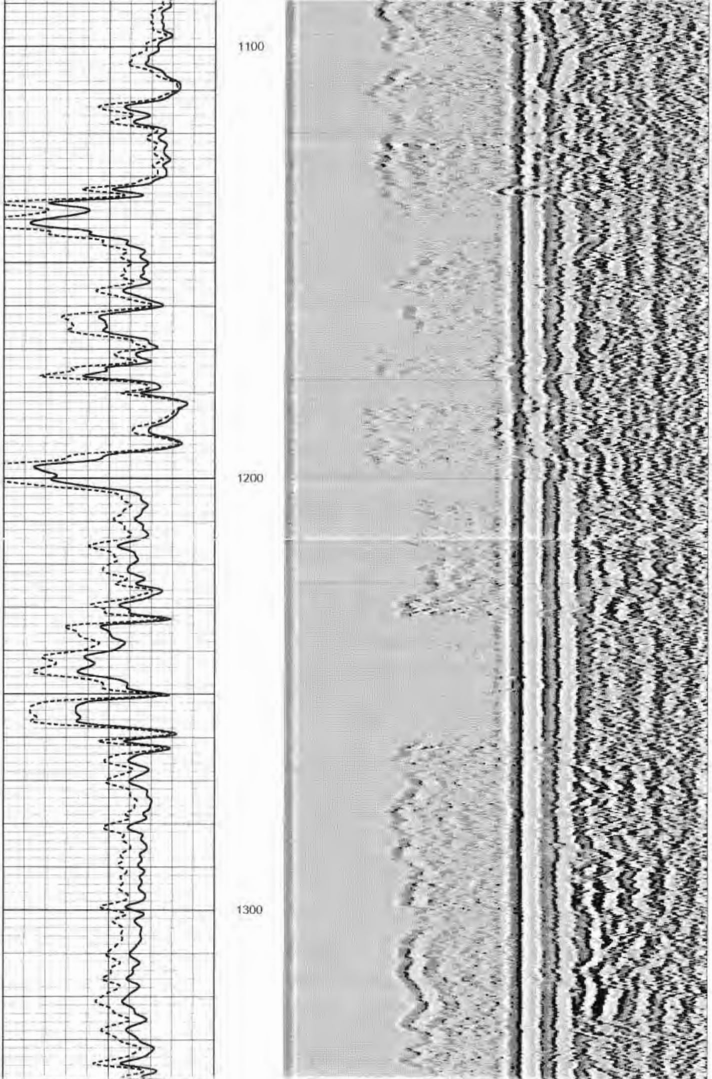


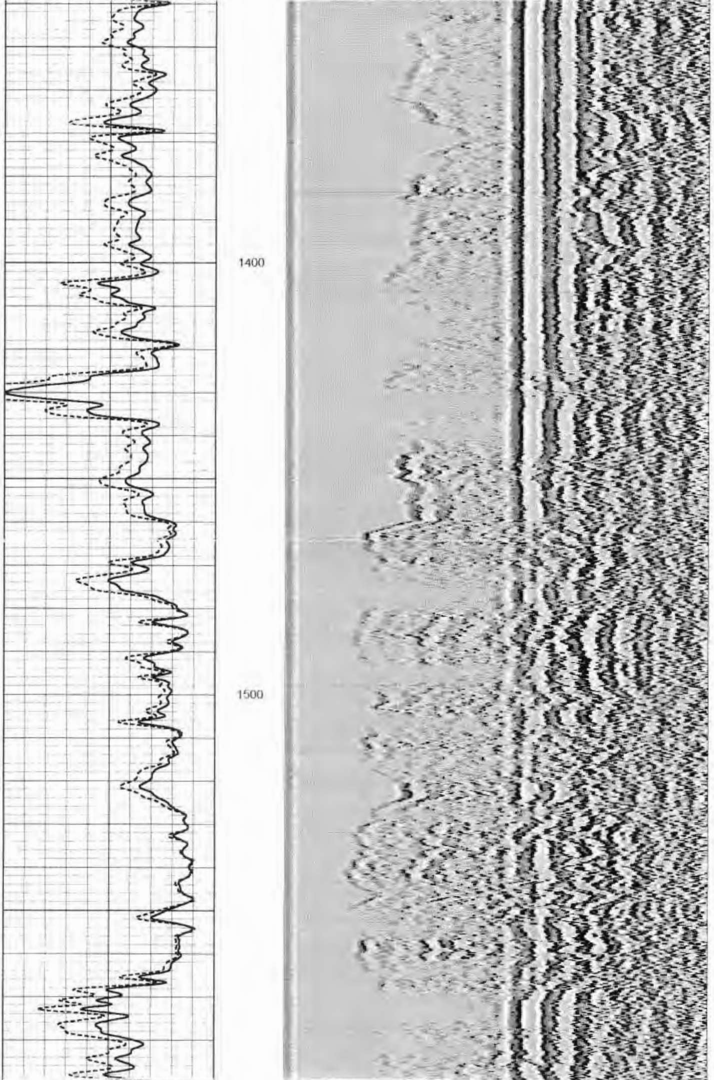
MV Geophysical

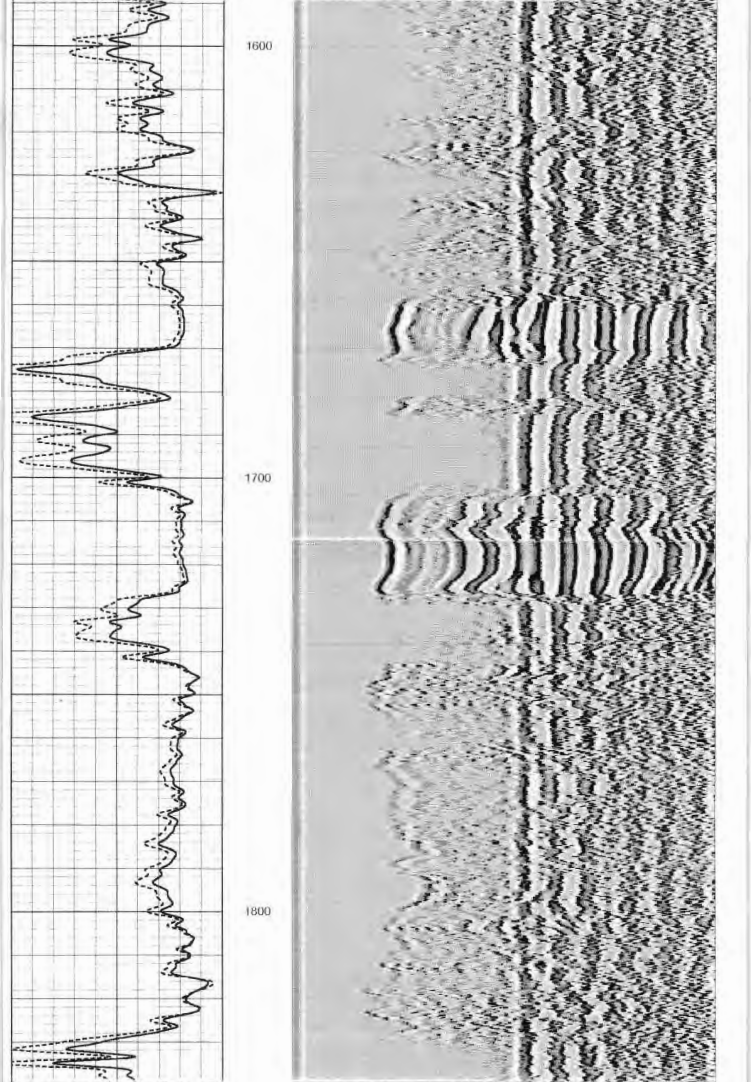
MAIN PASS

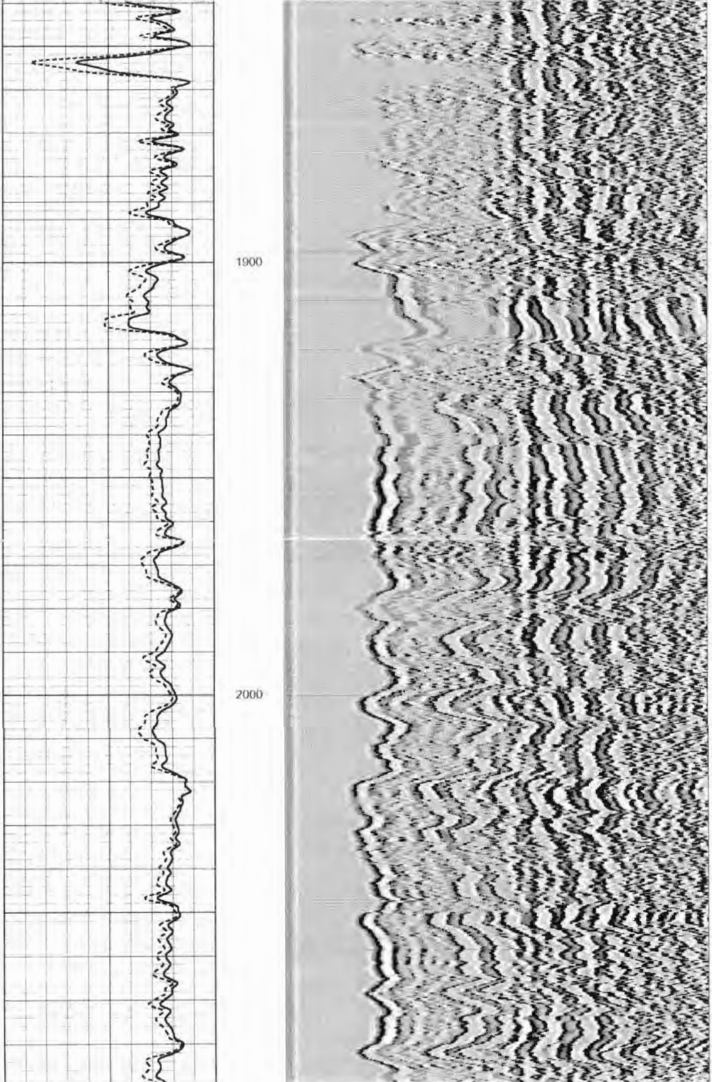
Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: son_vdl.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:240

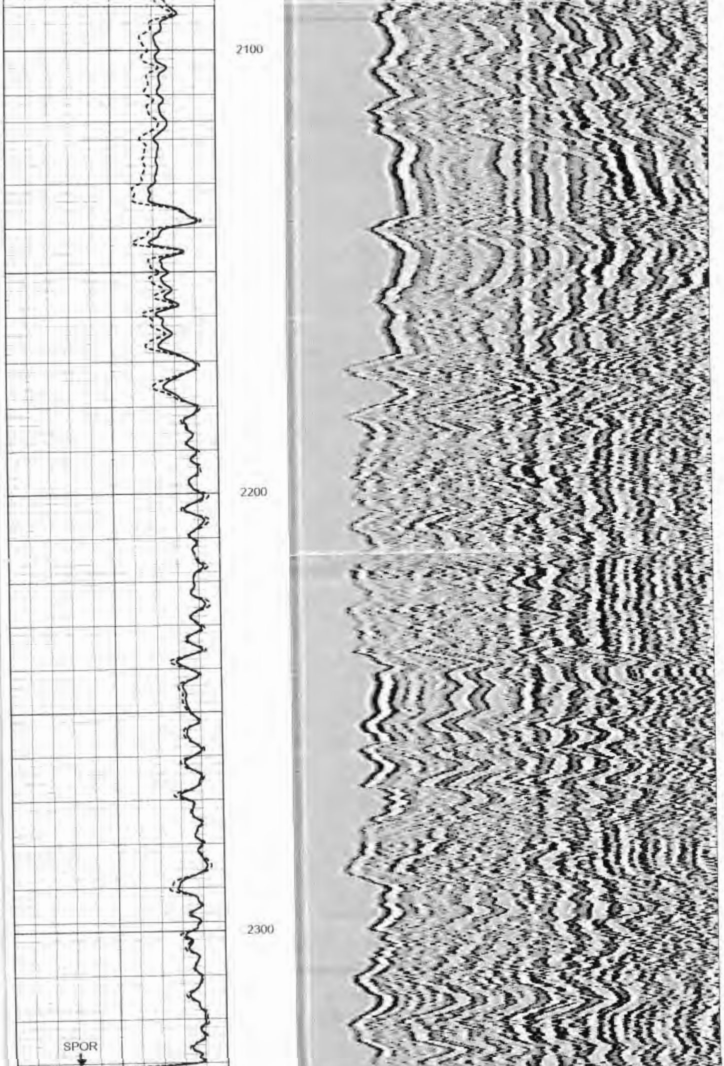


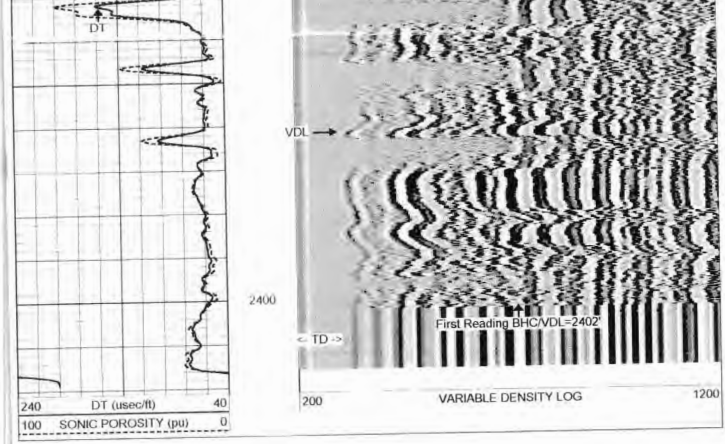








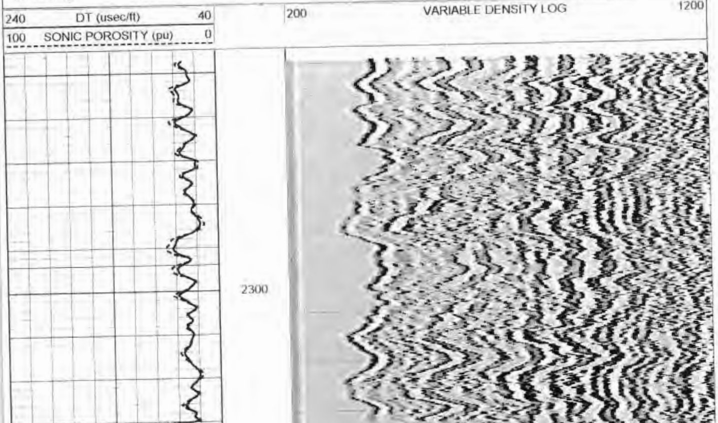


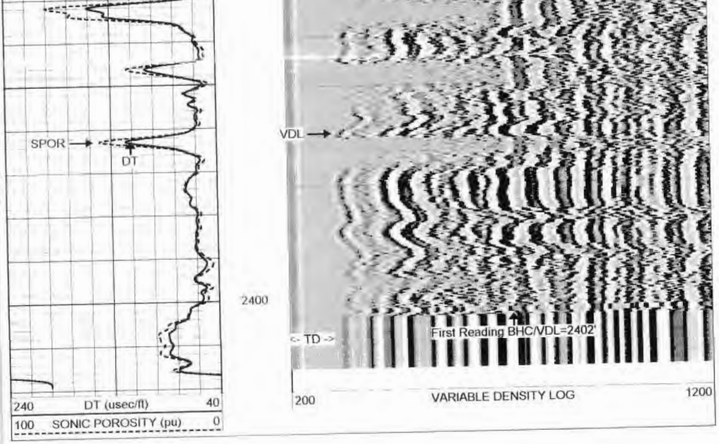


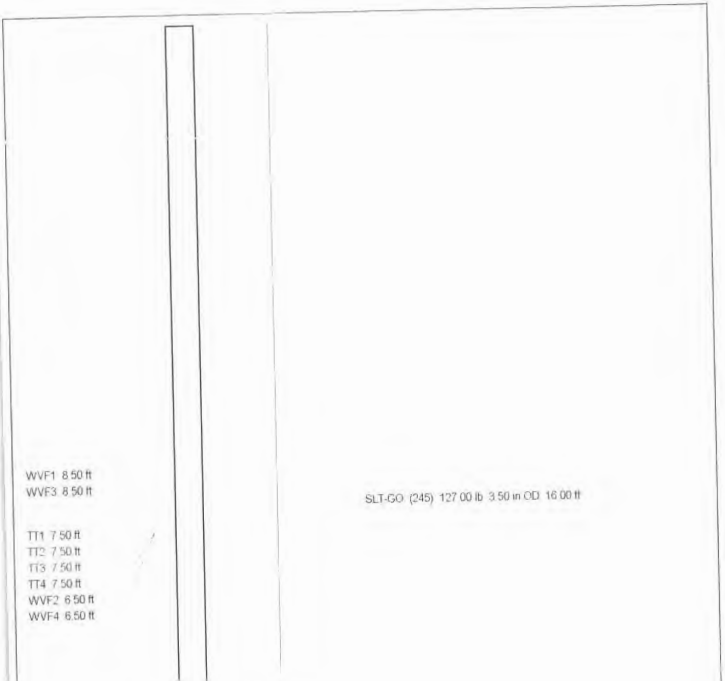
MV Geophysical

REPEAT SECTION

Database File:	rdoscdcw.db
Dataset Pathname:	run2/REPEAT
Presentation Format:	son_vdl.prs
Dataset Creation:	Wed Mar 11 10:40:08 2009
Charted by:	Depth in Feet scaled 1:240







Dataset	run2/pass12
Total Length	16.00 ft
Total Weight	127.00 lb
O.D.	3.50 in

MV Geophysical

X-Y CALIPER
GAMMA RAY
LOG

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk
State/Prv Florida

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk State/Prv . Florida

Location
E. of Frostproof on CR-630
Polk County Utilities
PBS&J

Other Services
XY/GR,DIL
BHC,FLO
FCT,DHTV

Permanent Datum	G.L	Elevation	Elevation
Log Measured From	G.L		K.B
Drilling Measured From	G.L		D.F
			G.L

Date	11-FEB-2009		
Run Number	ONE		
Depth Driller	2417'		
Depth Logger	2410'		
Bottom Logged Interval	2410'		
Top Log Interval	SURFACE		
Open Hole Size	12.25"		
Type Fluid	H2O		
Density / Viscosity	NA/NA		
Max. Recorded Temp.	NA		
Estimated Cement Top	NA		
Time Well Ready	07:30 3/11/2009		
Time Logger on Bottom	09:15 3/11/2009		
Equipment Number	MVGS-1		
Location	Ft. Myers		
Recorded By	S Miller/C.Miller		T Toy (RWD)
Witnessed By	K Dorsey (PBSJ)	M Regan (PBSJ)	W Nash (RWD)

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	981'	2417'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	24"	0.375" WT	SURFACE	981'
Prot. String				
Production String				
Liner				rdcsedew.db
Invoice No. 2009030		P.O. #	Job No.	* FIELD PRINT *

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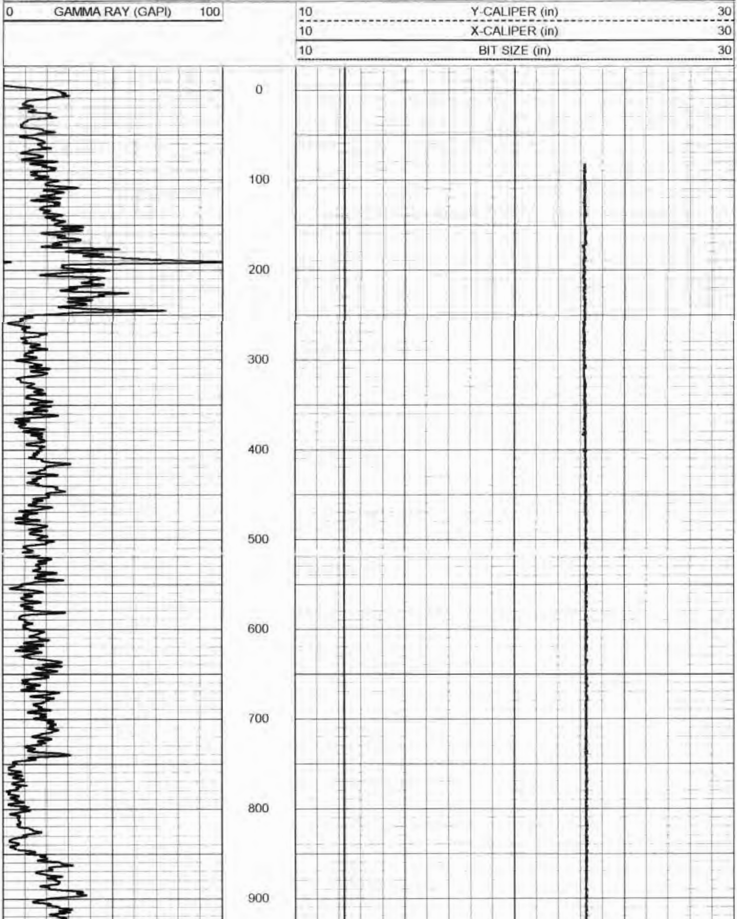
Comments

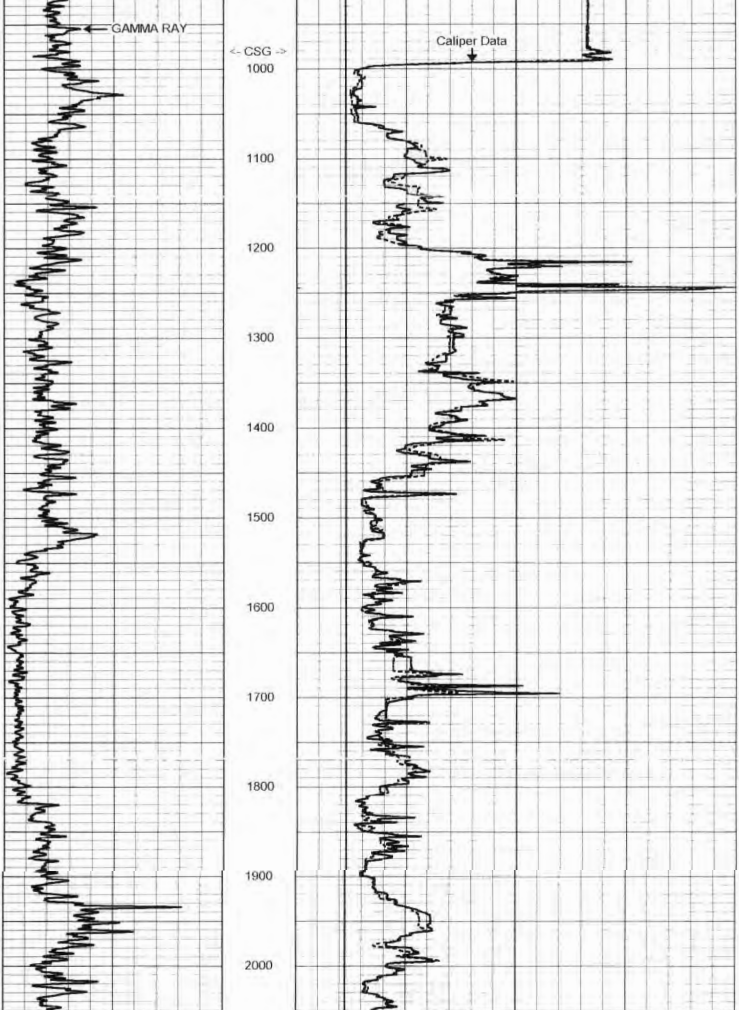
X-Y Caliper Arm Extensions: 33"

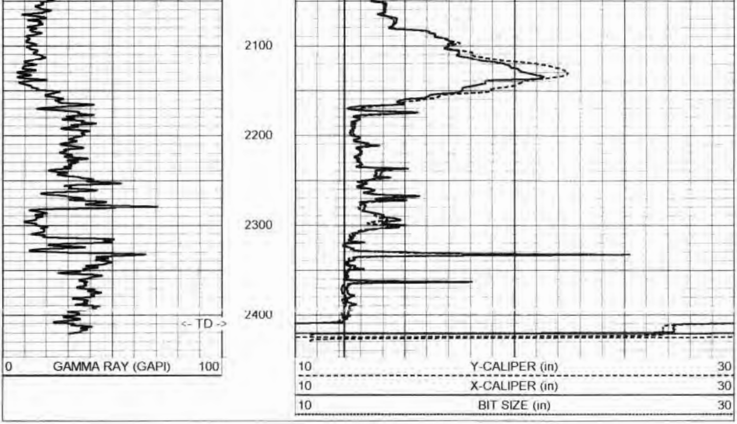
MV
Geophysical

MAIN PASS

Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: xy1030-1.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:1200



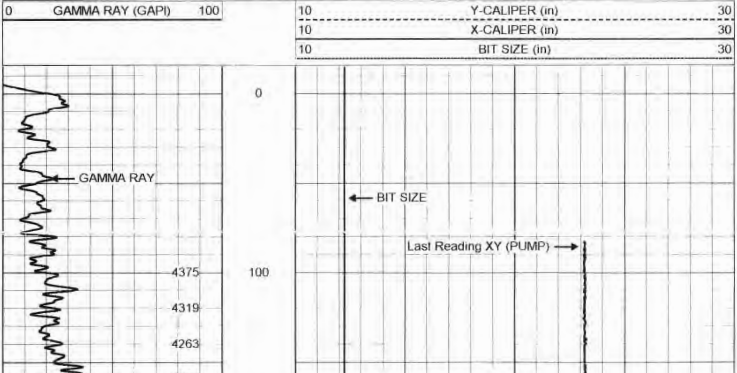


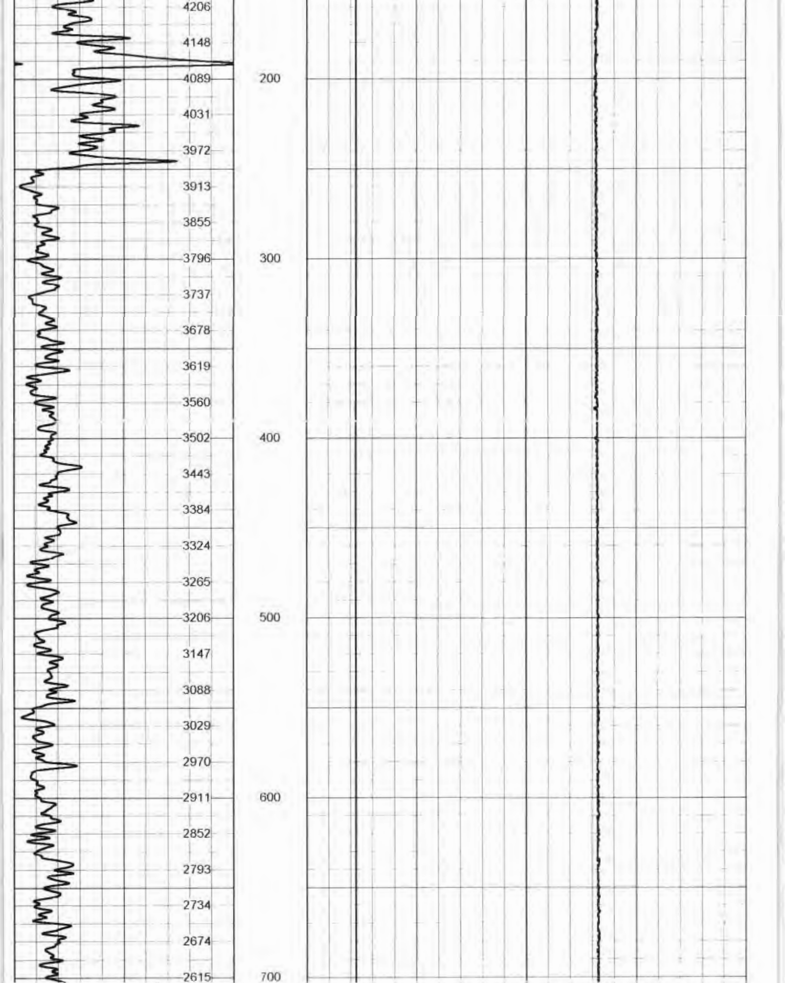


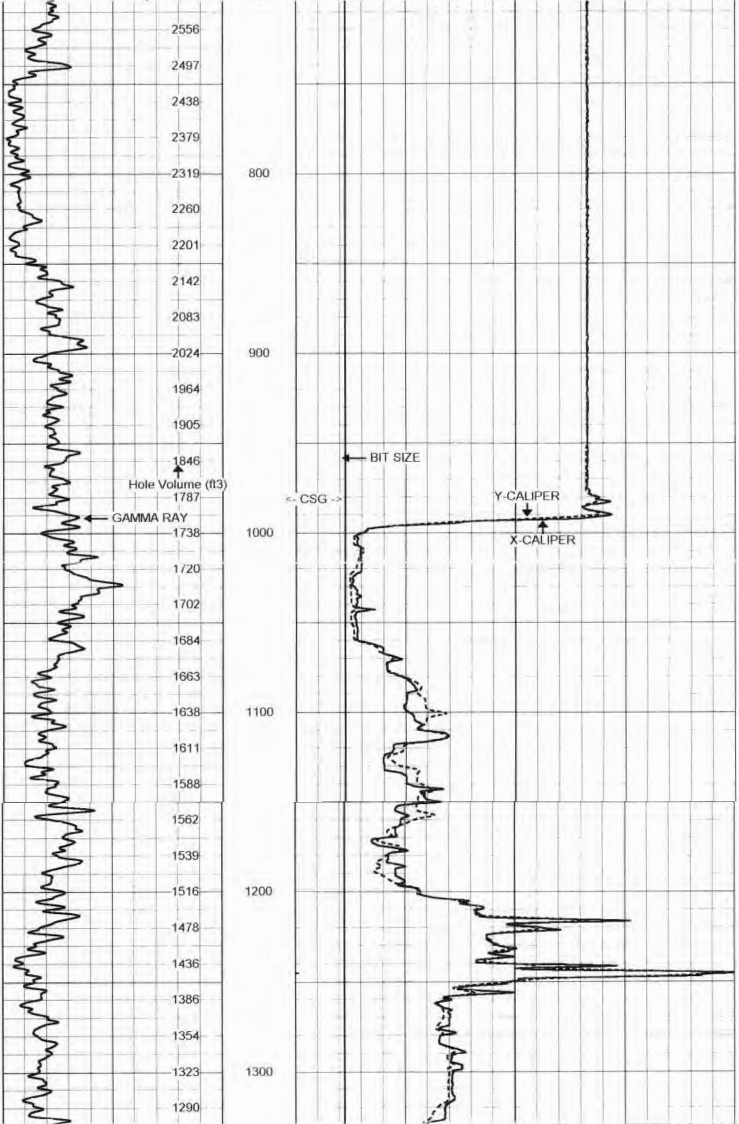
MV
Geophysical

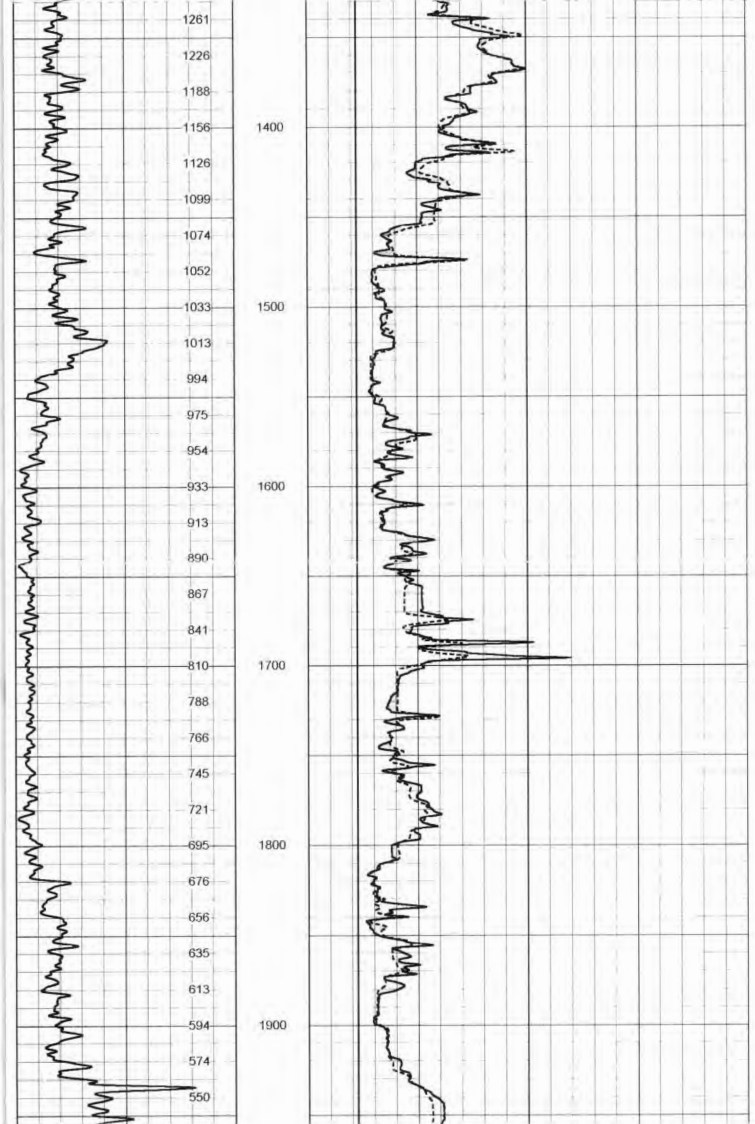
MAIN PASS

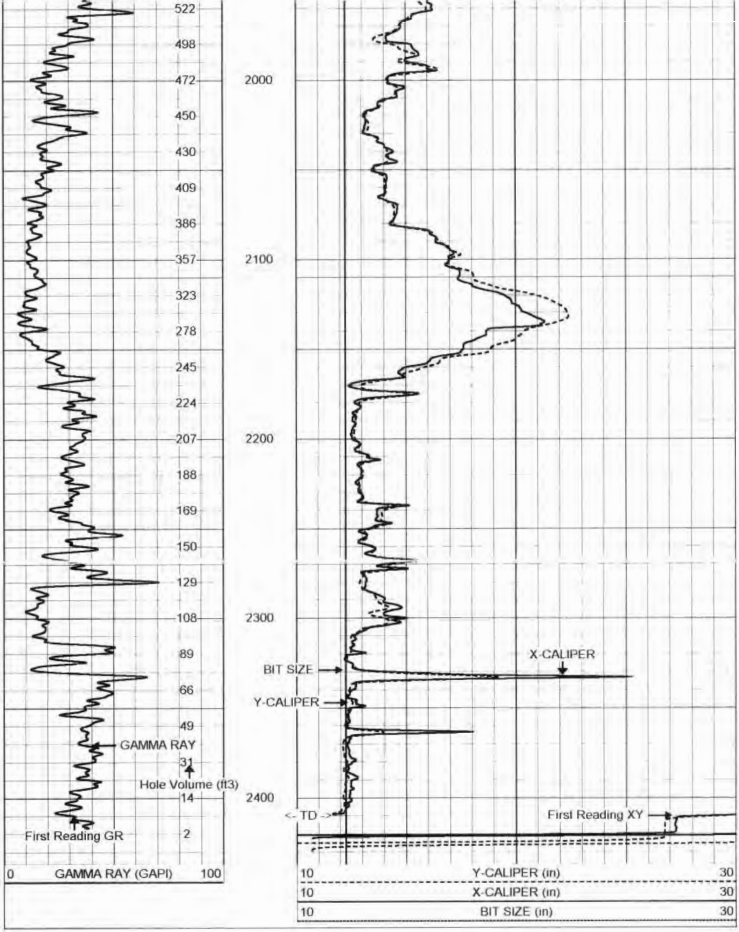
Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: xy1030-5.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:600







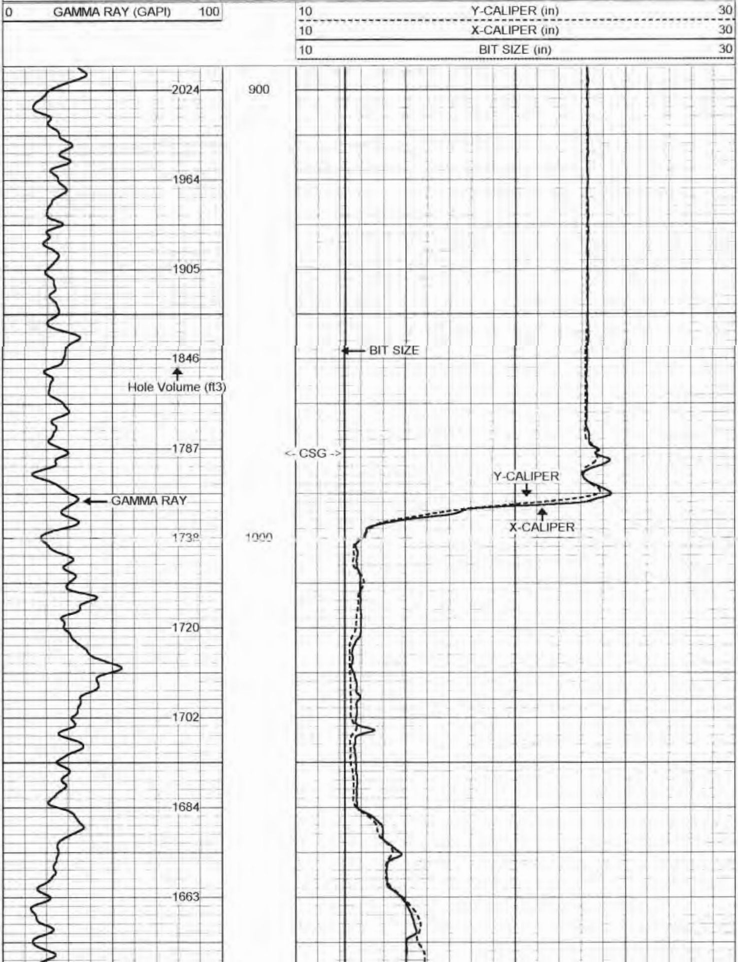


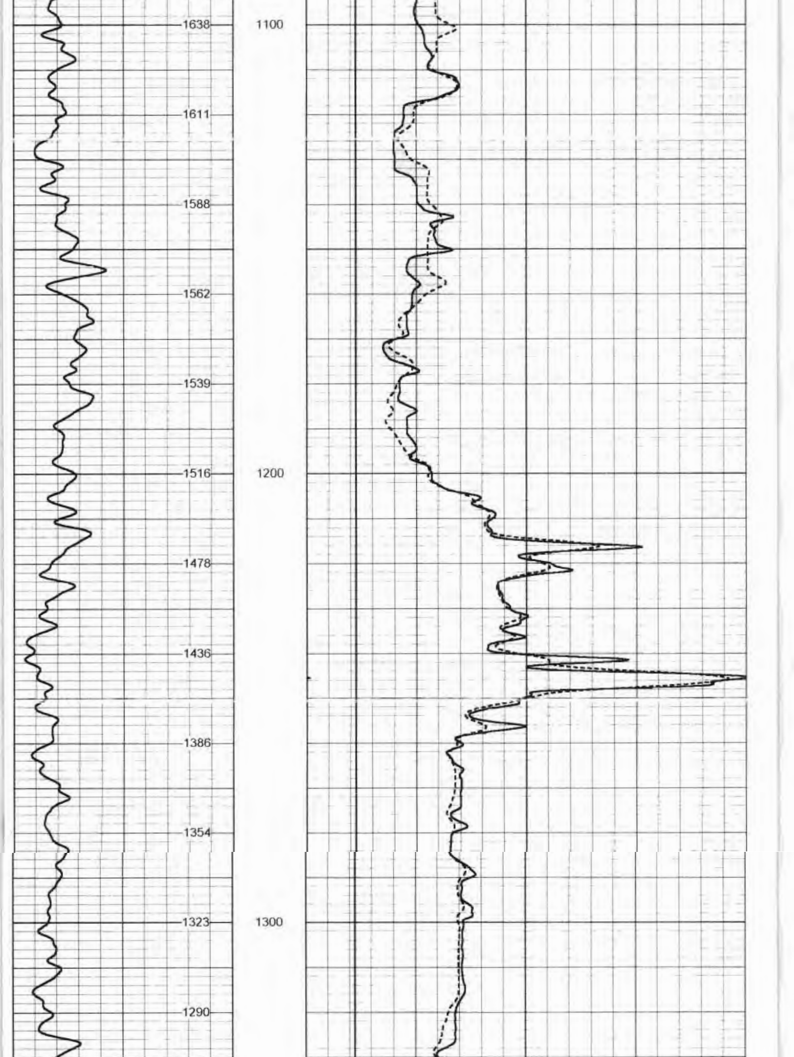


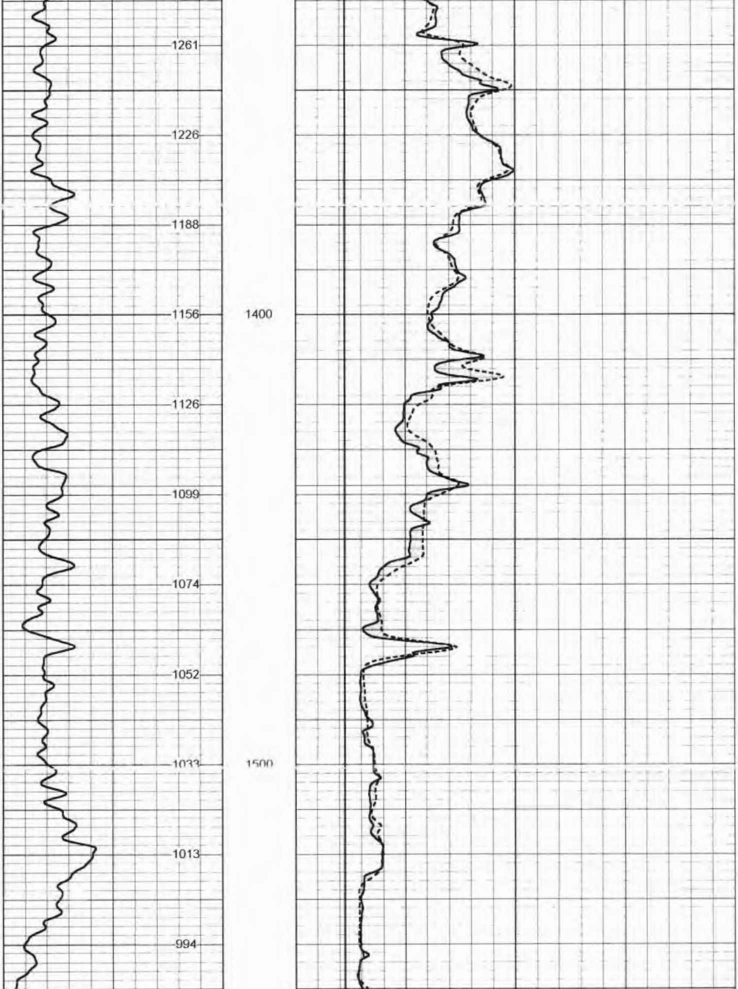
MV
Geophysical

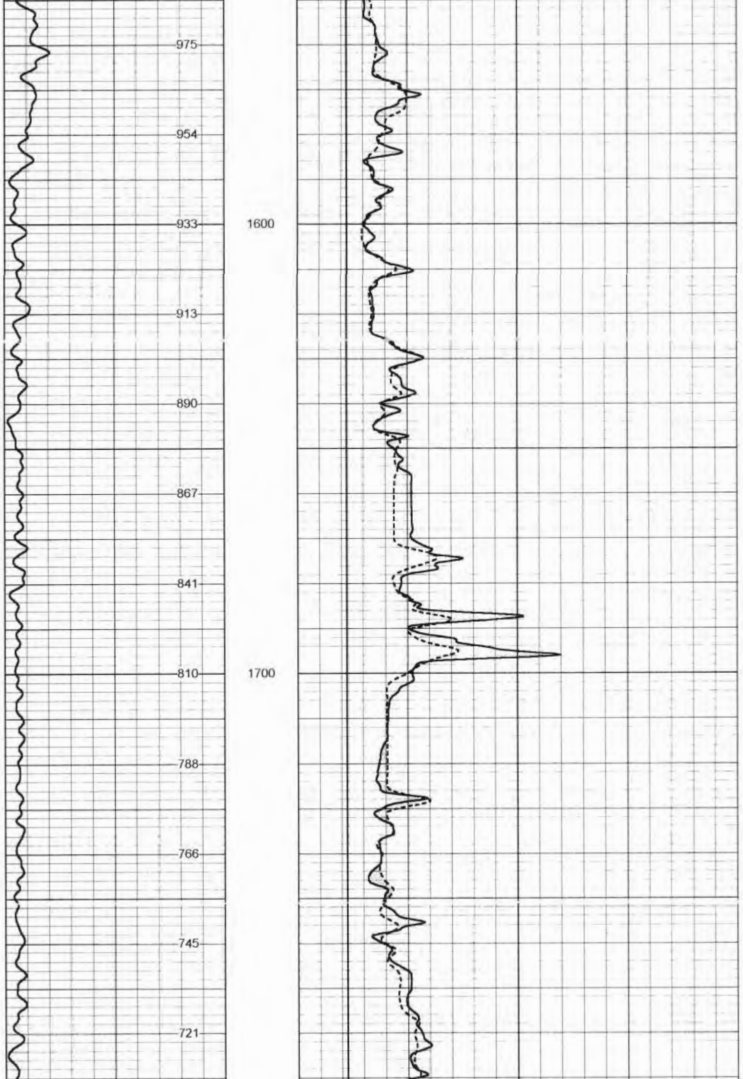
MAIN PASS

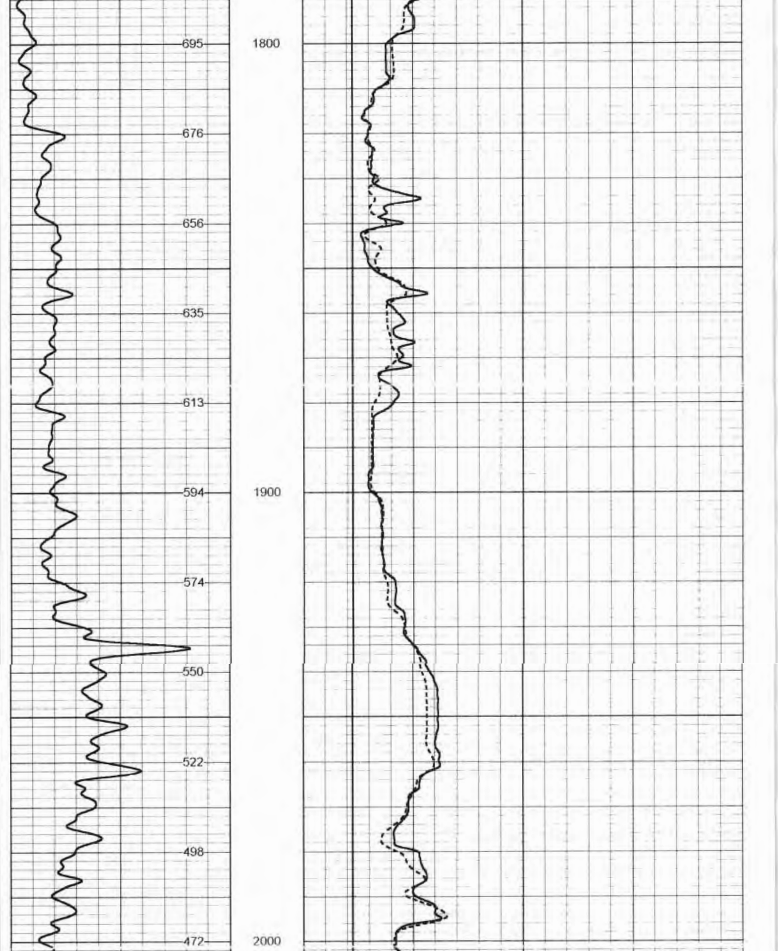
Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: xy1030-5.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:240

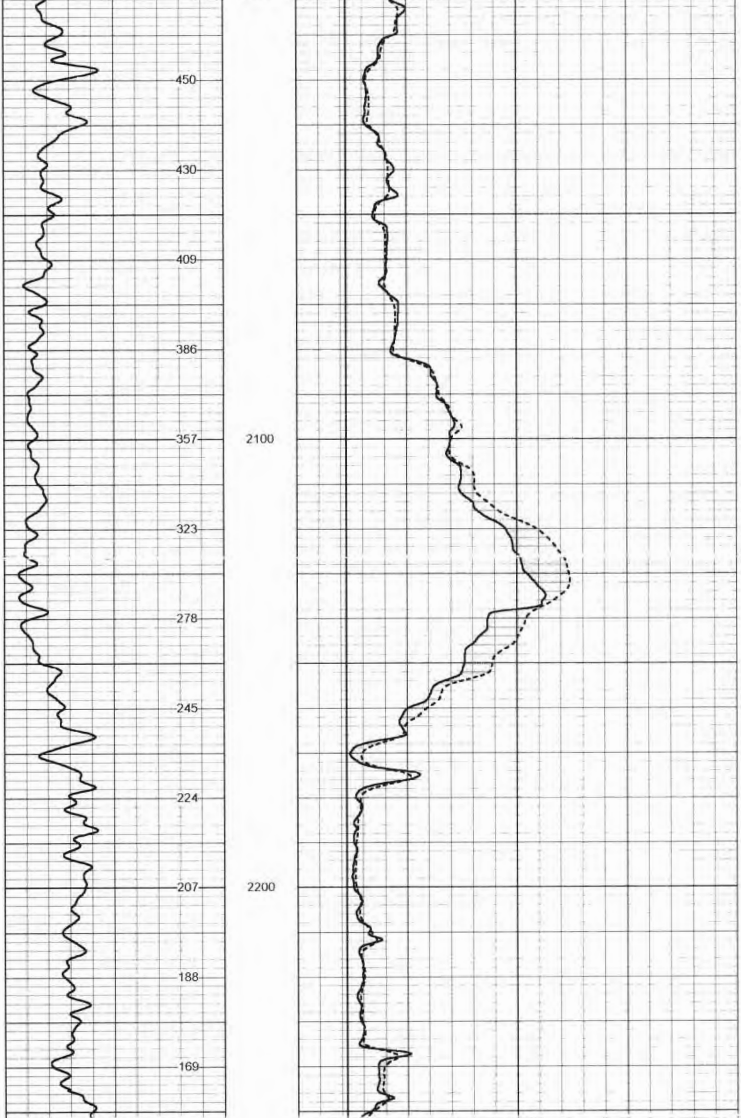


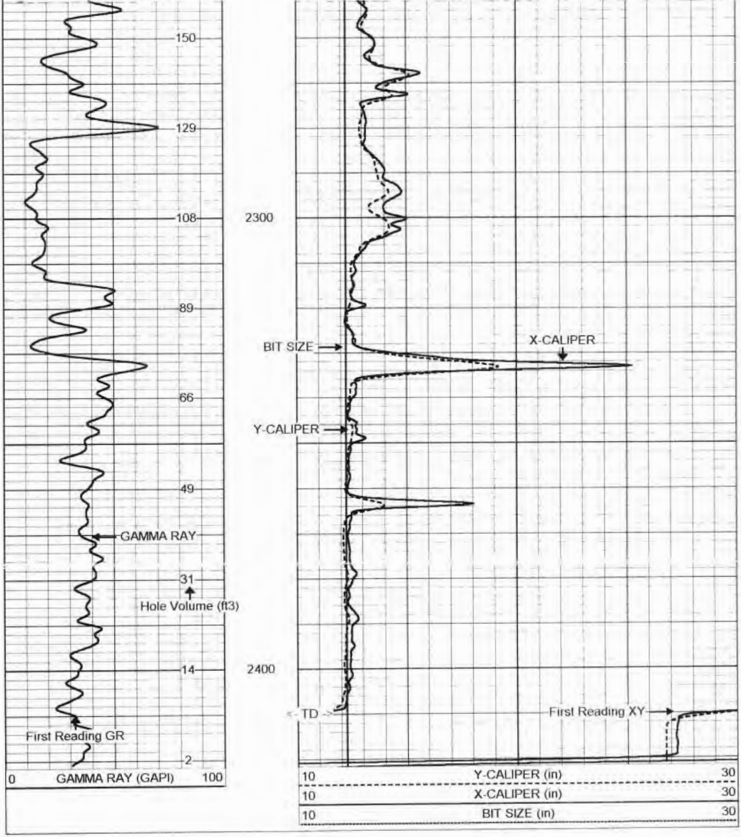












MV Geophysical

REPEAT SECTION

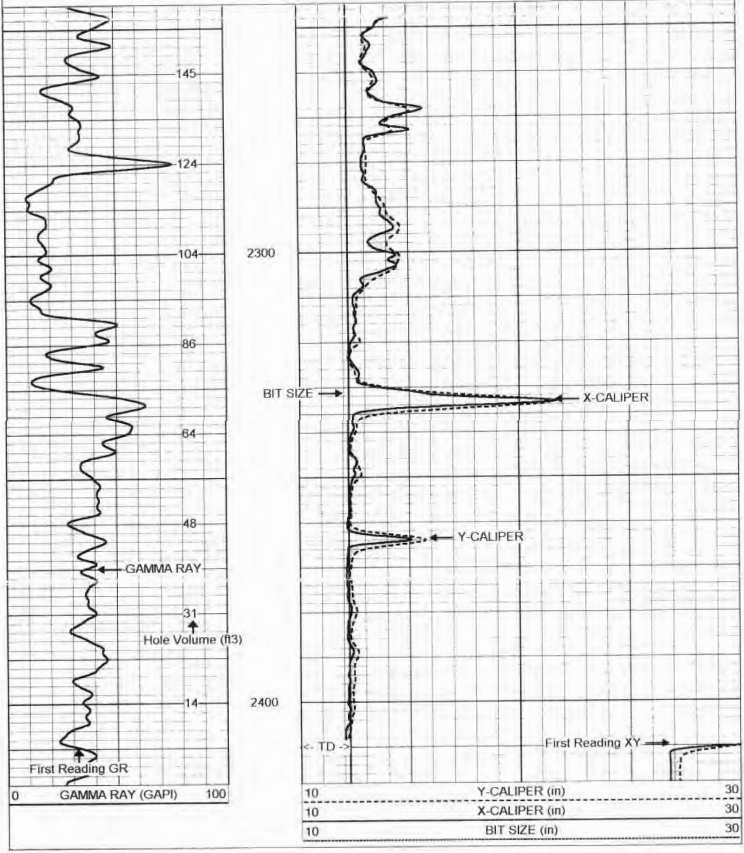
Database File:	rdcsedew.db
Dataset Pathname:	run2/REPEAT
Presentation Format:	xy1030-5.prs
Dataset Creation:	Wed Mar 11 10:40:08 2009
Charted by:	Depth in Feet scaled 1:240

0 GAMMA RAY (GAPI) 100

10 Y-CALIPER (in) 30

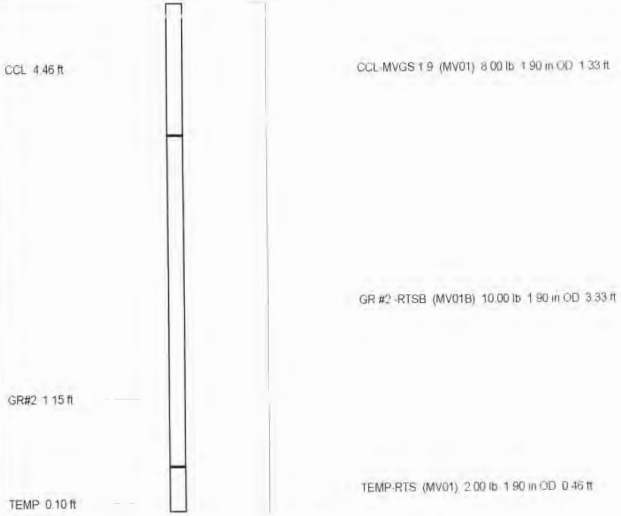
10 X-CALIPER (in) 30

10 BIT SIZE (in) 30



Gamma Ray Calibration Report

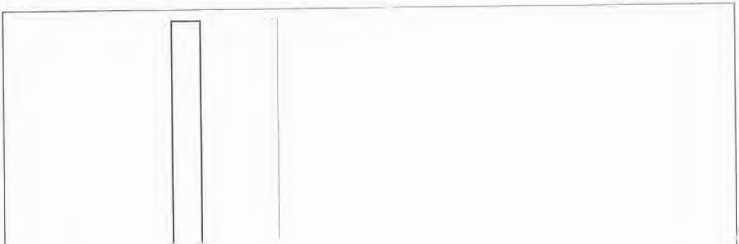
Serial Number:	MV01B	
Tool Model:	RTSB	
Performed:	Wed Mar 11 07:47:01 2009	
Calibrator Value:	120	GAPI
Background Reading:	13.8124	cps
Calibrator Reading:	97.8274	cps
Sensitivity:	1.42832	GAPI/cps

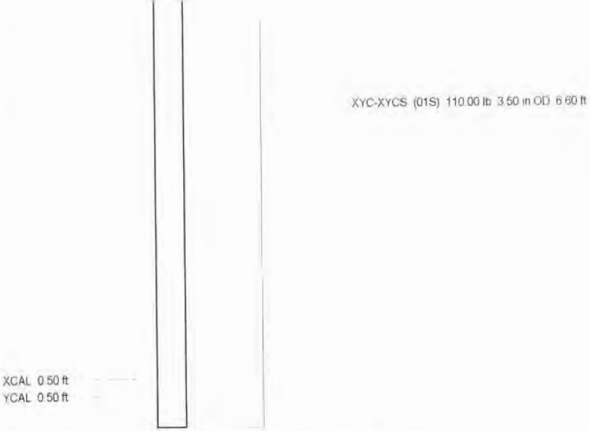

CCL 4.46 ft
CCL-MVGS 1.9 (MV01) 8.00 lb 1.90 in OD 1.33 ft
GR #2 -RTSB (MV01B) 10.00 lb 1.90 in OD 3.33 ft
GR#2 1.15 ft
TEMP-RTS (MV01) 2.00 lb 1.90 in OD 0.46 ft
TEMP 0.10 ft

Dataset	run2/pass2
Total Length	5.12 ft
Total Weight	20.00 lb
O.D	1.90 in

XY Caliper Calibration Report

Serial Number:	01S		
Tool Model:	XYCS		
Performed:	Wed Mar 11 10:17:12 2009		
Small Ring:	12.25	in	
Large Ring:	23.25	in	
	X Caliper	Y Caliper	
Reading with Small Ring:	1344.1	1344.3	cps
Reading with Large Ring:	1699.9	1700.1	cps
Gain:	0.0309162	0.0309163	
Offset:	-29.3045	-29.3107	





Dataset	run2/pass6
Total Length	6.60 ft
Total Weight	110.00 lb
O.D.	3.50 in

MV Geophysical

DUAL INDUCTION
LL3 / SP
LOG

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk
State/Prv Florida

Company	Rowe Well Drilling Co.		
Well	SE-DEW-1		
Field	Frostproof		
County	Polk	State/Prv .	Florida

Location: E. of Frostproof on CR-630
Polk County Utilities
PBS&J

Other Services: XY/GR,DIL
BHC,FLO
FCT,DHTV

Permanent Datum	G.L	Elevation		Elevation
Log Measured From	G.L		K.B.	
Drilling Measured From	G.L		D.F	
			G.L	

Date	11-FEB-2009		
Run Number	TWO		
Depth Driller	2417'		
Depth Logger	2410'		
Bottom Logged Interval	2408'		
Top Log Interval	981'		
Open Hole Size	12.25"		
Type Fluid	H2O		
Density / Viscosity	NA/NA		
Max. Recorded Temp	See FCT log		
Estimated Cement Top	NA		
Time Well Ready	07:30 3/11/2009		
Time Logger on Bottom	11:45 3/11/2009		
Equipment Number	MVGS-1		
Location	Ft. Myers		
Recorded By	S Miller/C Miller		T Toy (RWD)
Witnessed By	K Dorsey (PBSJ)	M Regan (PBSJ)	W Nash (RWD)

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	981'	2417'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	24"	0.375" WT	SURFACE	981'
Prot. String				
Production String				
Liner				rdcsedew.db
Invoice No. 2009030		P.O. #:	Job No.:	* FIELD PRINT *

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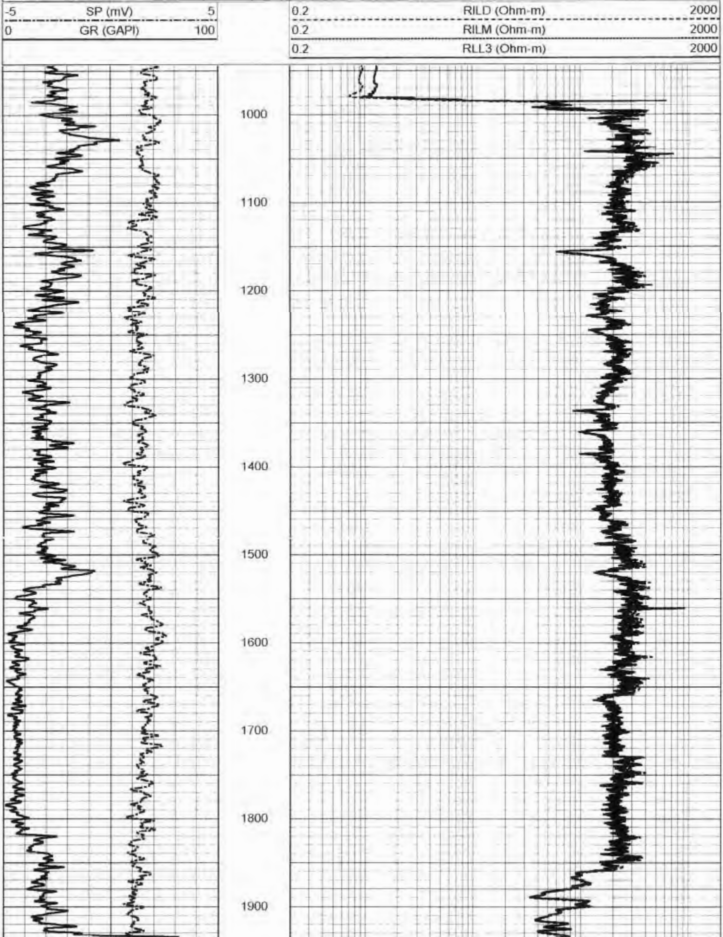
Comments

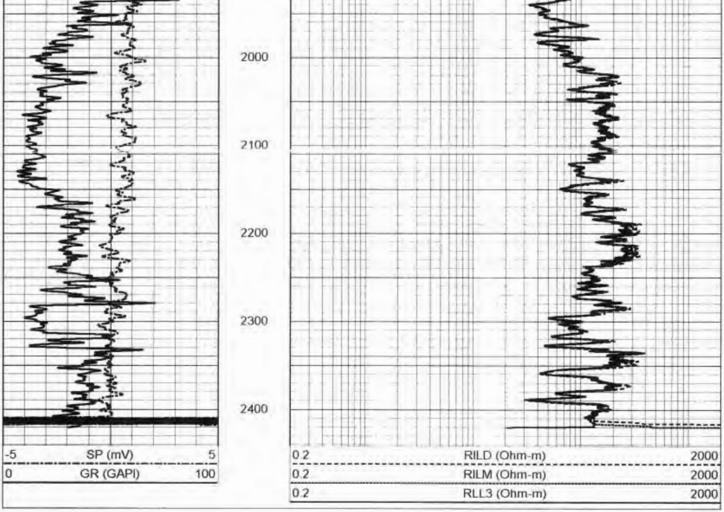
Rw=ohm-m @ degF

MV Geophysical

MAIN PASS

Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: dil-1.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:1200

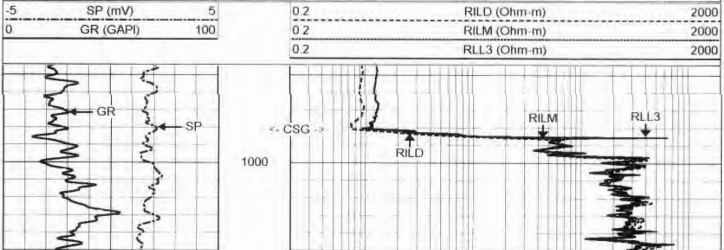


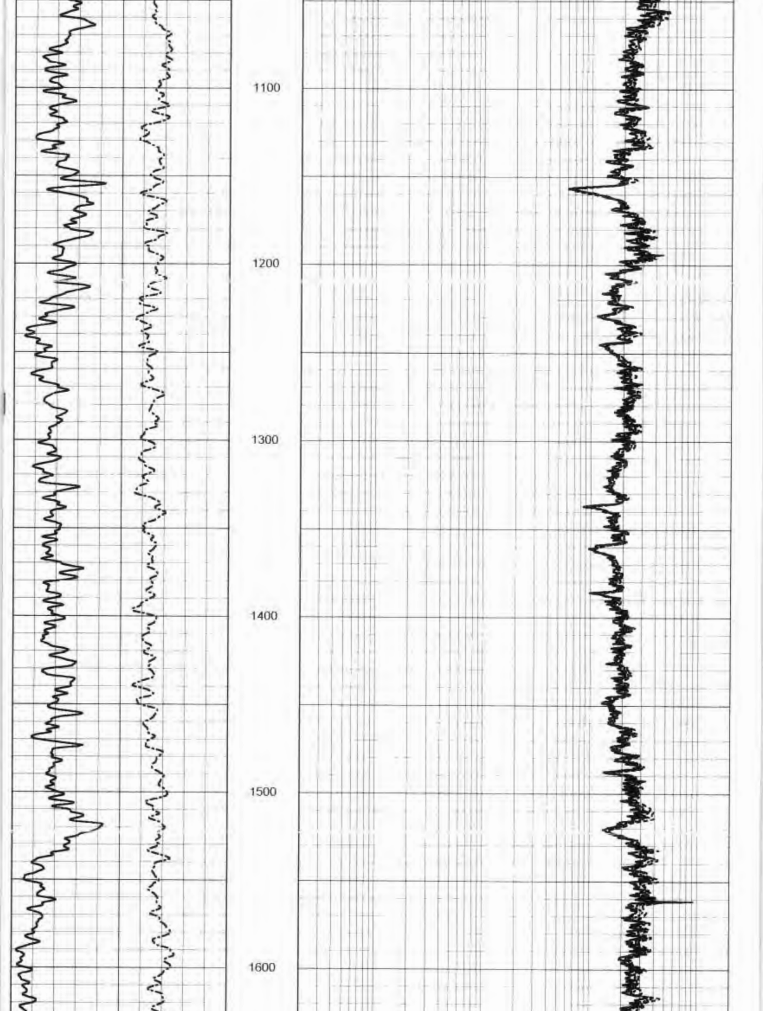


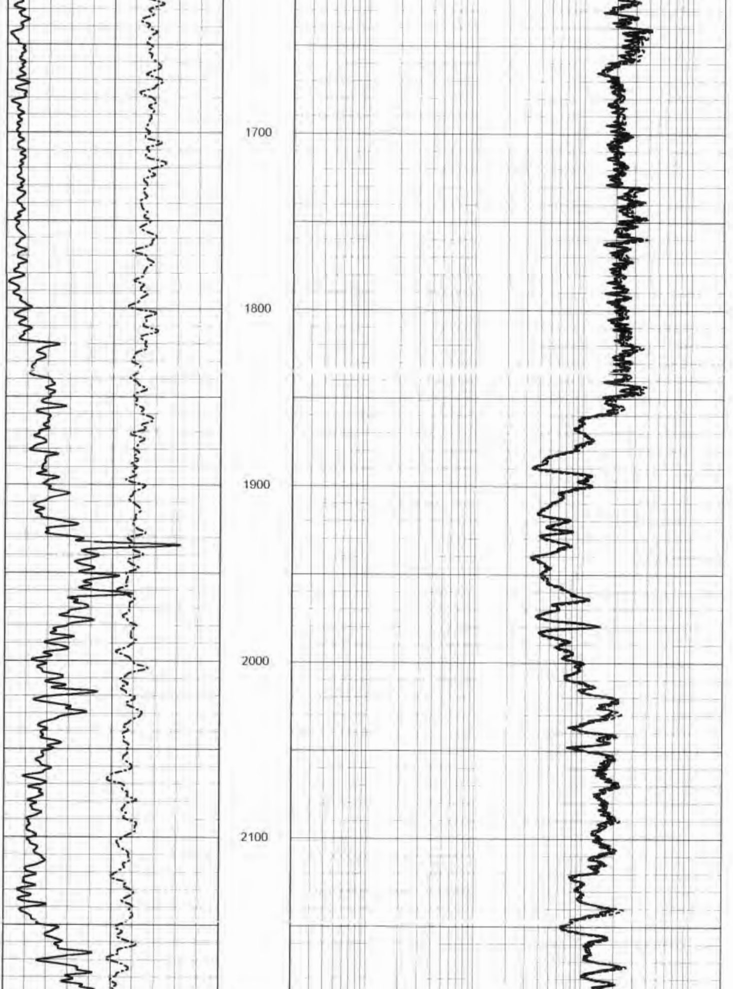
MV Geophysical

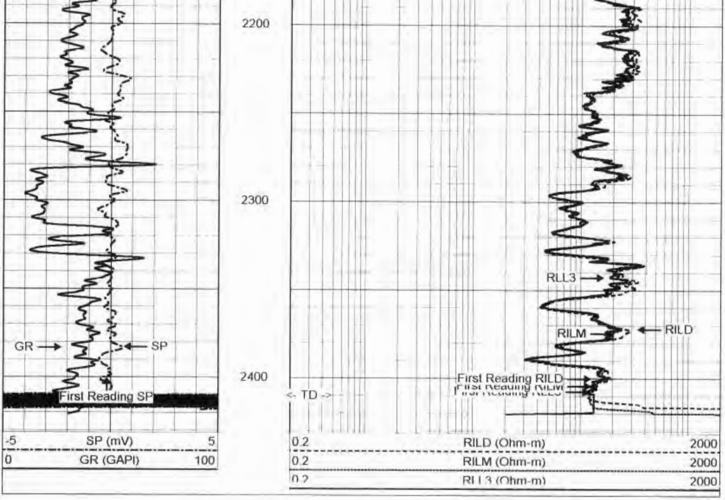
MAIN PASS

Database File: rdcsedew.db
Dataset Pathname: run2/MAIN
Presentation Format: dil-5.prs
Dataset Creation: Wed Mar 11 11:41:16 2009
Charted by: Depth in Feet scaled 1:600





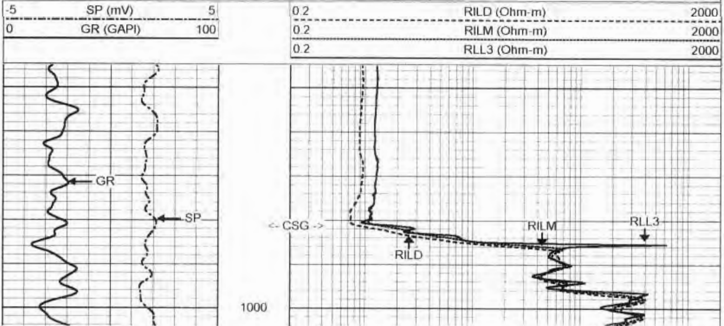


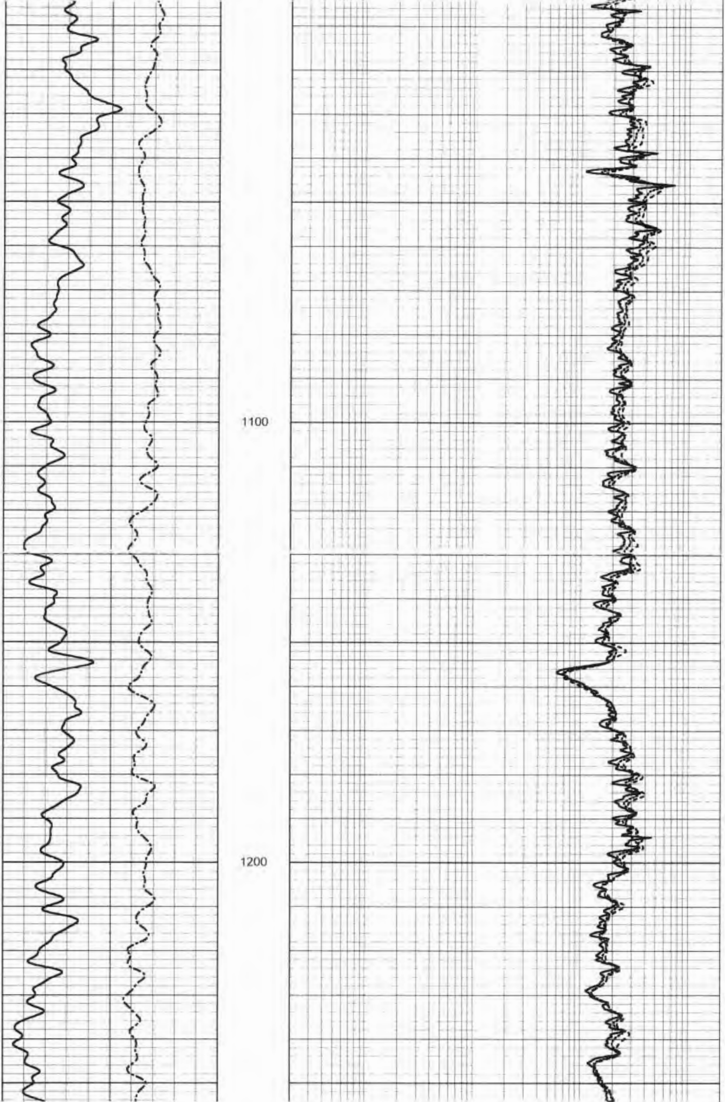


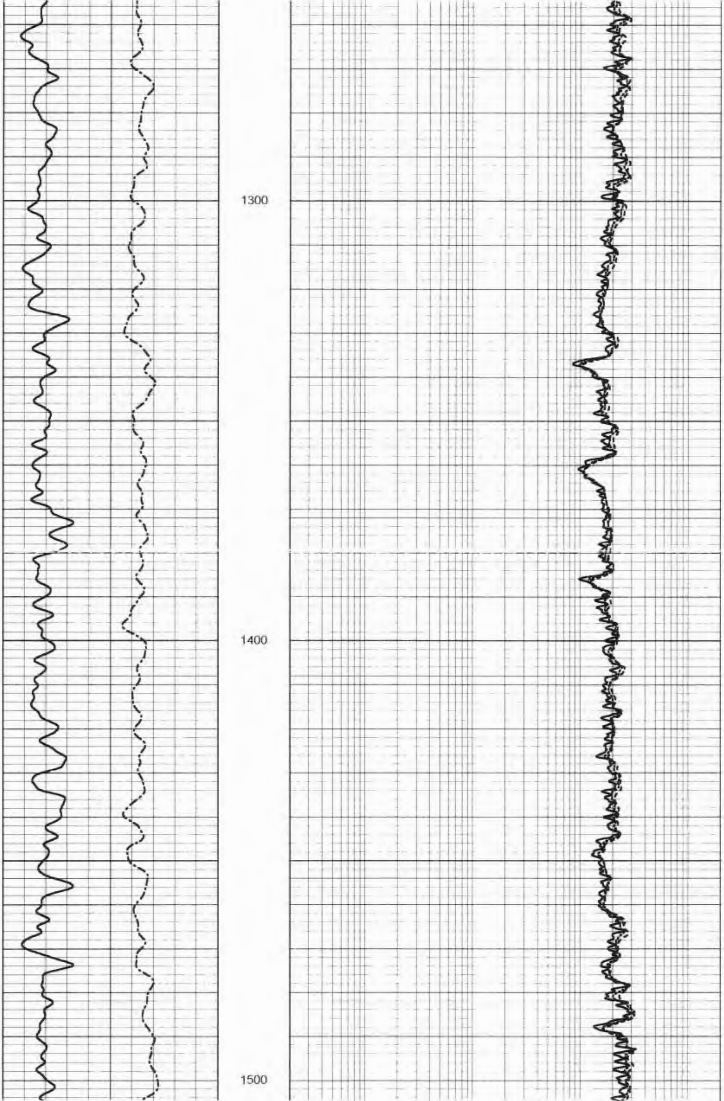
MV
Geophysical

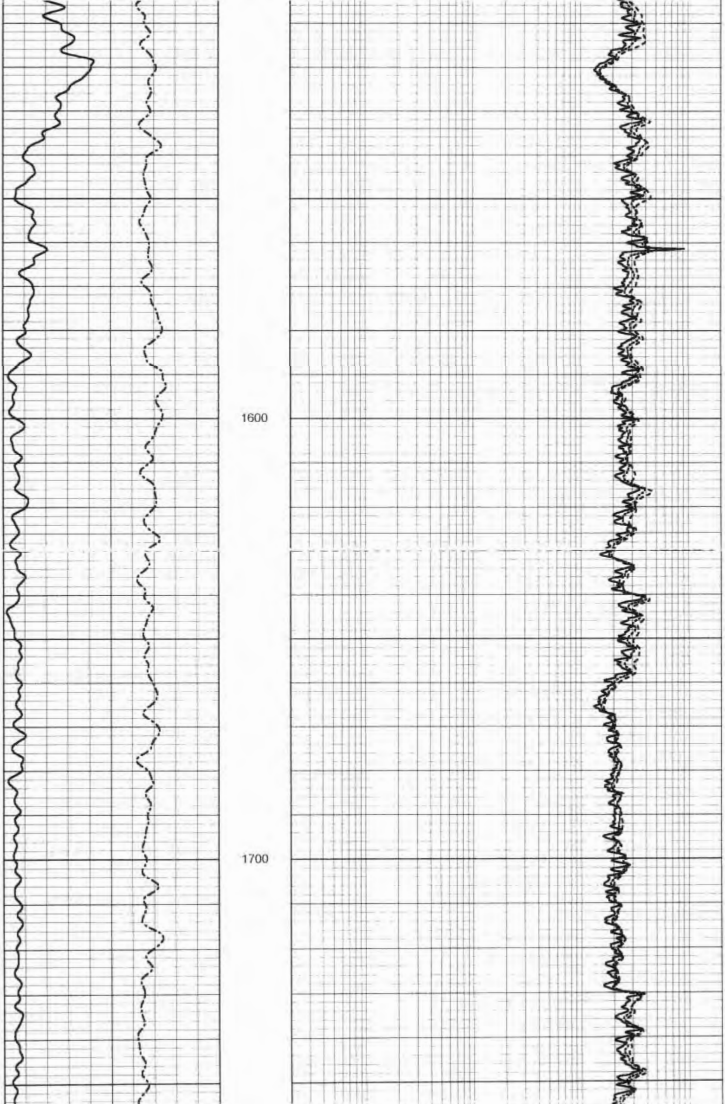
MAIN PASS

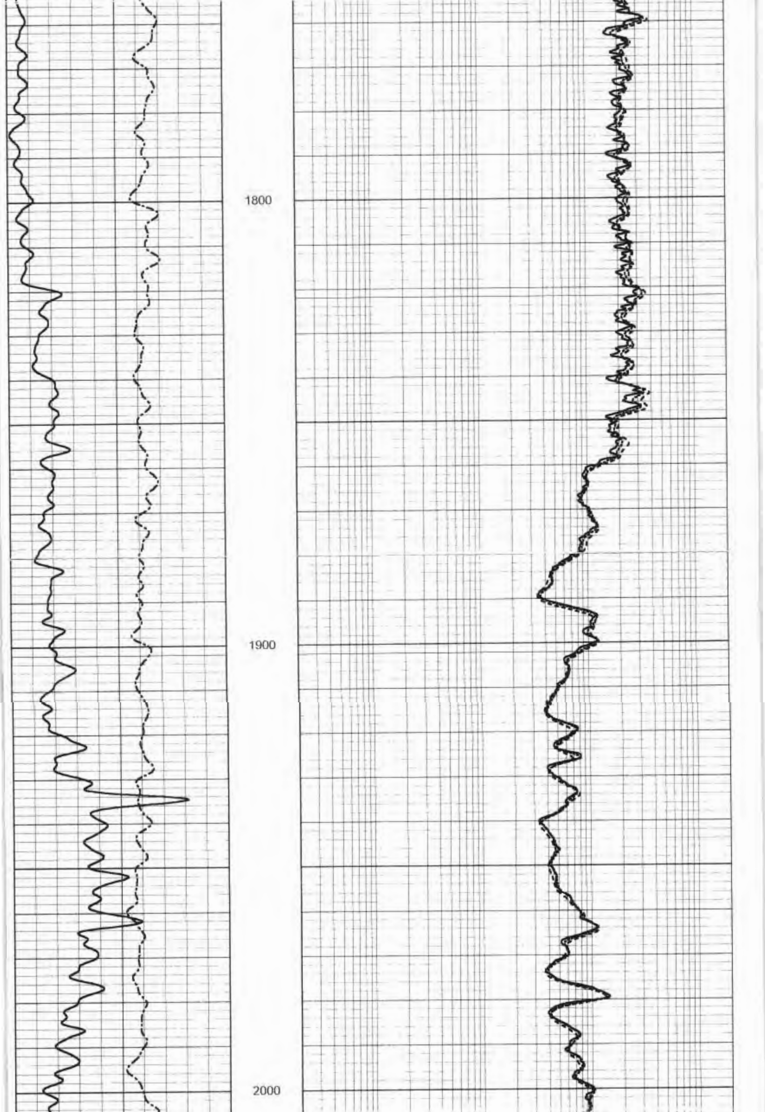
Database File:	rdcsedew.db
Dataset Pathname:	run2/MAIN
Presentation Format:	dil-5.prs
Dataset Creation:	Wed Mar 11 11:41:16 2009
Charted by:	Depth in Feet scaled 1:240

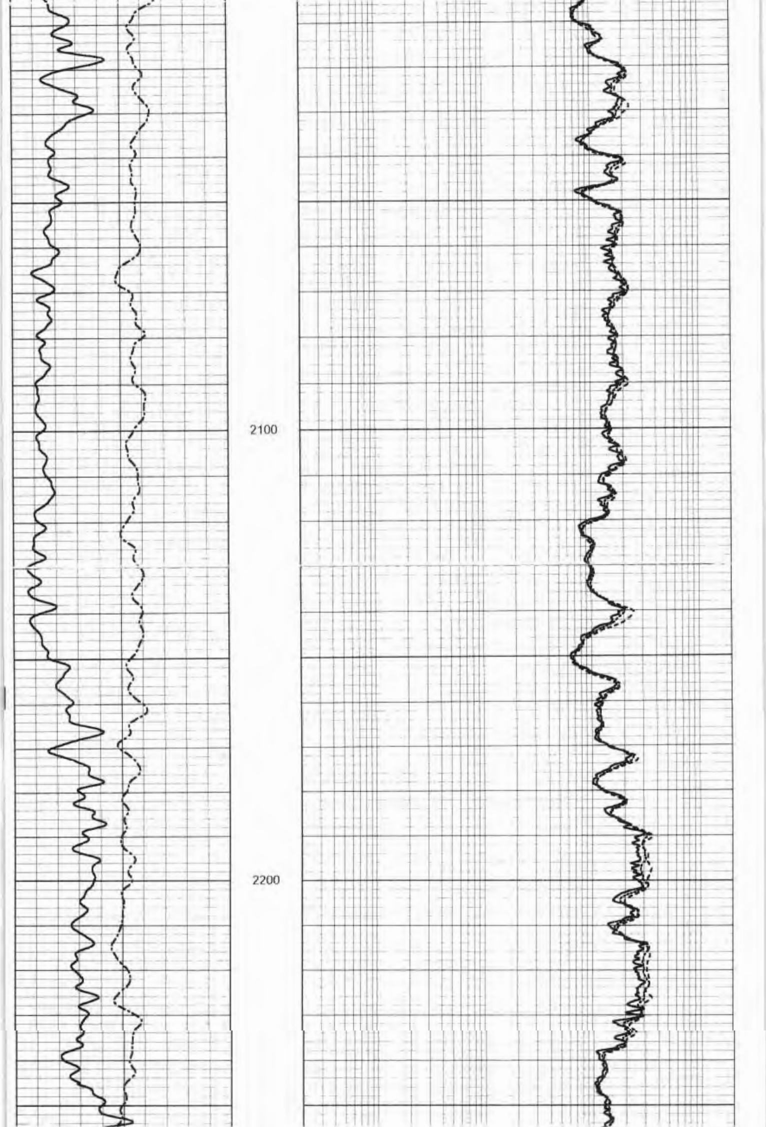


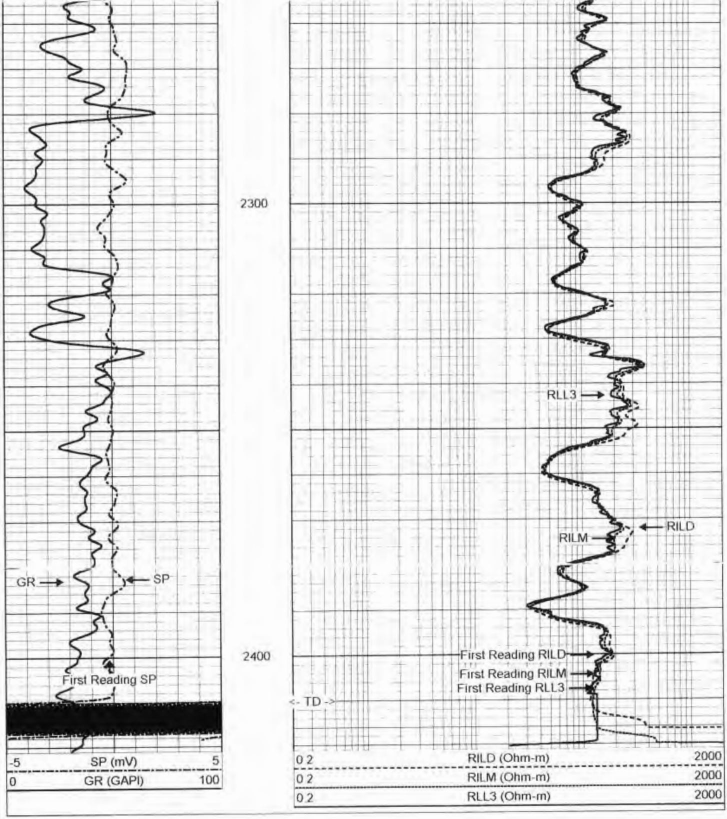








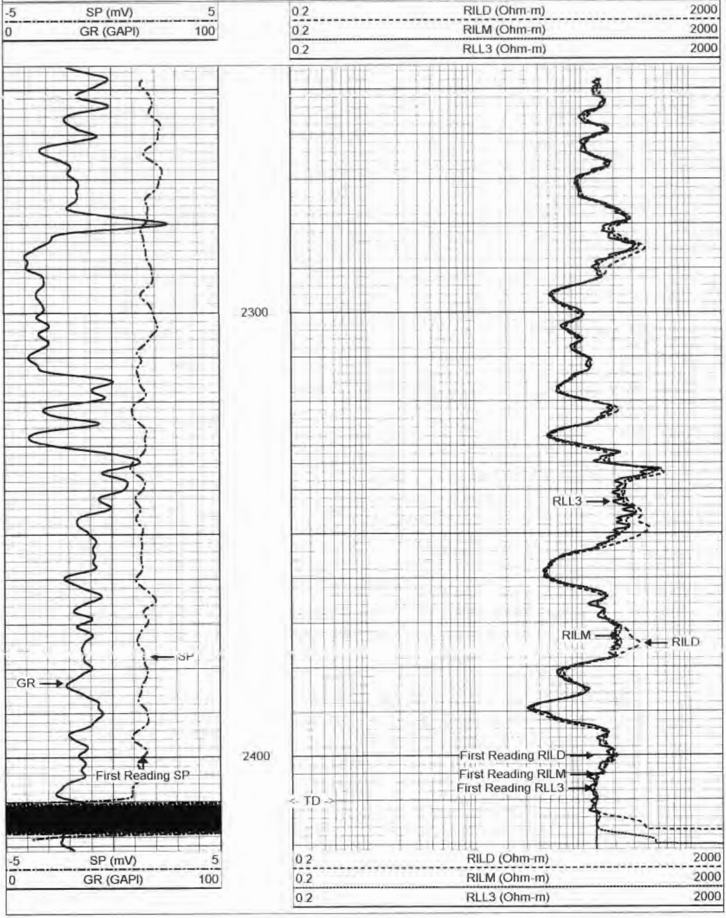




MV
Geophysical

REPEAT SECTION

Database File:	rdcsedew.db
Dataset Pathname:	run2/REPEAT
Presentation Format:	dil-5.prs
Dataset Creation:	Wed Mar 11 10:40:08 2009
Charted by:	Depth in Feet scaled 1:240



Dual Induction Calibration Report

Serial-Model: 5390-R
Surface Cal Performed: Thu Nov 15 11:21:40 2007
Downhole Cal Performed: Wed Mar 15 11:08:57 2006
After Survey Verification Performed: Thu Nov 15 11:21:50 2007

Surface Calibration

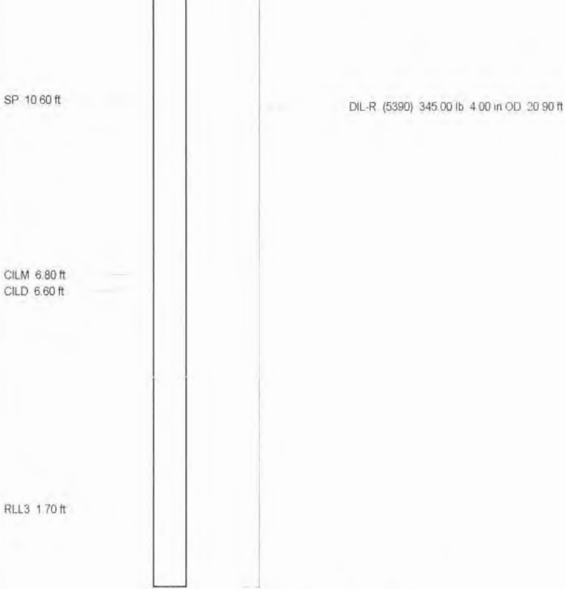
	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.050	0.646	V	0.000	400.000	mmho-m	671.771	-33.646
Medium	0.001	0.732	V	0.000	464.000	mmho-m	634.710	-0.492
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.641	V	0.000	400.000	mmho-m	634.996	-7.104
Medium	-0.009	0.738	V	0.000	464.000	mmho-m	620.900	5.734

Downhole Calibration

	Readings			References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	-26.499	398.282	mmho-m	-26.130	397.036	mmho-m	0.996	0.268
Medium	-5.803	469.733	mmho-m	-6.353	467.967	mmho-m	0.997	-0.565
Shallow	2.501	0.010	V	494.500	2.000	Ohm-m	197.683	0.044

After Survey Verification

	Readings			Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'
Deep	-26.151	398.470	mmho-m	-26.499	398.282	mmho-m	0.996	0.268
Medium	-5.737	470.303	mmho-m	-5.803	469.733	mmho-m	0.997	-0.565
Shallow	567.058	128.961	Ohm-m	494.500	2.000	Ohm-m	1.124	142.975



Dataset:	run2/pass8
Total Length:	20.90 ft
Total Weight:	345.00 lb
O.D.:	4.00 in

MV Geophysical

FLUID CONDUCTIVITY TEMPERATURE LOG

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk
State/Prv Florida

Company	Rowe Well Drilling Co.
Well	SE-DEW-1
Field	Frostproof
County	Polk
State/Prv .	Florida
Location	E. of Frostproof on CR-630 Polk County Utilities PBS&J
Other Services	XY/GR,DIL BHC,FLO FCT,DHTV

			Elevation
Permanent Datum	G.L.	Elevation	K.B.
Log Measured From	G.L.		D.F.
Drilling Measured From	G.L.		G.L.

Date	11-FEB-2009		
Run Number	ONE		
Depth Driller	2417'		
Depth Logger	2410'		
Bottom Logged Interval	2410'		
Top Log Interval	895'		
Open Hole Size	12.25"		
Type Fluid	H2O		
Density / Viscosity	NA/NA		
Max. Recorded Temp.	See FCT log		
Estimated Cement Top	NA		
Time Well Ready	07:30 3/11/2009		
Time Logger on Bottom	07:30 3/11/2009		
Equipment Number	MVGS-1		
Location	Ft. Myers		
Recorded By	S.Miller/C.Miller		T.Toy (RWD)
Witnessed By	K.Dorsey (PBSJ)	M.Regan (PBSJ)	W.Nash (RWD)

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	981'	2417'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	24"	0.375" WT	SURFACE	981'
Prot. String				
Production String				
Liner				rdcsedew.db
Invoice No. 2009030		P.O. #:	Job No.:	* FIELD PRINT *

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

STATIC and DYNAMIC DOWN passes were performed.
Cw=219 uS/cm @ 79.5 degF (Dynamic Sample). Q =~1,950 gpm.

FLUID RESISTIVITY CALIBRATION REPORT (Performed: 12-FEB-09 14:45)

uS/cm	CPS
2023.6	2985.71
4402.1	2702.45
8828.1	2403.14

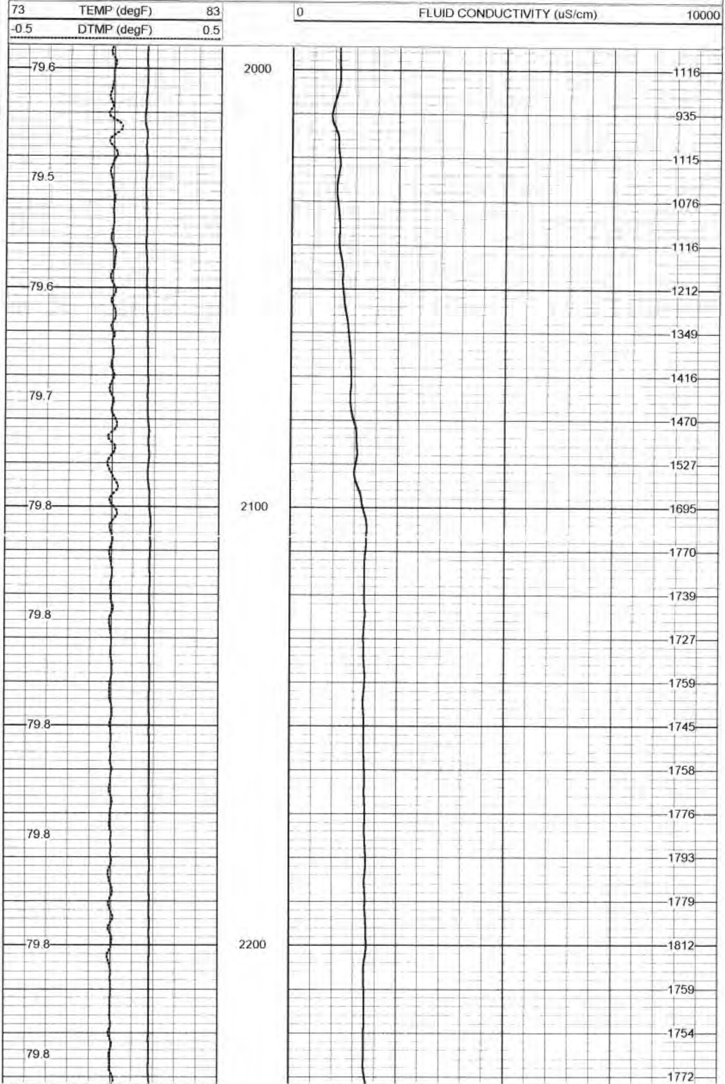
TEMPERATURE CALIBRATION REPORT (Performed: 12-FEB-09 14:30)

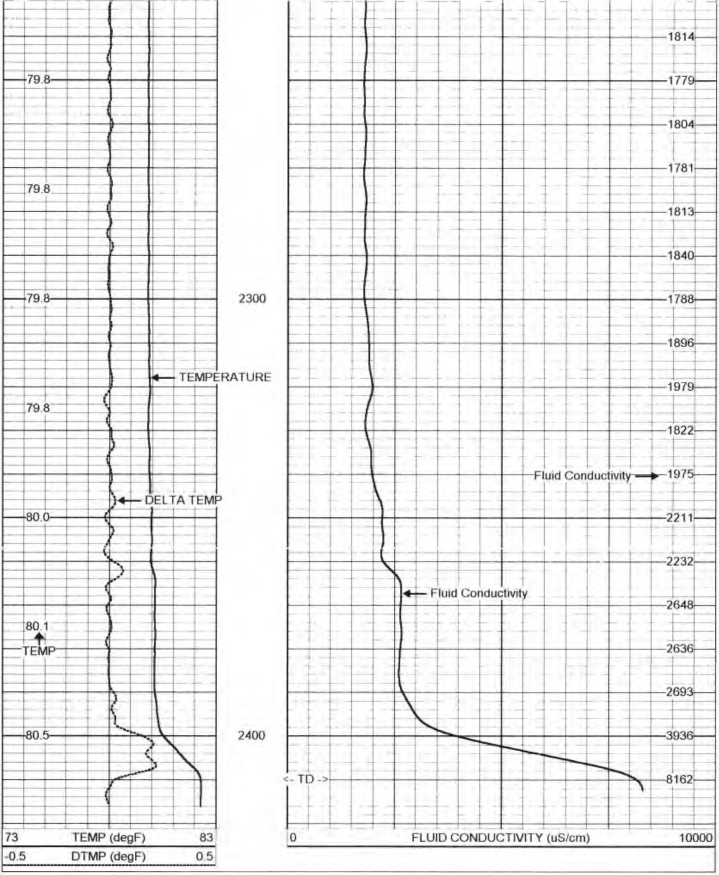
DEG-F	CPS
37.8	142.15
143.7	2685.4

MV Geophysical

Dynamic FCT Down

Database File:	rdcsedew.db
Dataset Pathname:	run2/DFCT
Presentation Format:	fctfp2.prs
Dataset Creation:	Wed Mar 11 20:14:19 2009
Charted by:	Depth in Feet scaled 1:240

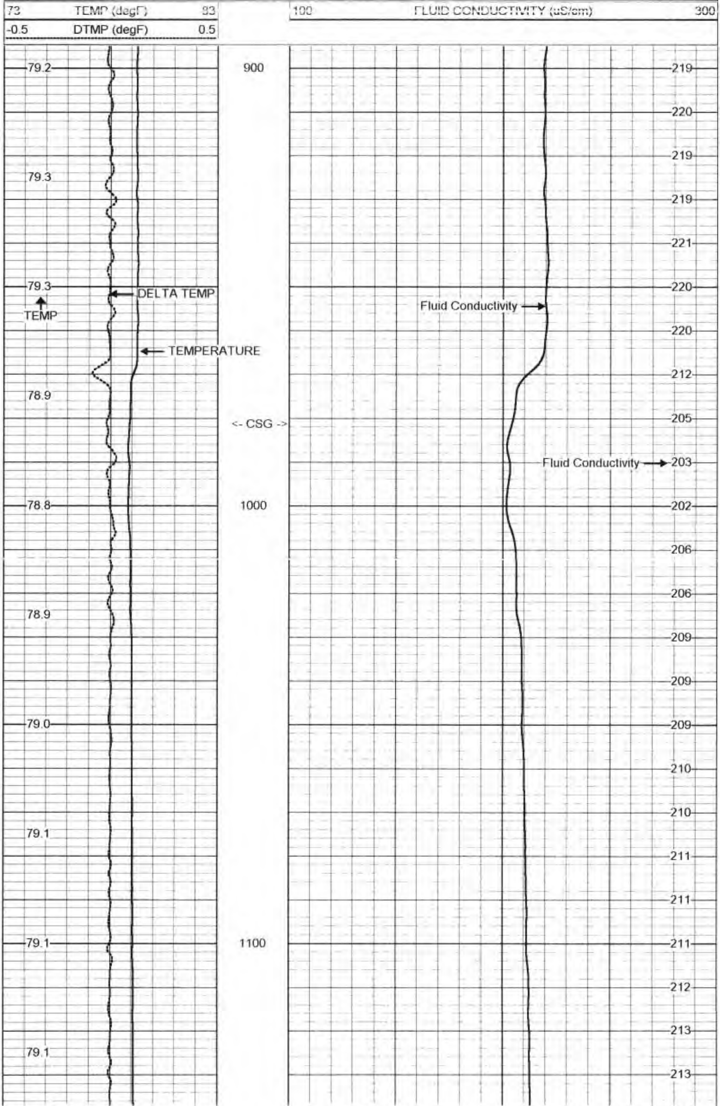


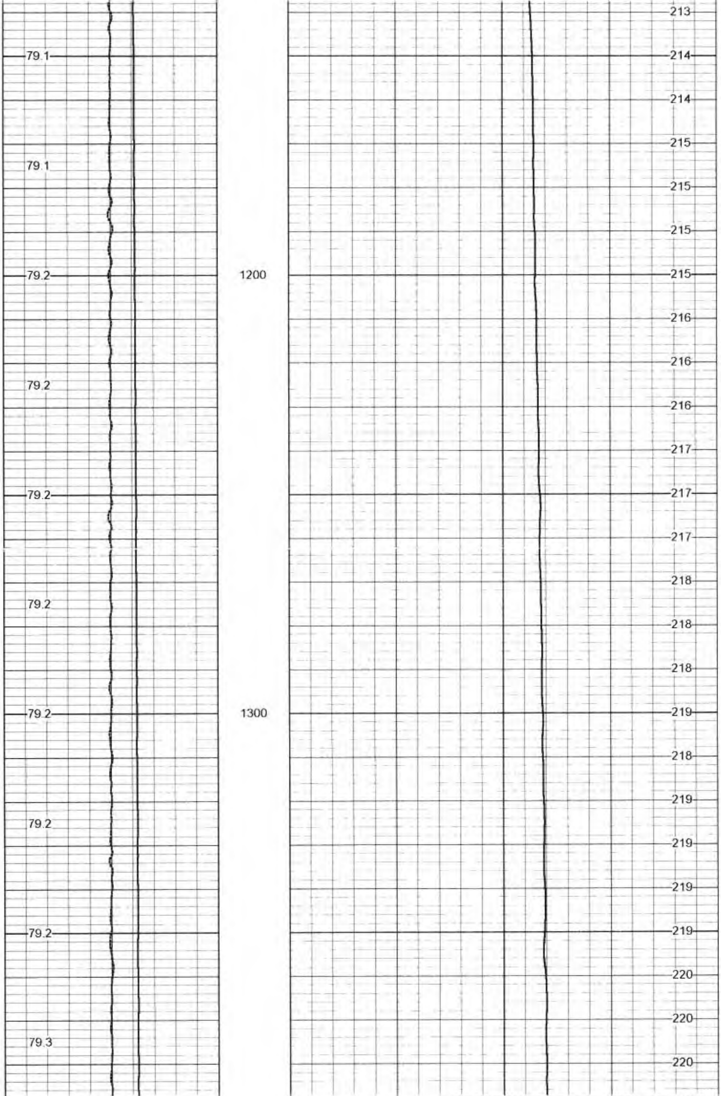


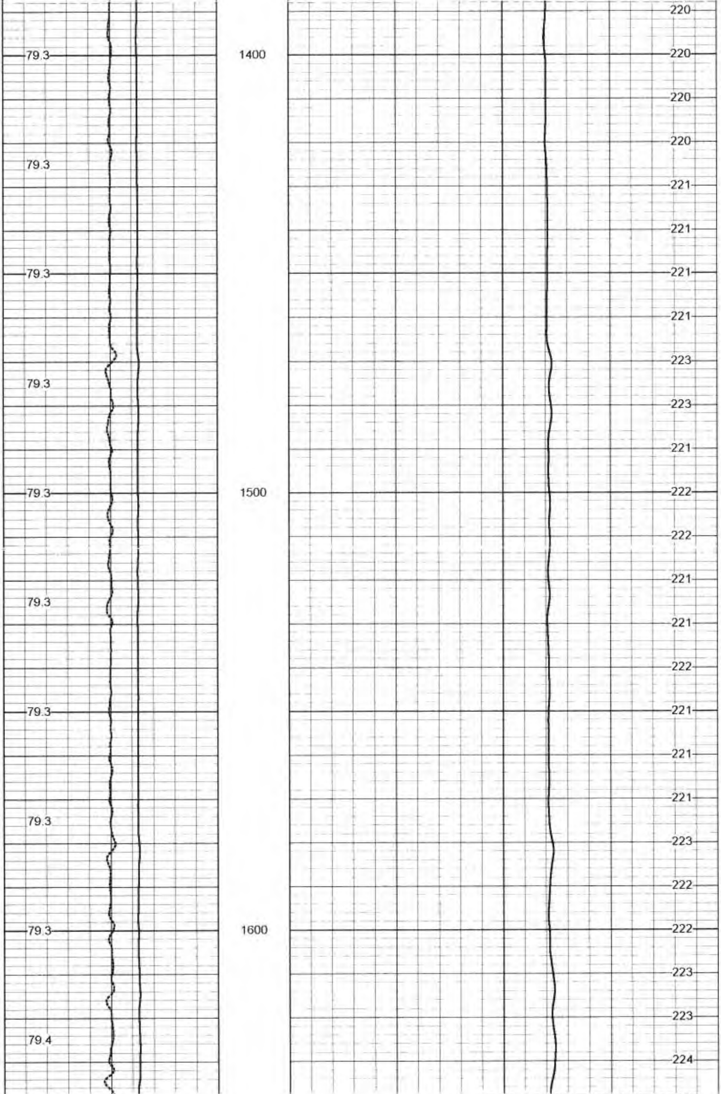
MV Geophysical

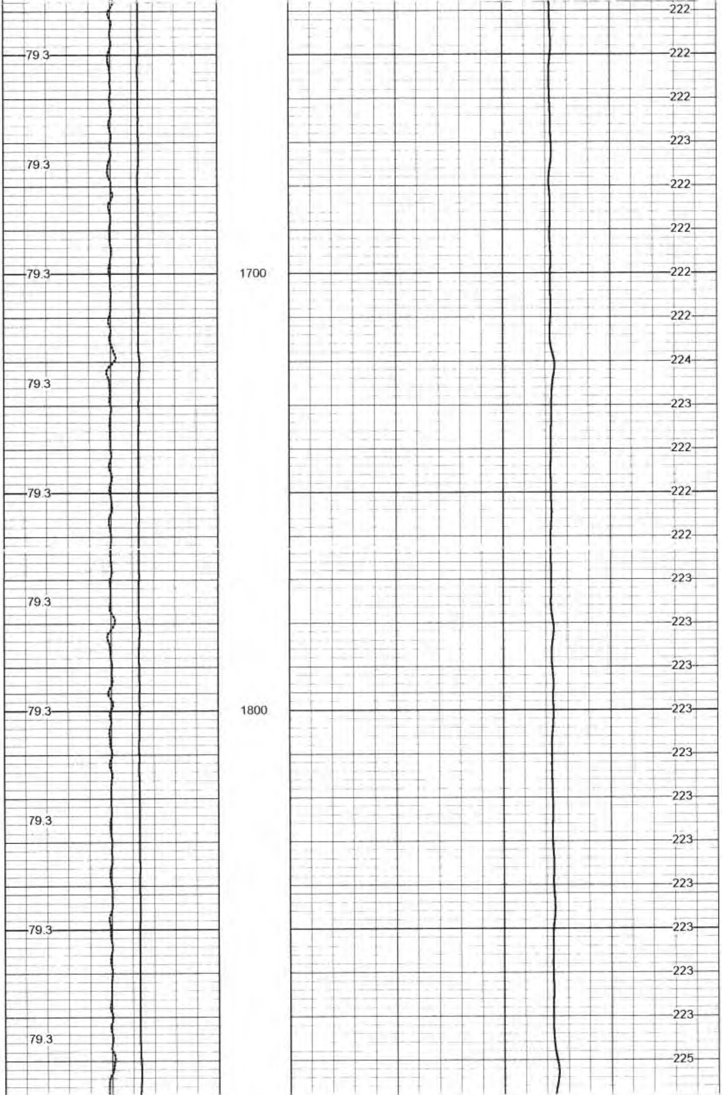
Static FCT Down

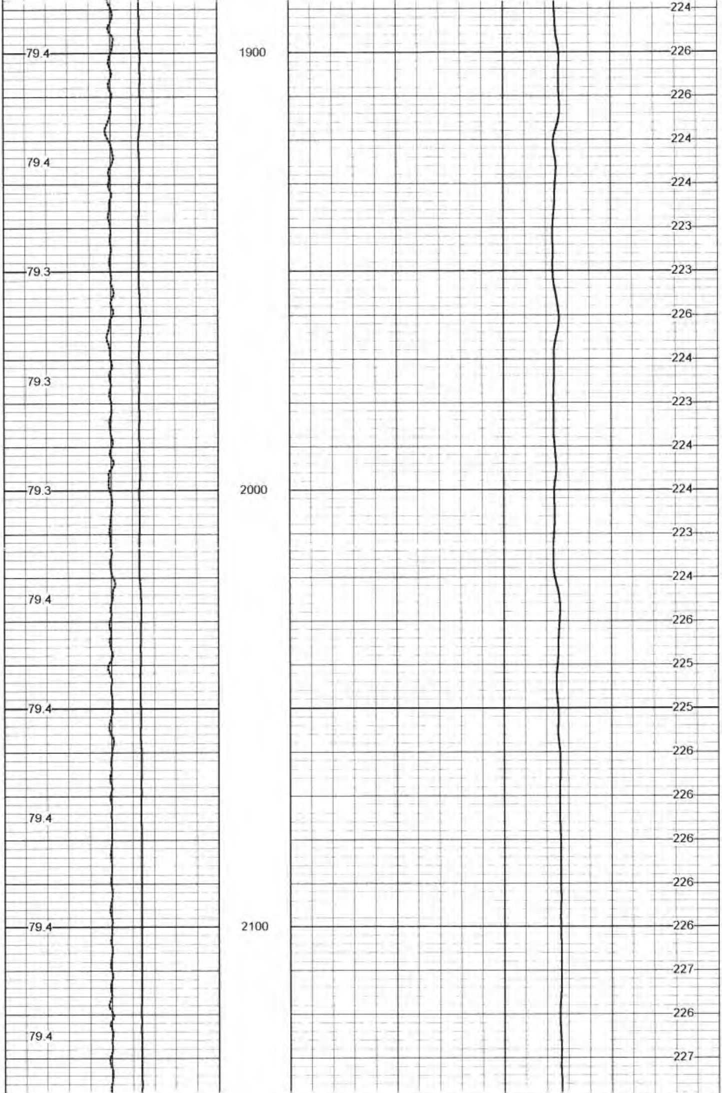
Database File: rdcsedew.db
Dataset Pathname: run2/SFCT
Presentation Format: fctfp1.prs
Dataset Creation: Wed Mar 11 19:17:16 2009
Charted by: Depth in Feet scaled 1:240

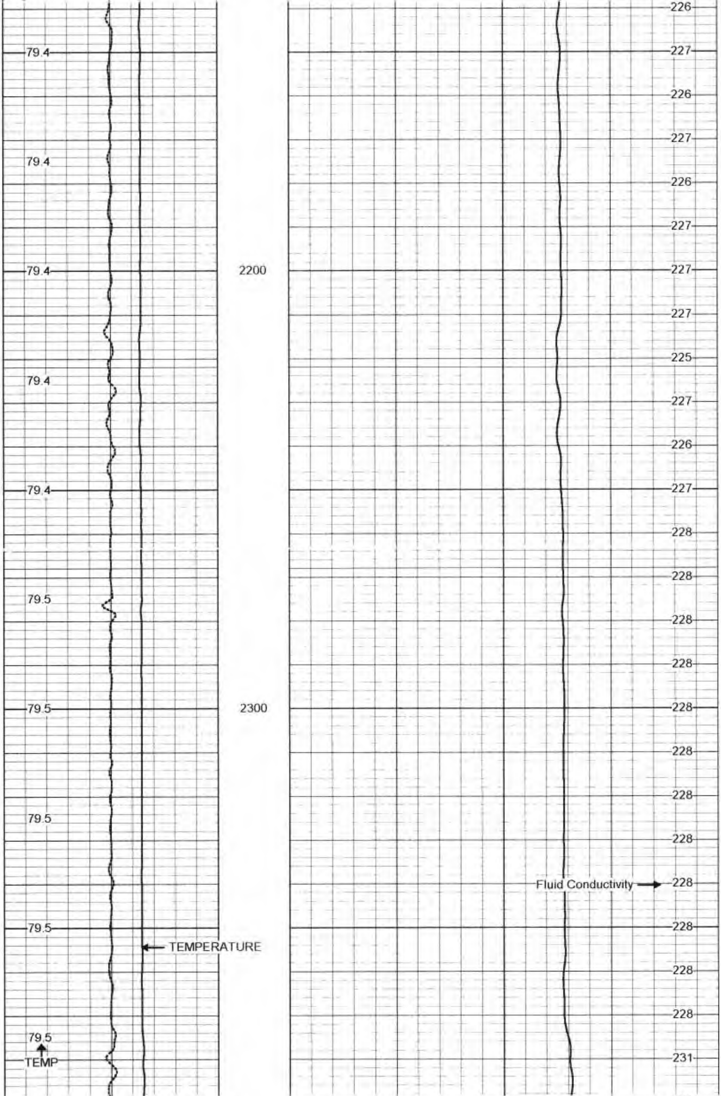


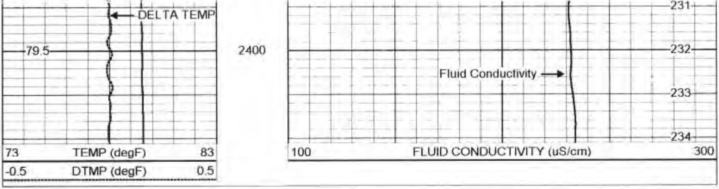


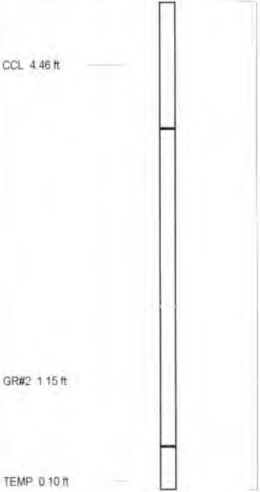












CCL-MVGS 1.9 (MV01) 8.00 lb 1.90 in OD 1.33 ft

GR #2 -RTSB (MV01B) 10.00 lb 1.90 in OD 3.33 ft

TEMP-RTS (MV01) 2.00 lb 1.90 in OD 0.46 ft

Dataset:	run2/pass32
Total Length	5.12 ft
Total Weight	20.00 lb
O.D.	1.90 in

MV Geophysical

FLOWMETER LOG

Company Rowe Well Drilling Co.
Well SE-DEW-1
Field Frostproof
County Polk
State/Prv Florida

Company	Rowe Well Drilling Co.
Well	SE-DEW-1
Field	Frostproof
County	Polk
State/Prv .	Florida
Location	E. of Frostproof on CR-630 Polk County Utilities PBS&J
Other Services	XY/GR,DIL BHC,FLO FCT,DHTV

Permanent Datum	G.L.	Elevation	K.B.
Log Measured From	G.L.		D.F
Drilling Measured From	G.L.		G.L.

Date	11-FEB-2009		
Run Number	TWO		
Depth Driller	2417'		
Depth Logger	2410'		
Bottom Logged Interval	2410'		
Top Log Interval	895'		
Open Hole Size	12.25"		
Type Fluid	H2O		
Density / Viscosity	NA/NA		
Max. Recorded Temp.	See FCT log		
Estimated Cement Top	NA		
Time Well Ready	07:30 3/11/2009		
Time Logger on Bottom	15:15 3/11/2009		
Equipment Number	MVGS-1		
Location	Ft. Myers		
Recorded By	S.Miller/C.Miller		T.Toy (RWD)
Witnessed By	K.Dorsey (PBSJ)	M.Regan (PBSJ)	W.Nash (RWD)

	Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	981'	2417'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	24"	0.375" WT	SURFACE	981'
Prot. String				
Production String				
Liner				rdcsedew.db
Invoice No.	2009030	P.O. #	Job No.:	* FIELD PRINT *

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Comments

STATIC and DYNAMIC down passes were made at 115 fpm.

TEN (10x) stations performed (9 static; 1 dynamic).

Q =~1950 gpm

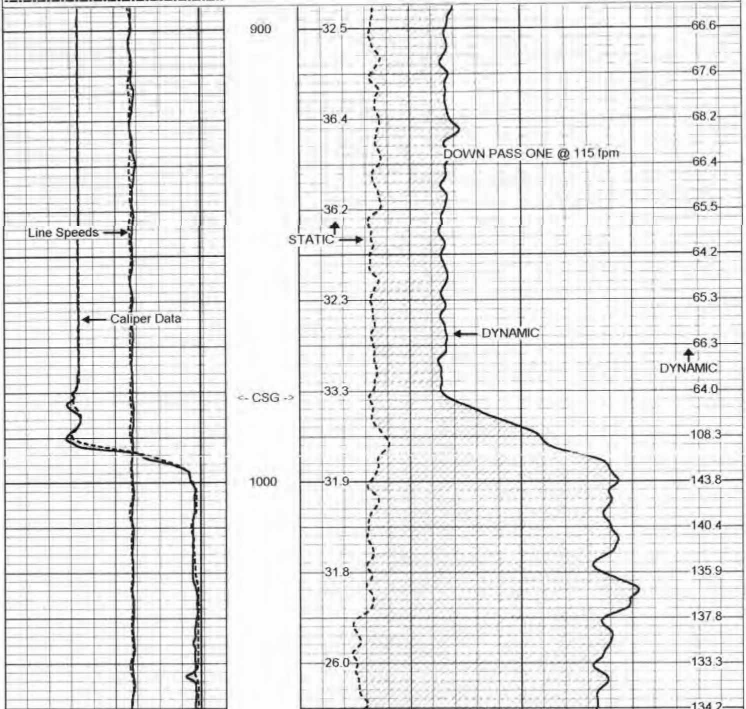
MV
Geophysical

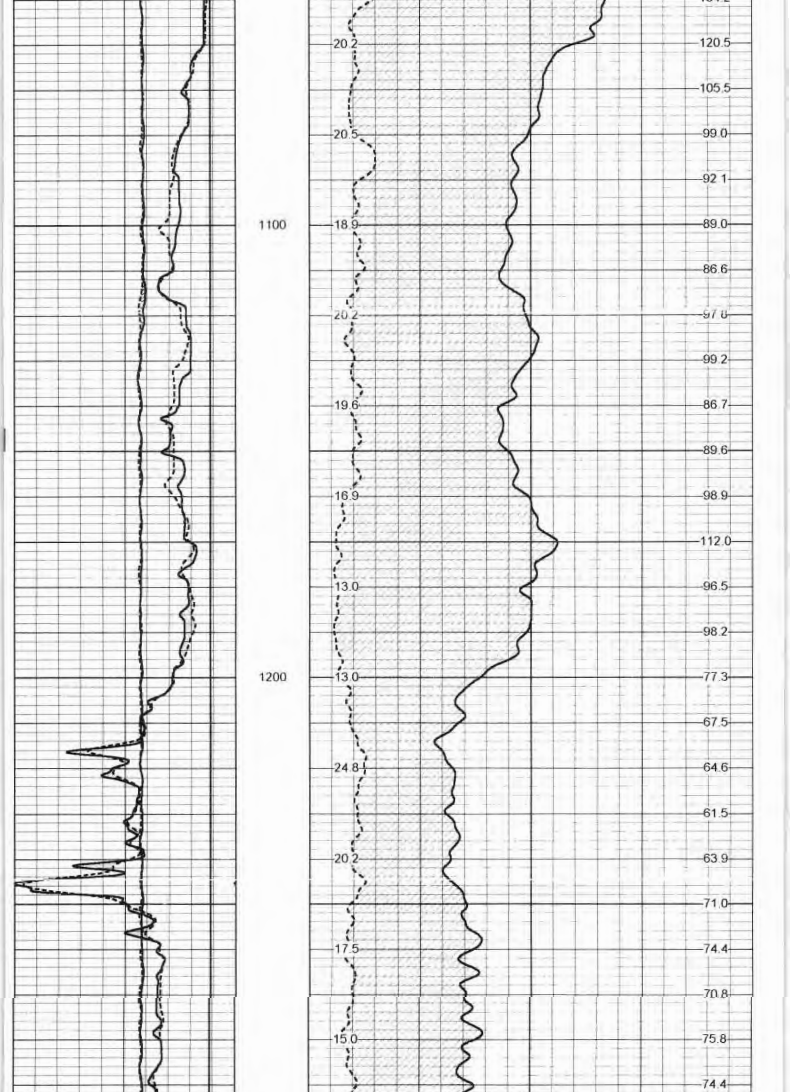
S/D DOWN @ 115 fpm

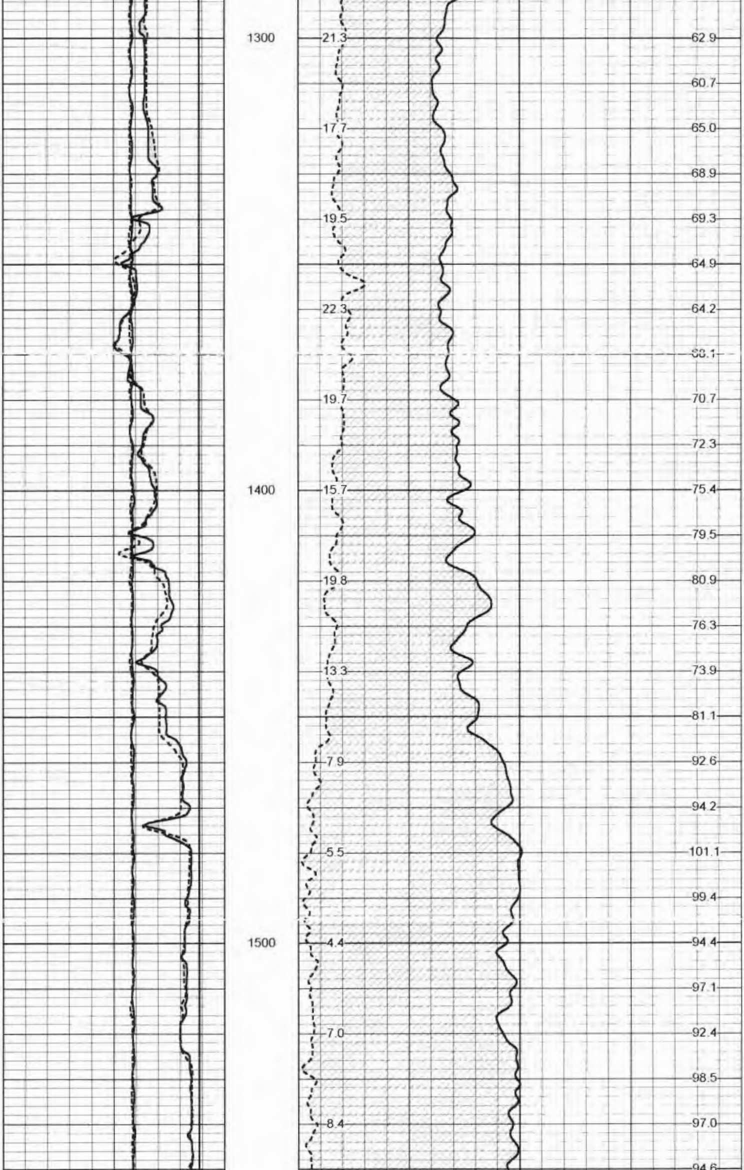
Database File: rdcsedew.db
Dataset Pathname: run2/SD115
Presentation Format: q-200fp.prs
Dataset Creation: Wed Mar 11 17:34:42 2009
Charted by: Depth in Feet scaled 1:240

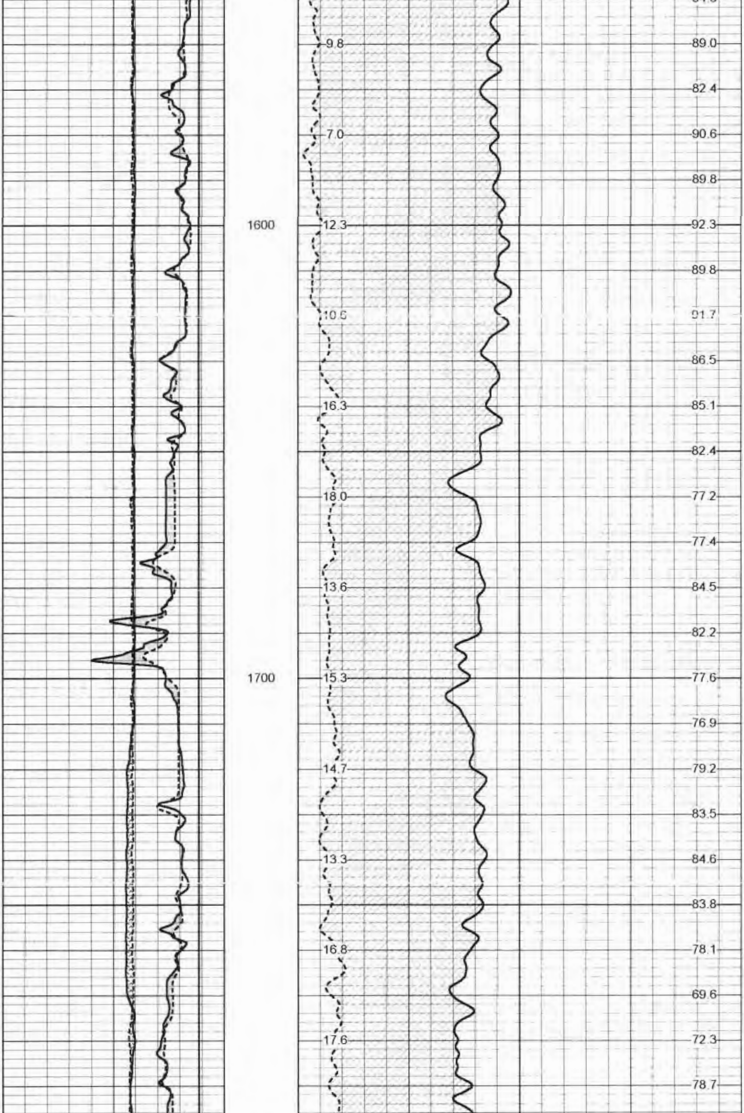
0	DYNAMIC LINE SPEED (ft/min)	200
0	STATIC LINE SPEED (ft/min)	200
30	X-CALIPER (in)	10
30	Y CALIPER (in)	10
30	BIT SIZE (in)	10

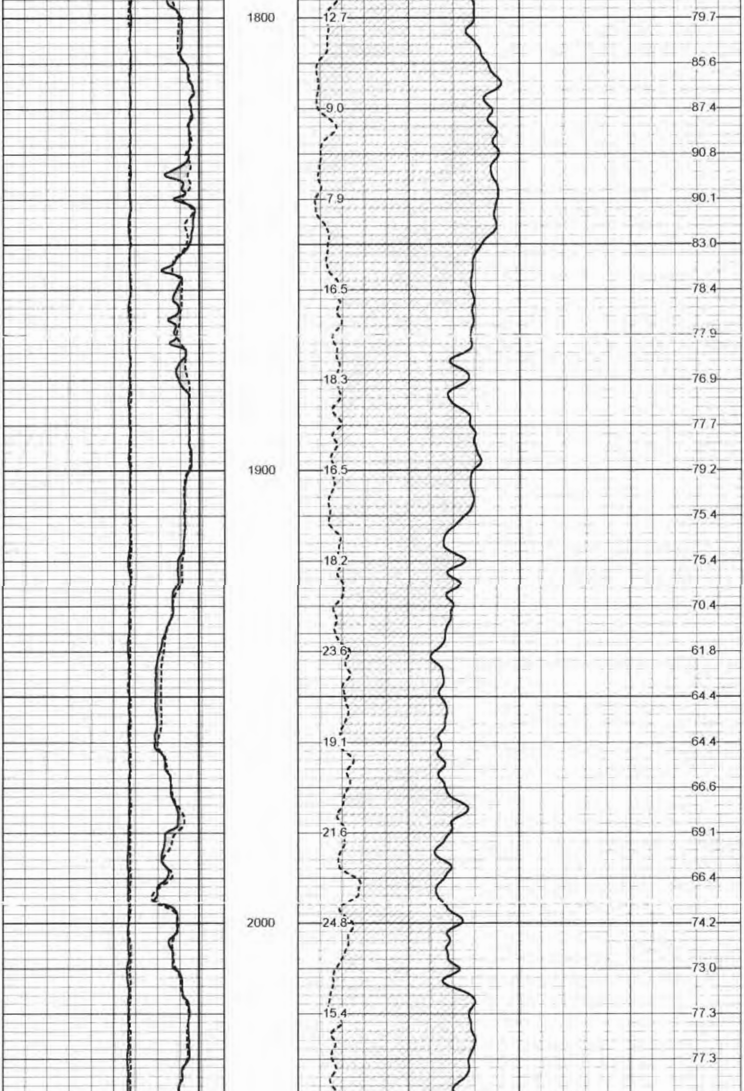
0	DYNAMIC (cps)	200
0	STATIC (cps)	200

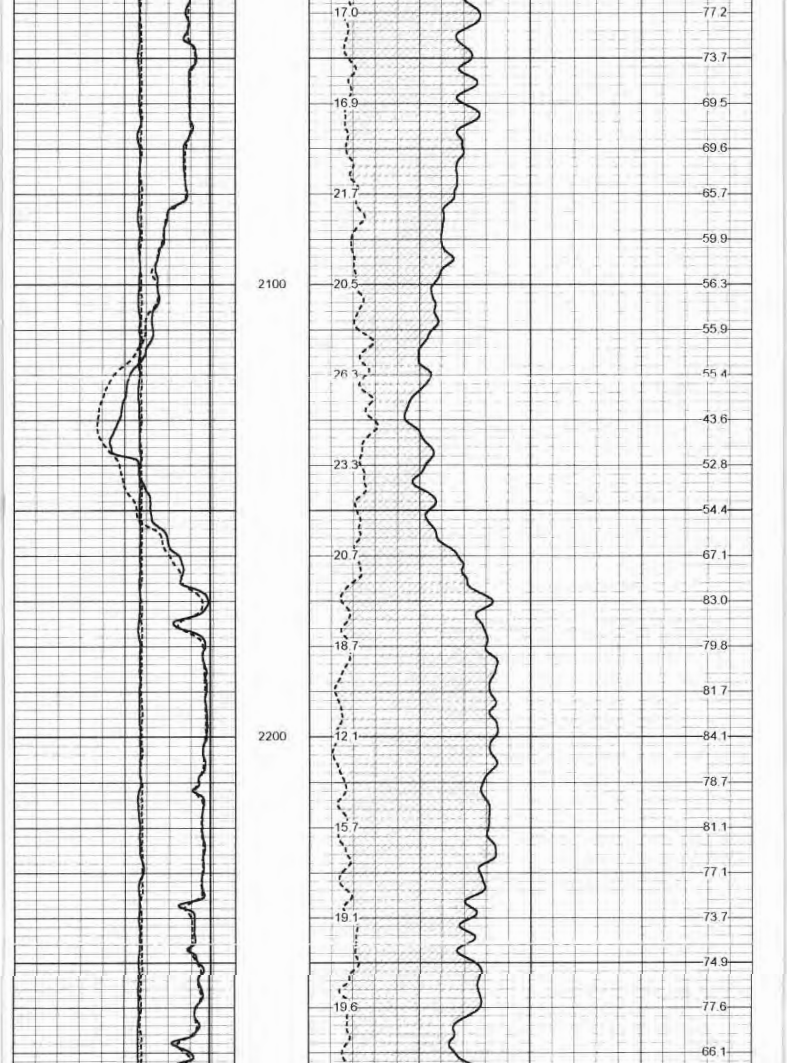


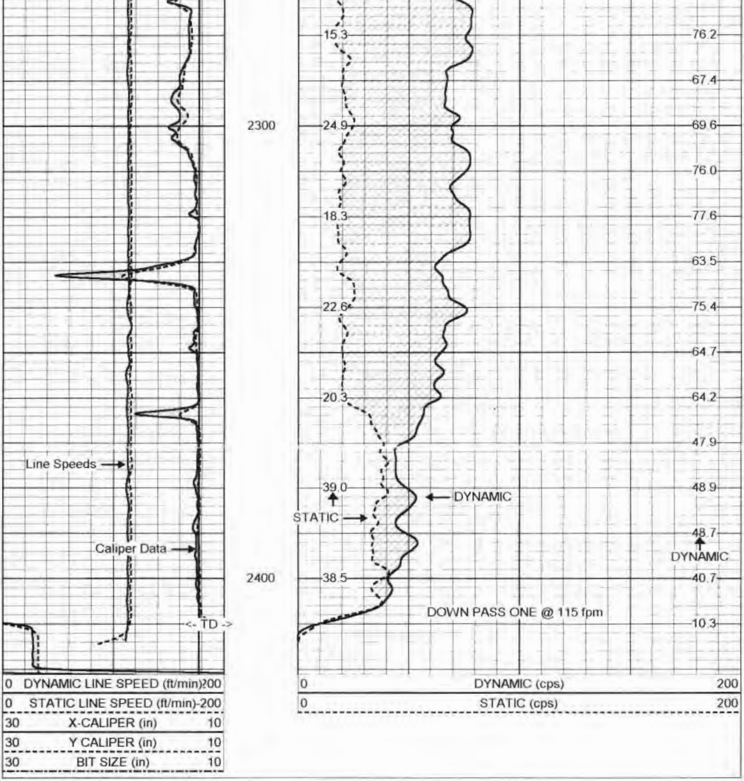








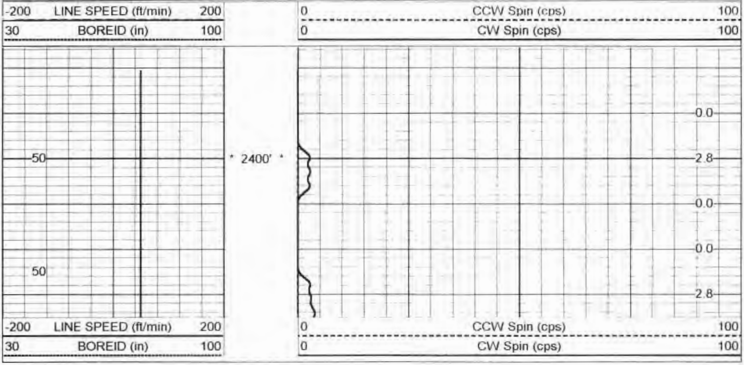




MV
Geophysical

Station 10: 2400' (Dynamic)

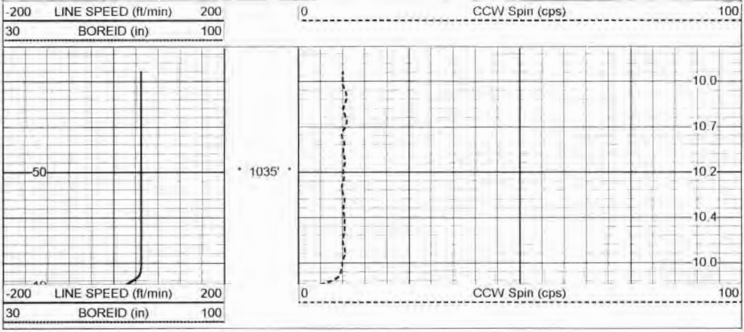
Database File:	rdcsedew.db
Dataset Pathname:	run2/pass30
Presentation Format:	flow.prs
Dataset Creation:	Wed Mar 11 17:42:43 2009 by Log VER_5.3
Charted by:	Depth in Feet scaled 1:240



MV
Geophysical

Station 9: 1035' (Static)

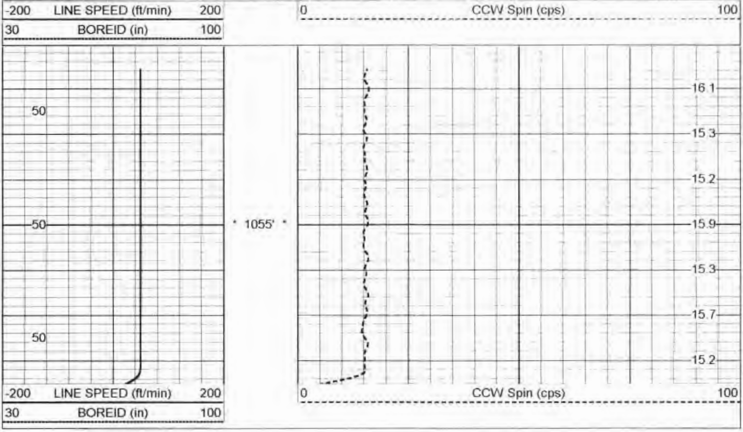
Database File:	rdcsedew.db
Dataset Pathname:	run2/pass27
Presentation Format:	flowfp1.prs
Dataset Creation:	Wed Mar 11 16:52:46 2009 by Log VER_5.3
Charted by:	Depth in Feet scaled 1:240



MV Geophysical

Station 8: 1055' (Static)

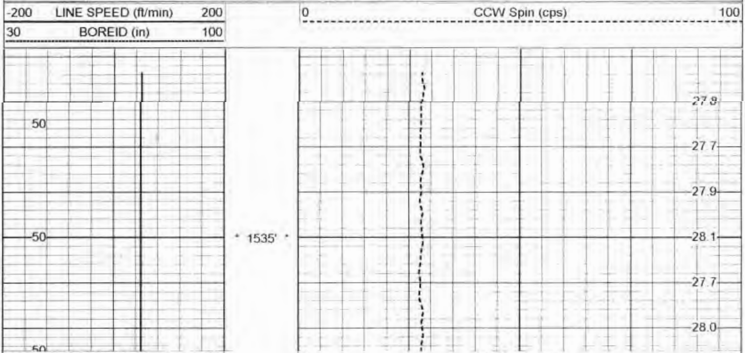
Database File: rdcsedew.db
Dataset Pathname: run2/pass26
Presentation Format: flowfp1.prs
Dataset Creation: Wed Mar 11 16:47:30 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240



MV Geophysical

Station 7: 1535' (Static)

Database File: rdcsedew.db
Dataset Pathname: run2/pass25
Presentation Format: flowfp1.prs
Dataset Creation: Wed Mar 11 16:38:00 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240



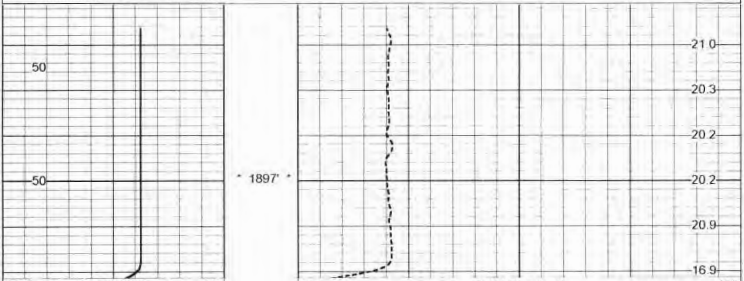
-200 LINE SPEED (ft/min) 200
30 BOREID (in) 100
0 CCW Spin (cps) 100

MV
Geophysical

Station 6: 1897' (Static)

Database File:	rdcsedew.db
Dataset Pathname:	run2/pass24
Presentation Format:	flowfp2.prs
Dataset Creation:	Wed Mar 11 16:31:39 2009 by Log VER_5.3
Charted by:	Depth in Feet scaled 1:240

-200 LINE SPEED (ft/min) 200
30 BOREID (in) 100
0 CCW Spin (cps) 100



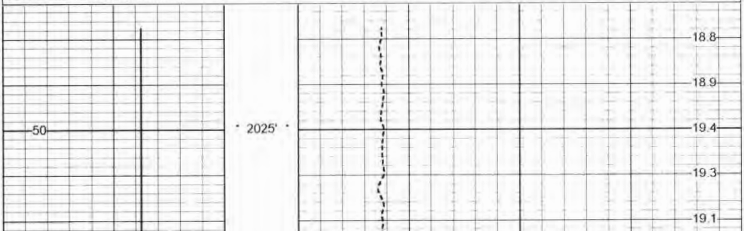
-200 LINE SPEED (ft/min) 200
30 BOREID (in) 100
0 CCW Spin (cps) 100

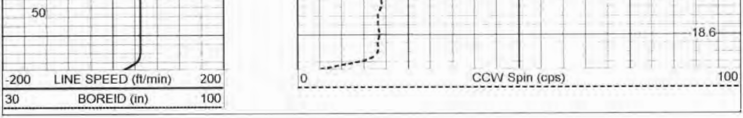
MV
Geophysical

Station 5: 2025' (Static)

Database File:	rdcsedew.db
Dataset Pathname:	run2/pass23
Presentation Format:	flowfp2.prs
Dataset Creation:	Wed Mar 11 16:28:18 2009 by Log VER_5.3
Charted by:	Depth in Feet scaled 1:240

-200 LINE SPEED (ft/min) 200
30 BOREID (in) 100
0 CCW Spin (cps) 100

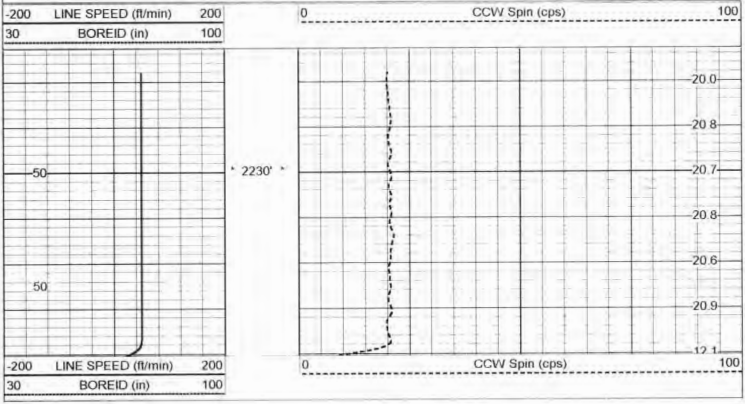




MV Geophysical

Station 4: 2230' (Static)

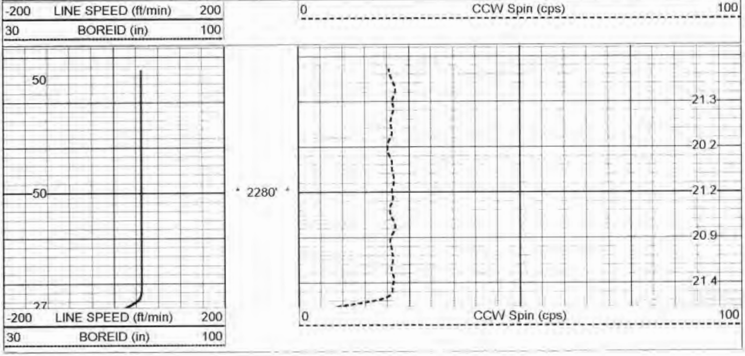
Database File: rdcsedew.db
Dataset Pathname: run2/pass22
Presentation Format: flowfp2.prs
Dataset Creation: Wed Mar 11 16:22:11 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240



MV Geophysical

Station 3: 2280' (Static)

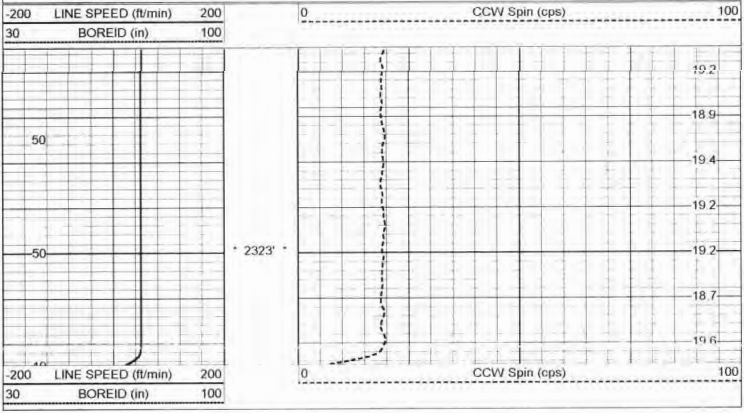
Database File: rdcsedew.db
Dataset Pathname: run2/pass21
Presentation Format: flowfp2.prs
Dataset Creation: Wed Mar 11 16:19:28 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240



MV
Geophysical

Station 2: 2323' (Static)

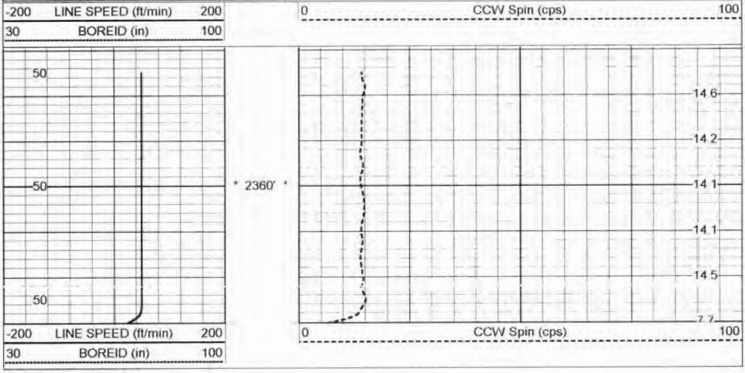
Database File: rdcsedew.db
Dataset Pathname: run2/pass20
Presentation Format: flowfp2.prs
Dataset Creation: Wed Mar 11 16:15:26 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240



MV Geophysical

Station 1: 2360' (Static)

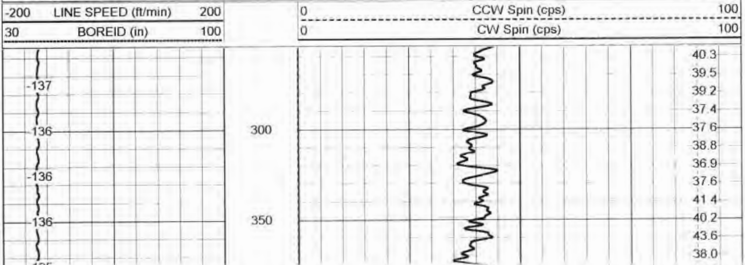
Database File: rdcsedew.db
Dataset Pathname: run2/pass19
Presentation Format: flowfp2.prs
Dataset Creation: Wed Mar 11 16:12:18 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:240

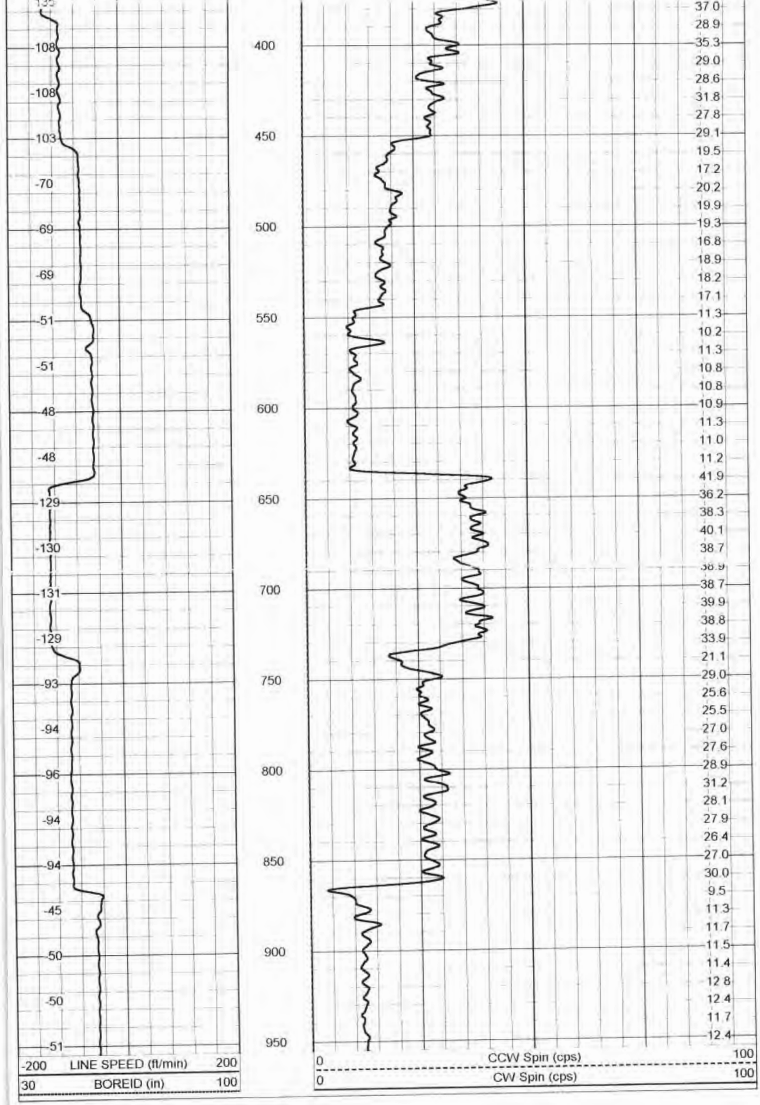


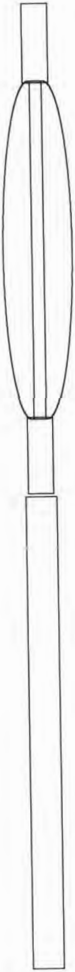
MV Geophysical

Q Calibration Down

Database File: rdcsedew.db
Dataset Pathname: run2/pass14
Presentation Format: flow.prs
Dataset Creation: Wed Mar 11 15:24:15 2009 by Log VER_5.3
Charted by: Depth in Feet scaled 1:600






CENT-5FOOTSB (5FTSB) 50.00 lb 1.69 in OD 5.00 ft
FLOW-LARGE (65) 35.00 lb 3.75 in OD 4.80 ft

FLOWP 0.00 ft
FLOWN 0.00 ft

Dataset	run2/pass30
Total Length	9.80 ft
Total Weight	85.00 lb
O D	3.75 in