

Chevron USA, Inc.

Skeen 22 26 26 Fed 7H ST01

Eddy County, NM

Ensign 767

API# 30-015-42889-0100

NM OIL CONSERVATION

ARTESIA DISTRICT

APR 17 2015

RECEIVED

February 14, 2015 – March 18, 2015

MO-XX-0902111817

Sperry Drilling

MWD End of Well Report

Submitted by David Duarte

3950 Interwood South Parkway

Houston, TX 77032

Ph: 281.986.4400

HALLIBURTON

**Drilling and Formation
Evaluation**

Accepted for release
UD 4/28/15

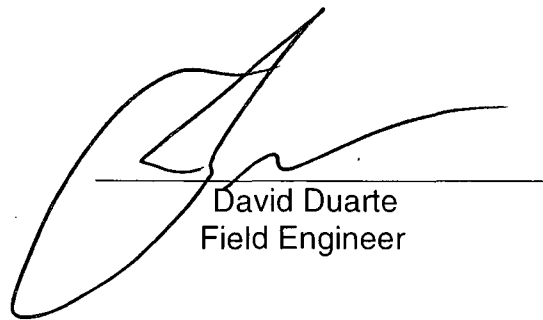
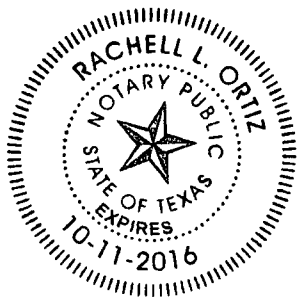
HALLIBURTON

3950 Interwood South Parkway • Houston, TX 77032

PHONE 281.986.4400 • FAX 281.986.4499

State of New Mexico, Eddy County

I, David Duarte, certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of 14-February -15 through 07-March-15, I did conduct or supervise the taking of a MWD directional surveys for the well from a depth of 436' MD to a depth of 8600' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and this survey was conducted at the request of Chevron USA, Inc, for Skeen 22 26 26 Fed 7H ST00 well, API No. 30-015-42889-0000 in Eddy County, NM. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling).



David Duarte
Field Engineer

End of Well Report for Chevron USA, Inc.

Rig : Ensign 767
Well Name : Skeen 22 26 26 Fed 7H ST01
Field Name : Bone Spring
Country : USA
Job Number : MO-XX-0902111817
Job Start Date : 14-Feb-15
API Number : 30-015-42889-0100

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GENERAL INFORMATION

Company	: Chevron USA, Inc.
Rig	: Ensign 767
Well	: Skeen 22 26 26 Fed 7H ST01
Field	: Bone Spring
Lease Name	: Skeen 22 26 26
State	: New Mexico
County	: Eddy County
Country	: USA
API Number	: 30-015-42889-0100
Sperry Drilling Job Number	: MO-XX-0902111817
Job Start Date	: 14-Feb-15
Job End Date	: 18-Mar-15
North Reference	: Grid
Total Correction (deg)	: 7.589
Dip Angle (deg)	: 59.773
Total Magnetic Field (nT)	: 48017
Date of Magnetic Data	: 14 February, 2015
Well Head coordinates N	: 32 deg. 1 min 17.87 sec North
Well Head coordinates E	: 104 deg. 16 min 25.42 sec West
Vertical section direction (deg)	: 359.82
Unit Number	: 11310662
MWD Engineers	: Jared Atwood, Robert Shine, David Duarte
Company Representatives	: John Akin
Company Geologist:	:



OPERATIONAL OVERVIEW

HALLIBURTON / SPERRY DRILLING WERE CONTRACTED BY CHEVRON USA, INC TO PERFORM LWD SERVICES FOR THE WELL SKEEN 22 26 26 FED 7H AND (ST01) . EQUIPMENT AND PERSONEL ARRIVED ON LOCATION 08-FEBRUARY - 14.
RUN 100: TIH ON 02-16-15. DRILLED FROM 446' MD TO 2908' MD.

RUN 200: TIH ON 02-9-15. DRILLED FROM 2908' MD TO 4996' MD.

RUN 300: TIH ON 02-21-15. DRILLED FROM 4996' MD TO 6985' MD.

RUN 400: TIH ON 02-28-15. DRILLED FROM 6985' MD TO 6998' MD.

RUN 500: TIH ON 03-03-15. FROM 6998' MD TO 6998' MD. POOH NO FOOTAGE DRILLED. FAILED FIT TEST. POOH TO PERFORM SQUEEZE JOB.

RUN 600: TIH ON 03-05-15. DRILLED FROM 6998' MD TO 8690' MD. TD PILOT HOLE.

RUN 700: TIH ON 03-10-15. SIDE TRACK AT 7665 AND DRILLED TO 8745'MD. POOH DUE THE MUD MOTOR LOSS DIFERENTIAL PRESSURE READ

RUN 800: TIH ON 03-12-15. DRILLED FROM 8745' MD TO 8863' MD. .POOH DUE LANDING HOLE.

RUN 900: TIH ON 03-13-15. FROM 8863' MD TO 8863' MD. NOTTIH, DUE SPT NOT PASS, FAILED HCIM.

RUN 1000: TIH ON 03-14-15 FROM 8863' MD TO 8863' MD. POOH DUE FAILED TOOL EZIPILOT.

RUN 1100: TIH ON 03-15-15. DRILLED FROM 8863' MD TO 8872' MD POOH DUE FAILED TOOL EZIPILOT.

RUN 1200: TIH ON 03-17-15. DRILLED FROM 8872' MD TO 9067' MD. POOH DUE PCDC FAILED

SUMMARY OF MWD RUNS

Run No.	Rig Run No.	Hole Size (in)	MWD Service	Start Depth (ft)	End Depth (ft)	Drill/Wipe Distance (ft)	Run Start Date Time	Run End Date Time	BIT Hrs	Oper. Hrs	Circ. Hrs	Max Temp. (degF)	Serv Int.	Trip for MWD	Failure Type
100	0100	12.25	DGWD	446.00	2908.00	2462.00	16-Feb-15 11:00	18-Feb-15 22:30	59.50	59.500	46.000	109.09	No	No	
200	0200	12.25	DGWD	2908.00	4994.00	2086.00	19-Feb-15 01:00	21-Feb-15 08:00	55.00	55.000	43.000	115.56	No	No	
300	0300	12.25	DGWD	4994.00	6985.00	1991.00	21-Feb-15 10:00	25-Feb-15 14:30	100.50	100.500	82.000	110.00	Yes	No	
400	0400	8.5	DGWD	6985.00	6998.00	13.00	28-Feb-15 18:00	01-Mar-15 18:00	24.00	24.000	2.000	110.00	No	No	
500	0500	8.5	DGWD	6998.00	6998.00	0.00	03-Mar-15 03:00	04-Mar-15 10:00	31.00	31.000	4.000	111.24	No	No	
600	0600	8.5	DGWD	6998.00	8690.00	1692.00	05-Mar-15 12:00	07-Mar-15 18:00	54.00	54.000	38.000	144.54	No	No	
700	0700	8.5	DGWD	7665.00	8745.00	1080.00	10-Mar-15 01:30	12-Mar-15 20:00	66.50	66.500	53.000	133.00	No	No	
800	0800	8.5	DGWD	8745.00	8863.00	118.00	12-Mar-15 20:00	13-Mar-15 19:00	23.00	17.000	5.370	137.70	No	No	
900	0900	8.5	DGWD	8863.00	8863.00	0.00	13-Mar-15 19:33	14-Mar-15 02:32	6.97	6.970	0.283	81.41	No	Yes	
1000	1000	8.5	DGWD	8863.00	8863.00	0.00	14-Mar-15 05:55	15-Mar-15 04:19	22.41	22.418	2.392	123.76	No	Yes	
1100	1100	8.5	DGWD	8863.00	8872.00	9.00	15-Mar-15 07:07	16-Mar-15 02:21	19.22	19.232	7.378	127.29	No	Yes	
1200	1200	8.5	DGWD	8872.00	9067.00	195.00	17-Mar-15 00:02	18-Mar-15 03:00	26.97	23.152	11.024	148.47	Yes	Yes	

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 100	Run Start : 16-Feb-15 11:00	BRT Hrs : 59.50	Circ. Hrs : 46.00
Rig Run No. : 0100	Run End : 18-Feb-15 22:30	Hole Size (in) : 12.25	Oper. Hrs : 59.50

DRILLING DATA

Start Depth (ft) : 446.00	Footage (ft) : 2462.00	Avg WOB (klb) : 25.0	Avg ROP (fph) : 100.00
End Depth (ft) : 2908.00	Avg Flow Rate (gpm) : 550	Avg TOB (ft-lb) : 5500	Avg SPP (psig) : 1500
Drilling Hrs (hr) : 35.123	Avg RPM (rpm) : 80	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 10.00	Viscosity (spqt) : 40.00	PV (cP) : 10	YP (lbf/ft ²) : 6.00
Chlorides (ppm) : NA	Max Temp (degF) : 109.09	% Solids (%) : 0.25	% Sand (%) : 0.25
pH (pH) : 8.50	Fluid Loss (mptm) : NA	% Oil (%) : 0.00	O:W : 0:100

MWD PERFORMANCE

Tool OD (in) : 8	Type : DGWD	Min. Inc. (deg) : 0.29	Min. Inc. Depth (ft) : 2844.00
Final Az. (deg) : 172.81	Max Op. Press. (psig) : 1512	Max. Inc. (deg) : 3.12	Max. Inc. Depth (ft) : 1647.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

RUN 100: DRILLED FROM 446' MD TO 2900' MD. POOH DUE TO LOW ROP.

	Length (ft)	Cumulative Length (ft)		Length (ft)	Sensor Dist From Bit (ft)
(1) 5 X HWDP 5.00 in OD / 3.00 in ID		1022.93			
(2) 6-1/2" Jar 6.50 in OD / 2.50 in ID SN : Rental					
(3) 9 X HWDP 5.00 in OD / 3.00 in ID					
(4) X-Over Sub 8.00 in OD / 2.87 in ID SN : Rig	(1) 151.77		Non Mag Drill Collar 8.00 in OD / 3.25 in ID SN : DR27164	30.38	
(5) 12 X 6 1/2" Drill Collar 6.50 in OD / 3.00 in ID SN : Rig		871.16			
(6) X-Over Sub 8.00 in OD / 2.00 in ID SN : Rig	(2) 32.60				
(7) 3 X 8" Drill Collar 8.00 in OD / 2.75 in ID SN : Rig		838.56			
(8) X-Over Sub 7.56 in OD / 3.00 in ID SN : DR29340	(3) 273.95		HOS 8.00 in OD / 3.25 in ID SN : 11230608		[2] 72.86
(9) MWD			*[1]Positive Pulser - SN : 11504180		[3] 69.27
(10) 12" Integral Blade Stabilizer 8.00 in OD / 2.87 in ID SN : Knight	(4) 2.20	564.61	*[2]PCM Sonde 2.0" - SN : 12001046	5.65	[4] 64.29
(11) Shock Sub 8.00 in OD / 2.88 in ID SN : Rental		562.41	*[3]PCG Sonde 2.0" - SN : 11681075		
(12) Float Sub 8.00 in OD / 2.88 in ID SN : DR5622	(5) 355.03		*[4]PCDC Sonde 2.0" - SN : 11902088		
(13) 8" SperryDrill Lobe 6/7 - 4.0 stg 8.00 in OD / 5.25 in ID SN : 800-650			Non Mag Drill Collar 8.00 in OD / 3.25 in ID SN : DR8377	29.90	
(14) 12 1/4" Baker PDC 8.00 in OD / 2.75 in ID SN : 7150387	(6) 3.65	207.38			
		203.73			
	(7) 88.84				
	(8) 3.58	114.89			
		111.31			
	(9) 65.93				
	(10) 7.59	45.38			
	(11) 6.84	37.79			
	(12) 2.83	30.95			
	(13) 26.87	28.12			
	(14) 1.25	1.25			

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 200	Run Start : 19-Feb-15 01:00	BRT Hrs : 55.00	Circ. Hrs : 43.00
Rig Run No. : 0200	Run End : 21-Feb-15 08:00	Hole Size (in) : 12.25	Oper. Hrs : 55.00

DRILLING DATA

Start Depth (ft) : 2908.00	Footage (ft) : 2086.00	Avg WOB (klb) : 25.0	Avg ROP (fph) : 60.00
End Depth (ft) : 4994.00	Avg Flow Rate (gpm) : 580	Avg TOB (ft-lb) : 8500	Avg SPP (psig) : 1900
Drilling Hrs (hr) : 36.773	Avg RPM (rpm) : 75	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 10.30	Viscosity (spqt) : 29.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 188200	Max Temp (degF) : 115.56	% Solids (%) : 0.25	% Sand (%) : 0.25
pH (pH) : 12.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0.86

MWD PERFORMANCE

Tool OD (in) : 8	Type : DGWD	Min. Inc. (deg) : 0.42	Min. Inc. Depth (ft) : 3032.00
Final Az. (deg) : 194.78	Max Op. Press. (psig) : 2674	Max. Inc. (deg) : 0.90	Max. Inc. Depth (ft) : 4835.97
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

RUN 200: DRILLED FROM 2908' MD TO 4994' MD. POOH DUE TO LOW ROP.

	Length (ft)	Cumulative Length (ft)		Length (ft)	Sensor Dist From Bit (ft)
(1) 5 X HWDP 5.00 in OD / 3.00 in ID					
(2) 6-1/2" Jar 6.50 in OD / 2.50 in ID SN : Rental		1022.96			
(3) 9 X HWDP 5.00 in OD / 3.00 in ID					
(4) X-Over Sub 8.00 in OD / 2.87 in ID SN : Rig	(1) 151.77		Non Mag Drill Collar 8.00 in OD / 3.25 in ID SN : DR27164	30.38	
(5) 12 X 6 1/2" Drill Collar 6.50 in OD / 3.00 in ID SN : Rig		871.19			
(6) X-Over Sub 8.00 in OD / 2.00 in ID SN : Rig	(2) 32.60				
(7) 3 X 8" Drill Collar 8.00 in OD / 2.75 in ID SN : Rig		838.59			
(8) X-Over Sub 7.56 in OD / 3.00 in ID SN : DR29340	(3) 273.95		HOS 8.00 in OD / 3.25 in ID SN : 11230608		[2] 72.86
(9) MWD			*[1]Positive Pulser - SN : 11413197		[3] 69.27
(10) 12" Integral Blade Stabilizer 8.00 in OD / 2.87 in ID SN : Knight	(4) 2.20	564.64	*[2]PCM Sonde 2.0" - SN : 12000942	5.65	[4] 64.29
(11) Shock Sub 8.00 in OD / 2.88 in ID SN : Rental		562.44	*[3]PCG Sonde 2.0" - SN : 11293385		
(12) Float Sub 8.00 in OD / 2.88 in ID SN : DR5622	(5) 355.03		*[4]PCDC Sonde 2.0" - SN : 11297593		
(13) 8" SperryDrill Lobe 6/7 - 4.0 stg 8.00 in OD / 5.25 in ID SN : 10447734			Non Mag Drill Collar 8.00 in OD / 3.25 in ID SN : DR8377	29.90	
(14) 12 1/4" Baker PDC 8.00 in OD / 2.75 in ID SN : 12501289	(6) 3.65	207.41			
		203.76			
	(7) 88.84				
	(8) 3.58	114.92			
		111.34			
	(9) 65.93				
	(10) 7.59	45.41			
	(11) 6.84	37.82			
	(12) 2.83	30.98			
	(13) 26.90	28.15			
	(14) 1.25	1.25			

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 300	Run Start : 21-Feb-15 10:00	BRT Hrs : 100.50	Circ. Hrs : 82.00
Rig Run No. : 0300	Run End : 25-Feb-15 14:30	Hole Size (in) : 12.25	Oper. Hrs : 100.50

DRILLING DATA

Start Depth (ft) : 4994.00	Footage (ft) : 1991.00	Avg WOB (klb) : 35.0	Avg ROP (fph) : 40.00
End Depth (ft) : 6985.00	Avg Flow Rate (gpm) : 580	Avg TOB (ft-lb) : 8500	Avg SPP (psig) : 2500
Drilling Hrs (hr) : 81.500	Avg RPM (rpm) : 75	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.80	Viscosity (spqt) : 33.00	PV (cP) : 1	YP (lbf2) : 3.00
Chlorides (ppm) : 108000	Max Temp (degF) : 110.00	% Solids (%) : 1.90	% Sand (%) : 0.25
pH (pH) : 10.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0.92

MWD PERFORMANCE

Tool OD (in) : 8	Type : DGWD	Min. Inc. (deg) : 0.16	Min. Inc. Depth (ft) : 6715.00
Final Az. (deg) : 145.65	Max Op. Press. (psig) : 3351	Max. Inc. (deg) : 2.58	Max. Inc. Depth (ft) : 6148.00
MWD Real Time % : 70		MWD Recorded % : 100	

COMMENTS

RUN 300: DRILLED FROM 4994' MD TO 6985' MD. POOH TO RUN CASING. MWD FAILURE.

(1) 5 X HWDP
5.00 in OD / 3.00 in ID
(2) 6-1/2" Jar
6.50 in OD / 2.50 in ID
SN : Rental
(3) 9 X HWDP
5.00 in OD / 3.00 in ID
(4) X-Over Sub
8.00 in OD / 2.87 in ID
SN : Rig
(5) 12 X 6 1/2" Drill Collar
6.50 in OD / 3.00 in ID
SN : Rig
(6) X-Over Sub
8.00 in OD / 2.00 in ID
SN : Rig
(7) 3 X 8" Drill Collar
8.00 in OD / 2.75 in ID
SN : Rig
(8) X-Over Sub
7.56 in OD / 3.00 in ID
SN : DR29340
(9) MWD
(10) 12" Integral Blade Stabilizer
8.00 in OD / 2.87 in ID
SN : Knight
(11) Shock Sub
8.00 in OD / 2.88 in ID
SN : Rental
(12) Float Sub
8.00 in OD / 2.88 in ID
SN : DR5622
(13) 8" SperryDrill Lobe 6/7 - 4.0
stg
8.00 in OD / 5.25 in ID
SN : 11111965
(14) 12.25" Security 6 Blade PDC
8.63 in OD / 3.00 in ID
SN : 12624594



Length (ft)	Cumulative Length (ft)
	1021.07
(1) 151.77	
(2) 32.60	869.30
	836.70
(3) 273.95	
(4) 2.20	562.75
	560.55
(5) 355.03	
(6) 3.63	205.52
	201.89
(7) 88.84	
(8) 3.58	113.05
	109.47
(9) 65.93	
(10) 7.59	43.54
(11) 6.84	35.95
(12) 2.83	29.11
(13) 25.03	26.28
(14) 1.25	1.25

Non Mag Drill Collar
8.00 in OD / 3.25 in ID
SN : DR27164

HOS
8.00 in OD / 3.25 in ID
SN : 11230608
*[1]Positive Pulser - SN : 11504184
*[2]PCM Sonde 2.0" - SN :
12001046
*[3]PCG Sonde 2.0" - SN :
11681075
*[4]PCDC Sonde 2.0" - SN :
11902088

Non Mag Drill Collar
8.00 in OD / 3.25 in ID
SN : DR8377



Length (ft)	Sensor Dist From Bit (ft)
30.38	
	[2] 71.17
5.65	[3] 67.43
	[4] 62.45
29.90	

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 400	Run Start : 28-Feb-15 18:00	BRT Hrs : 24.00	Circ. Hrs : 2.00
Rig Run No. : 0400	Run End : 01-Mar-15 18:00	Hole Size (in) : 8.5	Oper. Hrs : 24.00

DRILLING DATA

Start Depth (ft) : 6985.00	Footage (ft) : 13.00	Avg WOB (klb) : 3.5	Avg ROP (fph) : 25.00
End Depth (ft) : 6998.00	Avg Flow Rate (gpm) : 350	Avg TOB (ft-lb) : 4200	Avg SPP (psig) : 600
Drilling Hrs (hr) : 0.309	Avg RPM (rpm) : 38	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.60	Viscosity (spqt) : 32.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 108000	Max Temp (degF) : 110.00	% Solids (%) : 1.70	% Sand (%) : 0.25
pH (pH) : 11.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0.92

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg) : 0.00	Min. Inc. Depth (ft) : 0.00
Final Az. (deg) : 0.00	Max Op. Press. (psig) : 3382	Max. Inc. (deg) : 0.00	Max. Inc. Depth (ft) : 0.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

RUN 400: DRILLED FROM 6985' MD TO 6998' MD. POOH TO PERFORM SQUEEZE JOB.

(1) 5" X 4" - 25.6# 7-1/4" X 3-1/2" 5-1/2 FH
5.00 in OD / 4.00 in ID

(2) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(3) Jar
6.50 in OD / 2.50 in ID
SN : RENTAL

(4) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(5) X-Over Sub
6.60 in OD / 2.87 in ID
SN : RIG

(6) 6 1/2" X 3" - 88.8# Drill Collar
6.50 in OD / 3.00 in ID

(7) X-Over Sub
6.60 in OD / 2.00 in ID
SN : DR7047

(8) MWD
(9) Integral Blade
6.75 in OD / 3.00 in ID
SN : IBS0004

(10) Float Sub
6.75 in OD / 3.00 in ID
SN : DR27570

(11) 6 3/4" SperryDrill Lobe 6/7 -
5.0 stg
6.75 in OD / 4.50 in ID
SN : 700-1246

(12) PDC
6.00 in OD / 2.00 in ID
SN : 12630428

Length
(ft)

Cumulative
Length (ft)

(1) 94.12

(2) 151.77

(3) 32.60

(4) 273.95

(5) 2.20

(6) 355.03

(7) 3.63

(8) 64.60

(9) 5.11

(10) 3.01

(11) 30.42

(12) 0.90

1017.34

923.22

771.45

738.85

464.90

462.70

107.67

104.04

39.44

34.33

31.32

0.90

Length
(ft)

Sensor Dist
From Bit
(ft)

29.52

6.04

29.04

[2] 66.93

[3] 62.92

[4] 57.94

NMDC

6.75 in OD / 2.85 in ID

SN : DR21192

HOS

6.75 in OD / 2.85 in ID

SN : 11633640

*[1]Positive Pulser - SN : 11413197

*[2]PCM Sonde 2.0" - SN :

11680873

*[3]PCG Sonde 2.0" - SN :

11293366

*[4]PCDC Sonde 2.0" - SN :

11833220

NMDC

6.75 in OD / 2.85 in ID

SN : DR8328

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 500	Run Start : 03-Mar-15 03:00	BRT Hrs : 31.00	Circ. Hrs : 4.00
Rig Run No. : 0500	Run End : 04-Mar-15 10:00	Hole Size (in) : 8.5	Oper. Hrs : 31.00

DRILLING DATA

Start Depth (ft) : 6998.00	Footage (ft) : 0.00	Avg WOB (klb) : 0.0	Avg ROP (fph) : 0.00
End Depth (ft) : 6998.00	Avg Flow Rate(gpm) : 55	Avg TOB (ft-lb) : 0	Avg SPP (psig) : 500
Drilling Hrs (hr) : 0.019	Avg RPM (rpm) : 0	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.40	Viscosity (spqt) : 30.00	PV (cP) : 1	YP (lbf2) : 3.00
Chlorides (ppm) : 100700	Max Temp (degF) : 111.24	% Solids(%) : 1.30	% Sand (%) : 0.25
pH (pH) : 10.00	Fluid Loss(mptm) : 100	% Oil (%) : 0.00	O:W : 0.93

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg): 0.00	Min. Inc. Depth (ft) : 0.00
Final Az. (deg) : 0.00	Max Op. Press. (psig) 3420	Max. Inc. (deg): 0.00	Max. Inc. Depth (ft) : 0.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

RUN 500: NO FOOTAGE DRILLED. FAILED FIT TEST. POOH TO PERFORM SQUEEZE JOB.

(1) 5" X 4" - 25.6# 7-1/4" X 3-1/2" 5-1/2 FH

5.00 in OD / 4.00 in ID

(2) 5" X 3" HWDP #49.3 - NC50(IF)

5.00 in OD / 3.00 in ID

(3) Jar

6.50 in OD / 2.50 in ID

SN : RENTAL

(4) 5" X 3" HWDP #49.3 - NC50(IF)

5.00 in OD / 3.00 in ID

(5) X-Over Sub

6.60 in OD / 2.87 in ID

SN : RIG

(6) 6 1/2" X 3" - 88.8# Drill Collar

6.50 in OD / 3.00 in ID

(7) X-Over Sub

6.60 in OD / 2.00 in ID

SN : DR7047

(8) MWD

(9) Integral Blade

6.75 in OD / 3.00 in ID

SN : IBS0004

(10) Float Sub

6.75 in OD / 3.00 in ID

SN : DR27570

(11) 6 3/4" SperryDrill Lobe 6/7 - 5.0 stg

6.75 in OD / 4.50 in ID

SN : 700-1246

(12) PDC

6.00 in OD / 2.00 in ID

SN : 12630428

Length
(ft)

Cumulative
Length (ft)

(1) 94.12

1017.34

(2) 151.77

923.22

(3) 32.60

771.45

(4) 273.95

738.85

(5) 2.20

464.90

(6) 355.03

462.70

(7) 3.63

107.67

(8) 64.60

104.04

(9) 5.11

39.44

(10) 3.01

34.33

(11) 30.42

31.32

(12) 0.90

0.90

Length
(ft)

Sensor Dist
From Bit
(ft)

29.52

6.04

29.04

[2] 66.93

[3] 62.92

[4] 57.94

NMDC

6.75 in OD / 2.85 in ID

SN : DR21192

HOS

6.75 in OD / 2.85 in ID

SN : 11633640

*[1]Positive Pulser - SN : 11413197

*[2]PCM Sonde 2.0" - SN :

11680873

*[3]PCG Sonde 2.0" - SN :

11293366

*[4]PCDC Sonde 2.0" - SN :

11833220

NMDC

6.75 in OD / 2.85 in ID

SN : DR8328

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 600	Run Start : 05-Mar-15 12:00	BRT Hrs : 54.00	Circ. Hrs : 38.00
Rig Run No. : 0600	Run End : 07-Mar-15 18:00	Hole Size (in) : 8.5	Oper. Hrs : 54.00

DRILLING DATA

Start Depth (ft) : 6998.00	Footage (ft) : 1692.00	Avg WOB (klb) : 25.0	Avg ROP (fph) : 60.00
End Depth (ft) : 8690.00	Avg Flow Rate(gpm) : 540	Avg TOB (ft-lb) : 8500	Avg SPP (psig) : 2500
Drilling Hrs (hr) : 28.355	Avg RPM (rpm) : 70	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.65	Viscosity (spqt) : 30.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 131500	Max Temp (degF) : 144.54	% Solids(%) : 1.20	% Sand (%) : 0.25
pH (pH) : 11.50	Fluid Loss(mptm) : 100	% Oil (%) : 0.00	O:W : 0:91

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg): 0.67	Min. Inc. Depth (ft) : 7466.00
Final Az. (deg) : 150.40	Max Op. Press. (psig) : 4518	Max. Inc. (deg): 1.34	Max. Inc. Depth (ft) : 7938.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

RUN 600: DRILLED FROM 6998' MD TO 8690' MD. TD PILOT HOLE.

(1) 5" X 4" - 25.6# 7-1/4" X 3-1/2" 5-1/2 FH

5.00 in OD / 4.00 in ID

(2) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(3) Jar
6.50 in OD / 2.50 in ID
SN : RENTAL

(4) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(5) X-Over Sub
6.60 in OD / 2.87 in ID
SN : RIG

(6) 6 1/2" X 3" - 88.8# Drill Collar
6.50 in OD / 3.00 in ID

(7) X-Over Sub
6.60 in OD / 2.00 in ID
SN : DR7047

(8) MWD
(9) Integral Blade
6.75 in OD / 3.00 in ID
SN : IBS0004

(10) Float Sub
6.75 in OD / 3.00 in ID
SN : DR27570

(11) 6 3/4" SperryDrill Lobe 6/7 - 5.0 stg
6.75 in OD / 4.50 in ID
SN : 700-1246

(12) PDC
6.00 in OD / 2.00 in ID
SN : 12630429

Length
(ft)

Cumulative
Length (ft)

(1) 94.12

1017.34

(2) 151.77

923.22

(3) 32.60

771.45

(4) 273.95

738.85

(5) 2.20

464.90

(6) 355.03

462.70

(7) 3.63

107.67

(8) 64.60

104.04

(9) 5.11

39.44

(10) 3.01

34.33

(11) 30.42

31.32

(12) 0.90

0.90

Length
(ft)

Sensor Dist
From Bit
(ft)

29.52

6.04

29.04

[2] 66.93

[3] 62.92

[4] 57.94

NMDC

6.75 in OD / 2.85 in ID

SN : DR21192

HOS

6.75 in OD / 2.85 in ID

SN : 11633640

*[1]Positive Pulser - SN : 11413197

*[2]PCM Sonde 2.0" - SN :

11680873

*[3]PCG Sonde 2.0" - SN :

11293366

*[4]PCDC Sonde 2.0" - SN :

11833220

NMDC

6.75 in OD / 2.85 in ID

SN : DR8328

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 700	Run Start : 10-Mar-15 02:30	BRT Hrs : 66.50	Circ. Hrs : 53.00
Rig Run No. : 0700	Run End : 12-Mar-15 21:00	Hole Size (in) : 8.5	Oper. Hrs : 66.50

DRILLING DATA

Start Depth (ft) : 7665.00	Footage (ft) : 1080.00	Avg WOB (klb) : 20.0	Avg ROP (fph) : 35.00
End Depth (ft) : 8745.00	Avg Flow Rate (gpm) : 450	Avg TOB (ft-lb) : 7200	Avg SPP (psig) : 1950
Drilling Hrs (hr) : 50.000	Avg RPM (rpm) : 20	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.45	Viscosity (spqt) : 28.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 49084	Max Temp (degF) : 133.00	% Solids (%) : 2.40	% Sand (%) : 0.25
pH (pH) : 10.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0.91

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg) : 2.85	Min. Inc. Depth (ft) : 7685.00
Final Az. (deg) : 2.29	Max Op. Press. (psig) : 4180.22	Max. Inc. (deg) : 71.02	Max. Inc. Depth (ft) : 8684.00
MWD Real Time % : 90		MWD Recorded % :	

COMMENTS

Pooh, due mud motor not diferential pressure read.
the mwd telemetry worked ok , not problem detection and Rerun 800

(1) 5" X 4.276" - 19.5# 7" X 3-1/2" 5
-1/2 FH
5.00 in OD / 4.28 in ID

(2) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(3) 5" X 4.276" - 19.5# 7" X 3-1/2" 5
-1/2 FH
5.00 in OD / 4.28 in ID

(4) MWD

(5) Float Sub
6.75 in OD / 3.00 in ID
SN : DR27570

(6) 6 3/4" SperryDrill Lobe 6/7 -
5.0 stg
6.75 in OD / 4.50 in ID
SN : 10954748

(7) PDC
6.00 in OD / 2.00 in ID
SN : 12459394

Length
(ft)

Cumulative
Length (ft)

2540.91

(1) 100.00

2440.91

(2) 456.00

1984.91

(3) 1888.71

96.20

(4) 64.16

32.04

(5) 3.01

29.03

(6) 28.13

0.90

(7) 0.90

Length
(ft)

Sensor Dist
From Bit
(ft)

29.08

6.04

29.04

NM Flex Collar
6.75 in OD / 2.85 in ID
SN : DR9275

HOS

6.75 in OD / 2.85 in ID
SN : 11633640

*[1]Positive Pulser - SN : 11671056

*[2]PCM Sonde 2.0" - SN :
12000942

*[3]PCG Sonde 2.0" - SN :
11293385

*[4]PCDC Sonde 2.0" - SN :
11297593

[2] 60.19

[3] 55.57

[4] 50.59

NMDC

6.75 in OD / 2.85 in ID
SN : DR8328

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 800	Run Start : 12-Mar-15 21:00	BRT Hrs : 23.00	Circ. Hrs : 5.37
Rig Run No. : 0800	Run End : 13-Mar-15 20:00	Hole Size (in) : 8.5	Oper. Hrs : 17.00

DRILLING DATA

Start Depth (ft) : 8745.00	Footage (ft) : 118.00	Avg WOB (klb) : 27.0	Avg ROP (fph) : 54.00
End Depth (ft) : 8863.00	Avg Flow Rate(gpm) : 450	Avg TOB (ft-lb) : 10000	Avg SPP (psig) : 2400
Drilling Hrs (hr) : 3.179	Avg RPM (rpm) : 70	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.50	Viscosity (spqt) : 28.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 49624	Max Temp (degF) : 137.70	% Solids (%) : 1.30	% Sand (%) : 0.01
pH (pH) : 11.00	Fluid Loss(mptm) : 100	% Oil (%) : 0.00	O:W : 0.82

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg): 72.93	Min. Inc. Depth (ft) : 8715.00
Final Az. (deg) : 0.35	Max Op. Press. (psig) : 4499	Max. Inc. (deg): 84.59	Max. Inc. Depth (ft) : 8810.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

Pooh, due landing hole, Next run Running RSS Ezpilot with P4M

(1) 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(2) 5" X 4.276" - 19.5# 7" X 3-1/2" 5
-1/2 FH
5.00 in OD / 4.28 in ID

(3) MWD

(4) Float Sub
6.75 in OD / 3.00 in ID
SN : DR27570

(5) 6 3/4" SperryDrill Lobe 6/7 -
5.0 stg
6.75 in OD / 4.50 in ID
SN : 1111848

(6) PDC
6.00 in OD / 2.00 in ID
SN : 12459368

Length
(ft)

Cumulative
Length (ft)

(1) 456.05

3385.77

2929.72

(2) 2833.82

95.90

(3) 64.16

(4) 3.01

31.74

(5) 27.83

28.73

(6) 0.90

0.90



Length
(ft)

Sensor Dist
From Bit
(ft)

29.08

6.04

29.04



NM Flex Collar
6.75 in OD / 2.85 in ID
SN : DR9275

HOS

6.75 in OD / 2.85 in ID
SN : 11633640

*[1]Positive Pulser - SN : 11671056

*[2]PCM Sonde 2.0" - SN :
12000942

*[3]PCG Sonde 2.0" - SN :
11293385

*[4]PCDC Sonde 2.0" - SN :
11297593

NMDC

6.75 in OD / 2.85 in ID
SN : DR8328

[2] 59.91

[3] 55.27

[4] 50.29

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 900	Run Start : 13-Mar-15 20:33	BRT Hrs : 6.97	Circ. Hrs : 0.28
Rig Run No. : 0900	Run End : 14-Mar-15 03:32	Hole Size (in) : 8.5	Oper. Hrs : 6.97

DRILLING DATA

Start Depth (ft) : 8863.00	Footage (ft) : 0.00	Avg WOB (klb) : 0.0	Avg ROP (fph) : 0.00
End Depth (ft) : 8863.00	Avg Flow Rate(gpm) : 457	Avg TOB (ft-lb) : 0	Avg SPP (psig) : 430
Drilling Hrs (hr) : 0.000	Avg RPM (rpm) : 0	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.60	Viscosity (spqt) : 28.00	PV (cP) : 3	YP (lbf2) : 1.00
Chlorides (ppm) : 49250	Max Temp (degF) : 81.41	% Solids(%) : 1.30	% Sand (%) : 0.01
pH (pH) : 11.00	Fluid Loss(mptm) : 100	% Oil (%) : 0.00	O:W : 0:92

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg): 0.00	Min. Inc. Depth (ft) : 0.00
Final Az. (deg) : 0.00	Max Op. Press. (psig) 0	Max. Inc. (deg): 0.00	Max. Inc. Depth (ft) : 0.00
MWD Real Time % : 90		MWD Recorded % : 10	

COMMENTS

R-900 Hcim Lower bus off, SPT Failed, tool not TIH, chango for Backup RLL hcim
Not ciruculation hs ,Not Drill hs,

(1) 9 stands 5" X 3" HWDP #49.3 -
NC50(IF)

5.00 in OD / 3.00 in ID

(2) 90 stds 5" X 4.276" DP

5.00 in OD / 4.28 in ID

(3) MWD

(4) 6-1/2" Float Sub

6.69 in OD / 2.88 in ID

SN : DR13104

(5) 8-1/4" Stabilizer

6.75 in OD / 2.75 in ID

SN : SD23038

(6) 6 3/4" SperryDrill Lobe 7/8 - 2.9
stg

7.00 in OD / 1.50 in ID

SN : 11633582

(7) 6-3/4" HOC TM

6.75 in OD / 2.82 in ID

SN : 11711382

*[1]TM Sonde

*[2]Locking Collar 3.87"

*[3]Hard Connect Long 175C

(8) 8-3/4" Inline Stabilizer

6.75 in OD / 2.82 in ID

SN : 11747918

(9) MWD

(10) 6-3/4" X-Over Sub

6.75 in OD / 2.25 in ID

SN : EQ11122129

(11) 6 3/4" X-Over Sub

6.75 in OD / 2.25 in ID

SN : 12531996

(12) MWD

(13) 6-3/4" Mounting Sub

6.75 in OD / 2.82 in ID

SN : 12648377

(14) 8-3/8" Inline Stabilizer

6.75 in OD / 2.82 in ID

SN : CP1182716

(15) EZ-Pilot 850 MK III+LE

6.75 in OD / 2.00 in ID

SN : 12446600

(16) 31" DL Sub

6.50 in OD / 2.75 in ID

SN : 12642760

(17) 8-1/2" MEG Sleeve stab

6.88 in OD / 2.75 in ID

SN : 12612054

(18) 8-1/2" PDC bit

6.00 in OD / 2.25 in ID

SN : 12514836

Length
(ft)

Cumulative
Length (ft)

Length
(ft)

Sensor Dist
From Bit
(ft)



(1) 818.07

(2) 8500.66

(3) 7.97

(4) 3.41

(5) 5.77

(6) 28.06

(7) 9.85

(8) 3.88

(9) 15.47

(10) 1.90

(11) 1.70

(12) 9.10

(13) 2.04

(14) 1.90

(15) 12.86

(16) 2.58

(17) 1.00

(18) 0.98

9432.33

8614.26

113.60

105.63

102.22

96.45

68.39

63.40

63.38

53.41

49.53

34.06

32.16

30.46

21.36

19.32

17.42

4.56

1.98

0.98

6-3/4" Downhole Screen

6.75 in OD / 2.38 in ID

SN : 675983

6 3/4" HCIM Collar

6.75 in OD / 1.92 in ID

SN : 11671397

*HCIM Insert

6 3/4" PWD

6.75 in OD / 1.91 in ID

SN : 11521022

6 3/4" DGR Collar

6.75 in OD / 1.92 in ID

SN : 10815230

*[1]DDS Insert

*[2]DGR Insert - SN : 11

Non Mag Flex Collar

6.75 in OD / 2.82 in ID

SN : CP1883825

*PCDC Sonde - SN : 12174337

7.97

6.75

4.40

4.32

9.10

[2] 55.00

0.00

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 1000	Run Start : 14-Mar-15 06:55	BRT Hrs : 22.41	Circ. Hrs : 2.39
Rig Run No. : 1000	Run End : 15-Mar-15 05:19	Hole Size (in) : 8.5	Oper. Hrs : 22.42

DRILLING DATA

Start Depth (ft) : 8863.00	Footage (ft) : 0.00	Avg WOB (klb) : 0.0	Avg ROP (fph) : 0.00
End Depth (ft) : 8863.00	Avg Flow Rate (gpm) : 550	Avg TOB (ft-lb) : 7135	Avg SPP (psig) : 1500
Drilling Hrs (hr) : 0.000	Avg RPM (rpm) : 50	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.60	Viscosity (spqt) : 28.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 49947	Max Temp (degF) : 123.76	% Solids (%) : 2.40	% Sand (%) : 0.01
pH (pH) : 13.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0.92

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg) : 0.00	Min. Inc. Depth (ft) : 0.00
Final Az. (deg) : 0.00	Max Op. Press. (psig) : 3855.28	Max. Inc. (deg) : 0.00	Max. Inc. Depth (ft) : 0.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

Pooh, due Ezpilot stop send TF Actual and ABI

(1) 9 stands 5" X 3" HWDP #49.3 -

NC50(IF)

5.00 in OD / 3.00 in ID

(2) 90 stds 5" X 4.276" DP

5.00 in OD / 4.28 in ID

(3) MWD

(4) 6-1/2" Float Sub

6.69 in OD / 2.88 in ID

SN : DR13104

(5) 8-1/4" Stabilizer

6.75 in OD / 2.75 in ID

SN : SD23038

(6) 6 3/4" SperryDrill Lobe 7/8 - 2.9

stg

7.00 in OD / 1.50 in ID

SN : 11633582

(7) 6-3/4" HOC TM

6.75 in OD / 2.82 in ID

SN : 11711382

*[1]TM Sonde

*[2]Locking Collar 3.87"

*[3]Hard Connect Long 175C

(8) 8-3/4" Inline Stabilizer

6.75 in OD / 2.82 in ID

SN : CP814906

(9) MWD

(10) 6-3/4" X-Over Sub

6.75 in OD / 2.25 in ID

SN : 1502661

(11) 6 3/4" X-Over Sub

6.75 in OD / 2.25 in ID

SN : 12396460

(12) MWD

(13) 6-3/4" Mounting Sub

6.75 in OD / 2.82 in ID

SN : 12648377

(14) 8-3/8" Inline Stabilizer

6.75 in OD / 2.82 in ID

SN : CP1182716

(15) EZ-Pilot 850 MK III+LE

6.75 in OD / 2.00 in ID

SN : 12446600

(16) 31" DL Sub

6.50 in OD / 2.75 in ID

SN : 12642760

(17) 8-1/2" MEG Sleeve stab

6.88 in OD / 2.75 in ID

SN : 12612054

(18) 8-1/2" PDC bit

6.00 in OD / 2.25 in ID

SN : 12514836

Length
(ft)Cumulative
Length (ft)

(1) 818.07

(2) 8500.66

(3) 7.97

(4) 3.41

(5) 5.77

(6) 28.06

(7) 9.85

(8) 3.88

(9) 13.40

(10) 1.89

(11) 1.66

(12) 9.15

(13) 2.04

(14) 1.90

(15) 12.86

(16) 2.58

(17) 1.00

(18) 0.98

9430.26

8612.19

111.53

103.56

100.15

94.38

66.32

63.87

63.31

51.34

47.46

34.06

32.17

30.51

21.36

19.32

17.42

4.56

1.98

0.98

Length
(ft)Sensor Dist
From Bit
(ft)

7.97

4.68

4.32

4.40

9.15

6-3/4" Downhole Screen

6.75 in OD / 2.38 in ID

SN : 675983

6 3/4" HCIM Collar

6.75 in OD / 1.92 in ID

SN : 11435374

*HCIM Insert - SN : 11435374

6 3/4" PWD

6.75 in OD / 1.91 in ID

SN : 12454365

6 3/4" DGR Collar

6.75 in OD / 1.92 in ID

SN : 11753333

*[1]DDS Insert

*[2]DGR Insert - SN : 11753333

Non Mag Flex Collar

6.75 in OD / 2.82 in ID

SN : CP1808308

*PCDC Sonde - SN : 11902054

40.96

[2] 36.63

26.00

BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 1100	Run Start : 15-Mar-15 08:07	BRT Hrs : 19.22	Circ. Hrs : 7.38
Rig Run No. : 1100	Run End : 16-Mar-15 03:21	Hole Size (in) : 8.5	Oper. Hrs : 19.23

DRILLING DATA

Start Depth (ft) : 8863.00	Footage (ft) : 9.00	Avg WOB (klb) : 0.0	Avg ROP (fph) : 20.00
End Depth (ft) : 8872.00	Avg Flow Rate (gpm) : 450	Avg TOB (ft-lb) : 12000	Avg SPP (psig) : 1650
Drilling Hrs (hr) : 0.092	Avg RPM (rpm) : 40	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.48	Viscosity (spqt) : 28.00	PV (cP) : 1	YP (lbf/ft ²) : 3.00
Chlorides (ppm) : 49947	Max Temp (degF) : 127.29	% Solids (%) : 2.40	% Sand (%) : 0.00
pH (pH) : 13.00	Fluid Loss (mptm) : 100	% Oil (%) : 0.00	O:W : 0:92

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg) : 4.59	Min. Inc. Depth (ft) : 7865.00
Final Az. (deg) : 0.35	Max Op. Press. (psig) : 4541.27	Max. Inc. (deg) : 84.10	Max. Inc. Depth (ft) : 8810.00
MWD Real Time % : 100		MWD Recorded % : 100	

COMMENTS

Pooh, due Ezpilo Failure,
in this run observed hi value to stick Slip during TIH with reaming section(7786 at 8863)

(1) 9 stands 5" X 3" HWDP #49.3 - NC50(IF)
5.00 in OD / 3.00 in ID

(2) 90 stds 5" X 4.276" DP
5.00 in OD / 4.28 in ID

(3) MWD

(4) 6-1/2" Float Sub
6.69 in OD / 2.88 in ID
SN : DR13104

(5) 8-1/4" Stabilizer
6.75 in OD / 2.75 in ID
SN : SD23038

(6) 6 3/4" SperryDrill Lobe 7/8 - 2.9 stg
7.00 in OD / 1.50 in ID
SN : 11633582

(7) 6-3/4" HOC TM
6.75 in OD / 2.82 in ID
SN : 11711382
*[1]TM Sonde
*[2]Locking Collar 3.87"
*[3]Hard Connect Long 175C

(8) 8-3/4" Inline Stabilizer
6.75 in OD / 2.82 in ID
SN : 11747918

(9) MWD

(10) 6-3/4" X-Over Sub
6.75 in OD / 2.25 in ID
SN : 1502661

(11) 6 3/4" X-Over Sub
6.75 in OD / 2.25 in ID
SN : 1233284

(12) MWD

(13) 6-3/4" Mounting Sub
6.75 in OD / 2.82 in ID
SN : 12117434

(14) 8-3/8" Inline Stabilizer
6.75 in OD / 2.82 in ID
SN : 1819178

(15) EZ-Pilot 850 MK III+LE
6.75 in OD / 2.00 in ID
SN : 12446601

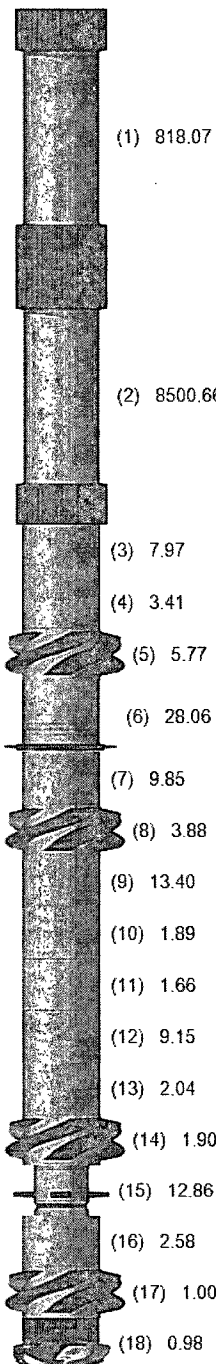
(16) 31" DL Sub
6.50 in OD / 2.75 in ID
SN : 12642761

(17) 8-1/2" MEG Sleeve stab
6.88 in OD / 2.75 in ID
SN : 12612053

(18) 8-1/2" PDC bit
6.00 in OD / 2.25 in ID
SN : 12514836

Length
(ft)

Cumulative
Length (ft)



Length
(ft)

Sensor Dist
From Bit
(ft)

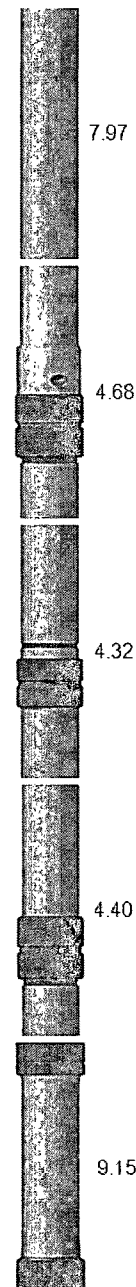
6-3/4" Downhole Screen
6.75 in OD / 2.38 in ID
SN : 675983

6 3/4" HCIM Collar
6.75 in OD / 1.92 in ID
SN : 11435374
*HCIM Insert - SN : 11435374

6 3/4" PWD
6.75 in OD / 1.91 in ID
SN : 12454365

6 3/4" DGR Collar
6.75 in OD / 1.92 in ID
SN : 11753333
*[1]DDS Insert
*[2]DGR Insert - SN : 11753333

Non Mag Flex Collar
6.75 in OD / 2.82 in ID
SN : CP1808308
*PCDC Sonde - SN : 11902054



BIT RUN SUMMARY

RUN TIME DATA

MWD Run : 1200	Run Start : 17-Mar-15 01:02	BRT Hrs : 26.97	Circ. Hrs : 11.02
Rig Run No. : 1200	Run End : 18-Mar-15 04:00	Hole Size (in) : 8.5	Oper. Hrs : 23.15

DRILLING DATA

Start Depth (ft) : 8872.00	Footage (ft) : 195.00	Avg WOB (klb) : 20.0	Avg ROP (fph) : 80.00
End Depth (ft) : 9067.00	Avg Flow Rate(gpm) : 550	Avg TOB (ft-lb) : 18000	Avg SPP (psig) : 1714
Drilling Hrs (hr) : 4.391	Avg RPM (rpm) : 80	Avg Bend (ft-lb) : NA	

MUD DATA

Mud Type : Fresh Water Gel			
Weight (ppg) : 9.50	Viscosity (spqt) : 29.00	PV (cP) : 3	YP (lbf2) : 1.00
Chlorides (ppm) : 48954	Max Temp (degF) : 148.47	% Solids(%) : 1.30	% Sand (%) : 0.10
pH (pH) : 11.00	Fluid Loss(mptm) : 100	% Oil (%) : 0.00	O:W : 0.93

MWD PERFORMANCE

Tool OD (in) : 6.75	Type : DGWD	Min. Inc. (deg): 85.80	Min. Inc. Depth (ft) : 8855.00
Final Az. (deg) : 1.18	Max Op. Press. (psig) : 4715.27	Max. Inc. (deg): 89.63	Max. Inc. Depth (ft) : 8976.00
MWD Real Time % : 80		MWD Recorded % : 100	

COMMENTS

Pooh, due PCDC send Not Response
during all time observed hi torque > 15000lbs
the tool lwd is rotation in section with hi dogles > 14.7
RPM with top drive is no possible increas > 100, RPM

(1) 9 stands 5" X 3" HWDP #49.3 - NC50(IF)

5.00 in OD / 3.00 in ID

(2) 90 stds 5" X 4.276" DP

5.00 in OD / 4.28 in ID

(3) MWD

(4) 6-1/2" Float Sub

6.69 in OD / 2.88 in ID

SN : DR13104

(5) 8-1/4" Stabilizer

6.75 in OD / 2.75 in ID

SN : SD23038

(6) 6-3/4" Hang-off Sub c/w Pulser

6.75 in OD / 2.81 in ID

SN : 11917190

(7) MWD

(8) 8 3/8" Inline Stabilizer (ILS)

6.75 in OD / 1.92 in ID

SN : 11827777

(9) MWD

(10) Geo-Pilot 7600

7.63 in OD / 1.49 in ID

SN : GP0850TL281

(11) 8-1/2" PDC bit

6.00 in OD / 2.25 in ID

SN : 12514836

Length
(ft)

Cumulative
Length (ft)

(1) 818.07

9397.93

(2) 8500.66

8579.86

(3) 7.97

79.20

(4) 3.41

71.23

(5) 5.77

67.82

(6) 9.10

62.05

(7) 17.55

52.95

(8) 2.00

35.40

(9) 9.21

33.40

(10) 23.21

24.19

(11) 0.98

0.98

Length
(ft)

Sensor Dist
From Bit
(ft)

7.97

6.85

50.88

4.32

6.38

[2] 41.22

9.21

28.60

6-3/4" Downhole Screen

6.75 in OD / 2.38 in ID

SN : 675983

6 3/4" HCIM Collar

6.75 in OD / 1.92 in ID

SN : 12454372

*HCIM Insert - SN : 12454372

6 3/4" PWD

6.75 in OD / 1.91 in ID

SN : 11222131

6 3/4" DGR Collar

6.75 in OD / 1.92 in ID

SN : 10845660

*[1] DDS Insert

*[2] DGR Insert - SN : 1222940

Non Mag Flex Collar

6.75 in OD / 2.82 in ID

SN : CP23114734

*PCDC Sonde - SN : 11638533

DIRECTIONAL SURVEY DATA

Tie-in

0.00

0.00

0.00

0.00

0.00 N

0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100)
436.00	0.85	242.89	435.98	1.48 S	2.89 W	-1.47	0.20
588.00	1.10	240.61	587.96	2.71 S	5.17 W	-2.70	0.16
771.00	1.15	237.12	770.93	4.57 S	8.25 W	-4.55	0.04
955.00	1.41	253.22	954.88	6.23 S	11.96 W	-6.19	0.24
1144.00	1.93	252.97	1,143.80	7.83 S	17.22 W	-7.77	0.27
1332.00	0.94	216.74	1,331.74	9.98 S	21.16 W	-9.92	0.69
1521.00	1.85	139.07	1,520.70	13.53 S	20.09 W	-13.46	1.00
1647.00	3.12	121.37	1,646.58	16.84 S	15.83 W	-16.79	1.17
1710.00	2.78	112.30	1,709.50	18.32 S	12.95 W	-18.28	0.91
1899.00	1.20	109.36	1,898.38	20.72 S	6.84 W	-20.70	0.84
2089.00	1.58	114.48	2,088.32	22.47 S	2.56 W	-22.46	0.21
2278.00	1.52	107.69	2,277.25	24.31 S	2.20 E	-24.32	0.10
2467.00	1.43	117.62	2,466.19	26.16 S	6.67 E	-26.18	0.14
2655.00	0.96	123.86	2,654.15	28.13 S	10.06 E	-28.16	0.25
2844.00	0.29	172.81	2,843.13	29.49 S	11.44 E	-29.53	0.43
3032.00	0.42	241.97	3,031.13	30.29 S	10.90 E	-30.33	0.22
3221.00	0.73	238.53	3,220.12	31.24 S	9.26 E	-31.27	0.16
3411.00	0.73	226.99	3,410.11	32.69 S	7.36 E	-32.71	0.08
3600.00	0.48	231.68	3,599.10	34.00 S	5.87 E	-34.01	0.13
3789.00	0.77	238.47	3,788.08	35.15 S	4.16 E	-35.16	0.16
3978.00	0.89	195.20	3,977.07	37.23 S	2.70 E	-37.24	0.33
4167.00	0.86	191.11	4,166.04	40.04 S	2.04 E	-40.05	0.04
4356.00	0.74	209.26	4,355.03	42.50 S	1.17 E	-42.51	0.15
4544.00	0.79	208.79	4,543.01	44.69 S	0.05 W	-44.69	0.02
4733.00	0.69	209.12	4,731.99	46.82 S	1.23 W	-46.82	0.05
4921.00	0.77	194.78	4,919.98	49.03 S	2.10 W	-49.02	0.11
5016.00	0.80	210.25	5,014.97	50.22 S	2.59 W	-50.21	0.22
5110.00	0.76	202.28	5,108.96	51.37 S	3.16 W	-51.36	0.12
5299.00	1.02	234.93	5,297.94	53.50 S	5.02 W	-53.48	0.30
5488.00	1.29	315.98	5,486.91	52.94 S	7.88 W	-52.92	0.80
5677.00	1.15	309.76	5,675.87	50.20 S	10.81 W	-50.17	0.10
5865.00	1.29	258.04	5,863.83	49.43 S	14.34 W	-49.39	0.57
6054.00	1.24	228.38	6,052.79	51.23 S	17.96 W	-51.18	0.34
6148.00	2.58	212.85	6,146.73	53.69 S	19.86 W	-53.62	1.52
6243.00	1.61	191.36	6,241.67	56.79 S	21.28 W	-56.72	1.30
6337.00	1.00	169.19	6,335.65	58.88 S	21.39 W	-58.82	0.83
6432.00	0.65	188.80	6,430.64	60.23 S	21.32 W	-60.16	0.47
6526.00	0.90	218.53	6,524.63	61.33 S	21.86 W	-61.26	0.49
6621.00	0.31	271.44	6,619.62	61.90 S	22.58 W	-61.83	0.79
6715.00	0.16	145.65	6,713.62	62.00 S	22.76 W	-61.93	0.45
6808.00	0.32	14.86	6,806.62	61.86 S	22.62 W	-61.79	0.47

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
6901.00	0.93	50.92	6,899.62	61.13 S	21.97 W	-61.07	0.76
7024.00	1.08	40.05	7,022.60	59.62 S	20.44 W	-59.55	0.19
7088.00	1.02	52.18	7,086.59	58.81 S	19.61 W	-58.75	0.36
7182.00	1.13	63.36	7,180.57	57.88 S	18.11 W	-57.82	0.25
7277.00	1.23	74.98	7,275.55	57.19 S	16.29 W	-57.14	0.27
7371.00	0.95	96.76	7,369.53	57.02 S	14.55 W	-56.98	0.53
7466.00	0.67	89.67	7,464.52	57.11 S	13.22 W	-57.07	0.31
7560.00	1.21	107.25	7,558.51	57.40 S	11.73 W	-57.37	0.65
7655.00	1.02	104.90	7,653.49	57.92 S	9.95 W	-57.89	0.20
7685.00	2.85	8.20	7,683.48	57.25 S	9.58 W	-57.22	10.45
7771.00	6.11	358.49	7,769.21	50.56 S	9.40 W	-50.53	3.88
7865.00	4.59	356.01	7,862.80	41.81 S	9.79 W	-41.78	1.63
7897.00	4.31	3.55	7,894.70	39.34 S	9.81 W	-39.31	2.03
7928.00	4.22	1.61	7,925.61	37.04 S	9.70 W	-37.00	0.54
7959.00	6.65	353.68	7,956.47	34.11 S	9.87 W	-34.08	8.21
7991.00	10.66	350.22	7,988.10	29.35 S	10.58 W	-29.31	12.63
8023.00	15.12	354.47	8,019.29	22.27 S	11.48 W	-22.23	14.22
8054.00	17.50	356.61	8,049.04	13.59 S	12.15 W	-13.55	7.93
8085.00	21.28	1.46	8,078.28	3.31 S	12.28 W	-3.27	13.22
8117.00	24.00	2.18	8,107.81	9.00 N	11.88 W	9.03	8.56
8148.00	25.84	3.02	8,135.92	22.05 N	11.29 W	22.08	6.04
8180.00	29.20	1.66	8,164.30	36.82 N	10.70 W	36.85	10.68
8211.00	33.96	0.13	8,190.70	53.04 N	10.46 W	53.08	15.58
8243.00	37.81	359.78	8,216.62	71.80 N	10.47 W	71.83	12.05
8274.00	40.94	359.17	8,240.58	91.46 N	10.66 W	91.49	10.17
8306.00	43.29	359.03	8,264.31	112.92 N	10.99 W	112.95	7.35
8337.00	45.88	359.33	8,286.39	134.67 N	11.30 W	134.71	8.38
8369.00	48.65	0.23	8,308.10	158.17 N	11.39 W	158.21	8.92
8400.00	51.06	1.26	8,328.09	181.87 N	11.08 W	181.90	8.18
8432.00	53.50	2.08	8,347.66	207.17 N	10.34 W	207.20	7.87
8464.00	55.99	1.79	8,366.14	233.28 N	9.46 W	233.31	7.81
8495.00	58.10	2.84	8,383.00	259.27 N	8.40 W	259.29	7.38
8526.00	60.19	2.80	8,398.90	285.85 N	7.09 W	285.87	6.74
8558.00	63.37	2.67	8,414.03	314.01 N	5.75 W	314.02	9.95
8589.00	65.17	2.33	8,427.49	341.90 N	4.54 W	341.92	5.89
8620.00	67.32	1.89	8,439.97	370.26 N	3.49 W	370.27	7.07
8652.00	69.58	1.98	8,451.73	400.00 N	2.49 W	400.01	7.06
8684.00	71.02	2.29	8,462.51	430.11 N	1.36 W	430.11	4.59
8715.00	72.93	2.26	8,472.11	459.56 N	0.20 W	459.56	6.15
8746.00	77.49	1.71	8,480.02	489.51 N	0.84 E	489.50	14.81
8778.00	81.35	1.42	8,485.90	520.95 N	1.70 E	520.94	12.09
8810.00	84.59	0.35	8,489.81	552.70 N	2.19 E	552.69	10.66
8855.00	85.80	360.00	8,493.58	597.54 N	2.32 E	597.53	2.80
8885.00	86.23	0.43	8,495.67	627.46 N	2.43 E	627.45	2.05
8915.00	87.16	0.60	8,497.40	657.41 N	2.70 E	657.40	3.15

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
8946.00	88.52	1.11	8,498.57	688.39 N	3.17 E	688.37	4.68
8976.00	89.63	1.18	8,499.05	718.38 N	3.77 E	718.36	3.71
9067.00	89.63	1.18	8,499.64	809.35 N	5.64 E	809.33	0.00

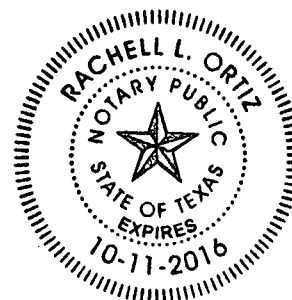
SURVEY FOOTER

SURVEYS CALCULATED USING SHORT COLLAR METHOD.
WELL ASSUMED VERTICAL AT WELLHEAD.
SURVEYS FROM 436'MD TO 8976'MD PROVIDED BY SPERRY DRILLING.
SURVEY AT 8976'MD IS PROJECTED TO TD AT 9067'MD.

SPERRY ENGINEERS: JARED ATWOOD, ROBERT SHINE, DAVID DUARTE

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 359.82 degrees (Grid)
- A total correction of 7.59 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 9,067.00 feet is 809.37 feet along 0.40 degrees (Grid)



WARRANTY

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SERVICE INTERRUPT REPORT

MWD Run Number	:300	Time / Date of Failure	:24-Feb-15 01:15
Rig Bit Number	:0300	Depth at Time of Failure (ft)	:6805
MWD Run Start Time / Date	:21-Feb-15 10:00	Lost Rig Hours	:1
MWD Run End Time / Date	:25-Feb-15 02:30		

RIG ACTIVITY

While drilling ahead in vertical hole, MWD detection started to get bad around midnight.

DESCRIPTION OF FAILURE

MO-XX-0902111817r300: At 00:00am midnight, detection started to get worse. By 6:00am the pulses were so weak or intermittent that it could not be decoded.

ACTION TAKEN

Decided to drill the stand down and troubleshoot. From there we swapped pressure transducers, swapped data rates, then swapped pumps in various combinations to see if the tool would come back to life.

It was decided by Operator to drill the remaining hole section without MWD.

**Updated - PCDC would not read on surface. MK10 pulser was hyper-extended when pulled out of flow tube. Failed the Pulser test.

OPERATION IMPACT**REASON FOR FAILURE**

**SERVICE INTERRUPT REPORT**

MWD Run Number	:900	Time / Date of Failure	:14-Mar-15 02:10
Rig Bit Number	:900	Depth at Time of Failure (ft)	:0
MWD Run Start Time / Date	:13-Mar-15 08:33	Lost Rig Hours	:0
MWD Run End Time / Date	:14-Mar-15 03:32		

RIG ACTIVITY

Shallow Pulset Test with P4M and EzPilot

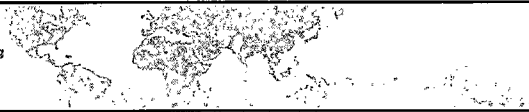
DESCRIPTION OF FAILURE

MO-XX-0902111817r900: during SPT the send lower bus OFF, all data sensor in lower bus sending error,

ACTION TAKEN

Read the tool in drill floor and observed same response the lower bus Hcim, only recovery data HCIM & DDS-r Hcim, observe high current in lower Bus
possible time delay has expired, and tool is ON in lower Bus.

OPERATION IMPACT**REASON FOR FAILURE**



SERVICE INTERRUPT REPORT

MWD Run Number	:1000	Time / Date of Failure	:14-Mar-15 11:15
Rig Bit Number	:1000	Depth at Time of Failure (ft)	:8000
MWD Run Start Time / Date	:14-Mar-15 06:55	Lost Rig Hours	:1
MWD Run End Time / Date	:15-Mar-15 05:19		

RIG ACTIVITY

TIH, to starting drill, with LWD and RSS Ezpilot

DESCRIPTION OF FAILURE

MO-XX-090211817r1000:Ezpilot, not sending new TF actual, and not sending ABI

ACTION TAKEN

Send with Geospan, command, reset sensor, and sending mode Sw to HCIM, but Ezpilot send same data.

OPERATION IMPACT

REASON FOR FAILURE

**SERVICE INTERRUPT REPORT**

MWD Run Number	:1100	Time / Date of Failure	:16-Mar-15 11:00
Rig Bit Number	:1100	Depth at Time of Failure (ft)	:8869
MWD Run Start Time / Date	:15-Mar-15 08:07	Lost Rig Hours	:1
MWD Run End Time / Date	:16-Mar-15 03:21		

RIG ACTIVITY

Reaming section and Star drill, lateral hole

DESCRIPTION OF FAILURE

MO-XX-0902111817r1100: Ezpilot Non send data TF, INC and GT,

ACTION TAKEN

Drill only 9 ft and send command Successful with Geospan , but Ezpilot send same value to Inc GT & TF,
Stop Circulation and POOH.

OPERATION IMPACT**REASON FOR FAILURE**

SERVICE INTERRUPT REPORT

MWD Run Number	:1200	Time / Date of Failure	:17-Mar-15 07:00
Rig Bit Number	:1200	Depth at Time of Failure (ft)	:9067
MWD Run Start Time / Date	:17-Mar-15 01:02	Lost Rig Hours	:79
MWD Run End Time / Date	:18-Mar-15 04:00		

RIG ACTIVITY

Drilling ahead with rotary steerable in the lateral.

DESCRIPTION OF FAILURE

MO-XX-0902111817r1200: After the last connection, we attempted to take a survey but the PCDC sent "No Response" in the data values for G, B and toolface. Without these values we were unable to take the survey.

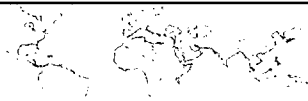
ACTION TAKEN

We recycled the pumps to attempt the survey again with the same results. Next, we sent a downlink to take a survey without recycling the pumps and had the same results again. After that, we sent a downlink to switch lists in order to reset the HCIM. We had the same result. Next, we sent another downlink to reset all sensors and took another survey but had the same results. We took another survey without rotating in order to force the GeoPilot to get toolfaces from the PCDC but we observed continual "No Response" messages before shutting the pumps down. The customer then made the decision to POOH and lay tools down.

OPERATION IMPACT**REASON FOR FAILURE**

HALLIBURTON

Sperry Drilling



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Phone 281.986.4400
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