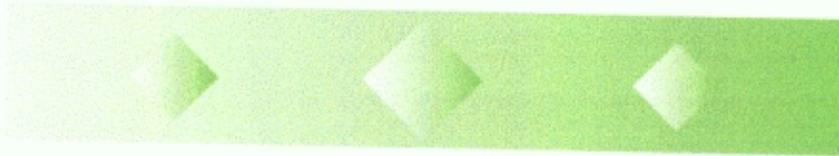


APPENDIX 6

Coring Summary (DPI), Rock Island #4-H



DIAMOND PRODUCTS INTERNATIONAL

Coring Summary

PREPARED FOR: FRANK LIM

Company: U.P.R.

Well: Rock Island Federal Unit # 4-U

Sec. 4- 19N-97W

Sweetwater County, Wyoming

Prepared by: Dave Chittim
March 23, 1999

Pre-Job Preparation

Corebit: 6 ½" X 2 5/8" DPI403 Serial Number: 1962778

Special consideration was given for the abrasive fracture formation, high mud weights, and extra wear to the shoulder and gage of the bit associated with a horizontal application. We chose 9 stones per carat, versus 12 stones to increase penetration in the high 15 lb drilling fluid. The best quality natural diamonds were used (J stones) for their abrasion resistance. A T.F.A. of .45 was designed to provide a 250 p s i pressure for proper bit cleaning and cooling. This would also give us a large enough pressure drop so we could adequately monitor the standpipe for fluctuations, which might indicate a jammed core barrel.

Core Barrel – Outer Tube Stabilization

We selected 6 ¼" O.D. to facilitate the drifting of the dog leg section and still provide adequate bit stabilization. Straight blades were used with a 60-degree bevel on the top and bottom of the blade. This was designed to create the least amount of resistance as the core assembly drilled or slid through the formation horizontally. To control junk slot bounce, we used 6 blades – each 1 ½" wide to reduce the gap between blades and maintain more well bore contact.

Inner Barrel Stabilization or Support

In a horizontal application the natural tendency is for the inner barrel to lay or rub against the I.D. of the outer barrel. This of course, can create a core recovery problem since the inner barrel is rotating. To eliminate this problem we selected a grease lube-sealed bearing assembly versus the conventional mud lube-single thrust bearing. Our grease lube assembly utilizes 6 wheel bearings which provides a stiffer, smoother action. For the bottom support, we used a roller bearing guide that is integrated into the I.D. of the outer barrel bit sub stabilizer.

Aluminum Inner Barrel

The aluminum inner barrel was selected for the purpose of core containment and transport. It has a sturdy one-piece construction and can also assist with core recovery by providing a low friction, co-efficient in the I D. The core catcher spacing distance from the I.D. of the bit was increased an additional 5/8" to account for the thermal expansion with a bottom hole temperature of 265 degrees Fahrenheit.

Core Catcher Assembly

A conventional split ring core catcher was used in conjunction with a scribe shoe. The purpose of the scribe knives were to aid in core recovery, and to simplify core analysis. A scribe knife can, in certain cases, keep the core or inner barrel from rotating. The scribe mark is also helpful in matching or piecing fracture core samples together.

CORING OPERATIONS SUMMARY

Core # 1

Date: 1/16/99; Saturday

**Core Engineers: Ronnie Williams
Dave Chittim**

Hours 03 30 – 07 00	3 ½ hours, lay down directional tools
07 00 – 08 00	NOTE Roller cone bit has broken buttons and 1/8" out of gage 1 hour, make up core barrel and float subs
08 00 – 15 00	7 hours, trip in hole for core # 1
15 00 – 16 00	1 hour, wash and ream – 50' to bottom
16 00 – 17 45	1 ¾ hour, coring from 15,424' – 15, 454 8' – 30 8 feet – ROP 17 6 f p h * Parameters
17 45 – 19 00	1 ¼ hour, circulate
19 00 – 22 00	3 hours, circulate and condition hole
22 00 – 04 30	Blow down kelly for trip out

1/17/99; Sunday

04 30 – 07 00	2 ½ hours, lay down core, 30 8' recovered – wait on orders to cut core # 2 Hole inclination Start – 85 6 degrees Stop 85 7 degrees
---------------	--

*Before reaching bottom wash approximately 50' - tag bottom-standpipe pressure, increased 200 – 250 psi , indicating bottom Pick-up approximately 2 feet to circulate ½ hour to clean the hole Lowered core bit to bottom and applied 2,000 WOB, 60 RPM with top drive to slowly form bit profile to formation Standpipe pressure reading 1800 psi off bottom – 2100 psi on bottom, flow rate 65 spm – 180 GPM Increase WOB up to 10,000 – 12,000 and maintained for entire core due to excellent ROP and steady standpipe pressure When coring operations were stopped, we could not see a core break when bit was raised off bottom At the surface, core barrel was pulled completely out of the hole to examine core bit and core condition in catcher There was a 2-inch piece of solid core extending out of the core bit Saw aluminum into 3 feet sections and cap with rubber end caps

When examining the core bit, there was notable damage to the shoulder and shank of the bit The broken matrix and gouges in the metal shank would support junk in hole This was probably from small pieces of carbide inserts from previous roller cone bit runs The damage to the core bit was not extensive enough to warrant running a new bit

Core # 2

1/17/99; Sunday

Core Engineer: Ronnie Williams

Hours 9 00AM Running back in the hole for core # 2

09 00 – 14 30 Tripping in

14 30 – 15 00 Wash 70' to bottom

15 00 – 15 30 Clean bottom of hole

15 30 – 18 00 Coring – 2 ½ hours from 15,454' – 15,482' – 28 feet – ROP 11 2 f p h

17 45 – Parameters – 12,000/14,000 WOB – 60 RPM - 180 GPM – 1800 SPP

Depth 15,481' – ROP slows down to 22 minutes – Cut next foot with slight standpipe pressure fluctuation Core Engineer decides that barrel is jammed

18 00 Pickup off bottom looking for breakoff – no break – in fractured formation

18 00 – 22 00 Circulate bottoms up before tripping out of the hole

1/18/99; Monday

22 00 – 04 00 Trip out

04 00 – 05 30 Pull inner barrel and lay down aluminum on cat walk Saw core into 6 feet lengths Instructions were given to lay down core barrel and drill ahead Core bit condition same as core # 1 Cut 28', Recovered 26' Hole inclination Start – 86 7 degrees Stop 86 7 degrees

Core # 3

1/21/99; Thursday

Core Engineer: Ronnie Williams

12 00 Notified by UPR to return to the rig for core # 3

15 00 Core Engineer arrived at the rig

16 30 Out of hole to pick up core tools – NOTE Roller cone ¼" out of gage

16 30 – 17 30 Rig up core barrel

Core # 3 Cont'd

17 30 – 21 00 Tripping in the hole

21 00 – 24 00 Reaming 120' out of gage hole, the last 30' feet took 1 ¾" hours to ream to bottom

1/22/99; Friday

24 00 – 02 00 Coring – 2 hours - 15,931' – 15,952' – 21 feet – ROP 10.5 f p h
Parameters 12,000/14,000 WOB – 60 RPM – 180 GPM – 1,800 SPP

02 00 – 02 15 Coring penetration rate stopped – no standpipe fluctuation, Core Engineer Ronnie Williams has determined that barrel is jammed Picked up for core stool break – nothing seen

02 15 – 06 30 Circulate bottoms up before tripping

06 30 – 13 00 Tripping out of the hole

13 00 – 14 30 Lay down core Recovered 20.4 feet Saw aluminum into 6-foot sections and cap with rubber end pieces

14 30 – 15 30 Disassemble core tools

16 00 Core Engineer released from location
Core bit condition Poor (shoulder and gage heavily worn) Probably due to excessive reaming
Hole inclination Start 85.6 degrees Stop 85.7 degrees

We were told that there maybe additional core cut at approximately 17,000' Although, the well was drilled to total depth with no further core cut



CORE AND DRILL BIT RECORD

World Headquarters
 DPI
 15955 West Hardy, Suite 300
 Houston, TX 77060
 Tel: 281-774-9400 Fax: 281-774-9412

Company	Union Pacific Resources			Engineer	Ronnie Williams		Date	1/16/99		
Well	Rock Is. Fed.4 - H	Field	Rock Island	# 1 Pump	Emsco 1300	Size	5 X 12			
County	Sweetwater	State	Wyoming	# 2 Pump	Emsco 1300	Size	5 X 12			
Co. Core #	1	DPI Core #	1	Cut	30.8	Recovered	30.8	Drill Pipe	5"-19.5# 4" 15#	
Bit #	962778	Type	DPI - 403	Size	6 1/2 X 2 5/8		Collar OD	None	I D	
Barrel #	412	Size	4 3/4 X 2 5/8 x 30'	Mud lb/gal	14.9	P V	36	Mud Type	Polymer	
Contractor	Parker	Rig #	235	Hole Size	6 1/2"	Casing	7 3/4" @ 15,015			

	Depth	Time	Min/Ft	Formation	Weight	RPM	SPM	GPM	P.S.I	PSI Drop	Torque
Start	15424	4:00		Frontier	10-12000	60	65	180	2100	300	
1	25		10	Sand							
2	26		3								
3	27		4								
4	28		3								
5	29	4:24	4		10-12000	60	65	180	2100	300	
6	30		1								
7	31		3								
8	32		2								
9	33		3								
10	15434	4:34	1		10-12000	60	65	180	2100	300	
11	35		3								
12	36		2								
13	37		1								
14	38		5								
15	39	4:47	2		10-12000	60	65	180	2100	300	
16	40		6								
17	41		4								
18	42		3								
19	43		4								
20	15444	5:06	2		10-12000	60	65	180	2100	300	
21	45		4								
22	46		3								
23	47		3								
24	48		3								
25	49	5:22	3		10-12000	60	65	180	2100	300	
26	50		3								
27	51		3								
28	52		4								
29	53		3								
30	15454.8	5:45	10		10-12000	60	65	180	2100	300	
31											
Total Core Time										1 HR 45 MIN	

Additional Coring Services

Hole Angle: Start 86.7 Degrees - End 86.7 Degrees. Ran Aluminun
 Inner Barrel, Roller Guide & Grease Lubricated Bearing Assembly.



CORE AND DRILL BIT RECORD

World Headquarters
 DPI
 15955 West Hardy, Suite 300
 Houston, TX 77060
 Tel: 281-774-9400 Fax: 281-774-9412

Company	Union Pacific Resources		Engineer	Ronnie Williams		Date	1/17/99		
Well	Rock Is. Fed.4 - H	Field	Rock Island	# 1 Pump	Emsco 1300	Size	5 X 12		
County	Sweetwater	State	Wyoming	# 2 Pump	Emsco 1300	Size	5 X 12		
Co. Core #	2	DPI Core #	2	Cut	28	Recovered	26	Drill Pipe	5"-19.5# & 4" 15#
Bit #	962778	Type	DPI - 403	Size	6 1/2 X 2 5/8	Collar OD	None 1 D		
Barrel #	412	Size	4 3/4 X 2 5/8 x 30'	Mud lb/gal	14.9	P V	36	Mud Type	Polymer
Contractor	Parker	Rig #	235	Hole Size	6 1/2"	Casing	7 3/4" @ 15,015		

	Depth	Time	Min/Ft	Formation	Weight	RPM	SPM	GPM	P.S.I	PSI Drop	Torque
Start	15454	3:23		Frontier	10000	60	65	180	1900	300	
1	55		9	Sand							
2	56		2								
3	57		3								
4	58		7								
5	59	3:48	4		10000	60	65	180	1900	300	
6	60		4								
7	61		5								
8	62		3								
9	63		6								
10	15464	4:09	3		10000	60	65	180	1900	300	
11	65		3								
12	66		2								
13	67		3								
14	68		8								
15	69	4:29	4		10000	60	65	180	1900	300	
16	70		3								
17	71		8								
18	72		4								
19	73		7								
20	15474	4:55	4		10000	60	65	180	1900	300	
21	75		7								
22	76		7								
23	77		5								
24	78		6								
25	79	5:30	10		10000	60	65	180	1900	300	
26	80		10								
27	81		22								
28	15482	6:07	5		10000	60	65	180	1900	300	
29			Core Barrel Jammed								
30											
Total Core Time										2 HRS 44 MIN	

Additional Coring Services

Hole Angle: Start 86.7 Degrees - End 86.7 Degrees. Ran Aluminun
Inner Barrel, Roller Guide & Grease Lubricated Bearing Assembly.



CORE AND DRILL BIT RECORD

World Headquarters
 DPI
 15955 West Hardy, Suite 300
 Houston, TX 77060
 Tel: 281-774-9400 Fax: 281-774-9412

Company	Union Pacific Resources		Engineer	Ronnie Williams		Date	1/22/99		
Well	Rock Is. Fed.4 - H	Field	Rock Island	# 1 Pump	Emsco 1300	Size	5 X 12		
County	Sweetwater	State	Wyoming	# 2 Pump	Emsco 1300	Size	5 X 12		
Co. Core #	3	DPI Core #	3	Cut	21	Recovered	20.4	Drill Pipe	5"-19.5# & 4" 15#
Bit #	962778	Type	DPI - 403	Size	6 1/2 X 2 5/8	Collar OD	None ID		
Barrel #	412	Size	4 3/4 X 2 5/8 x 30'	Mud lb/gal	14.7	P V	42	Mud Type	Polymer
Contractor	Parker	Rig #	235	Hole Size	6 1/2"	Casing	7 3/4" @ 15,015		

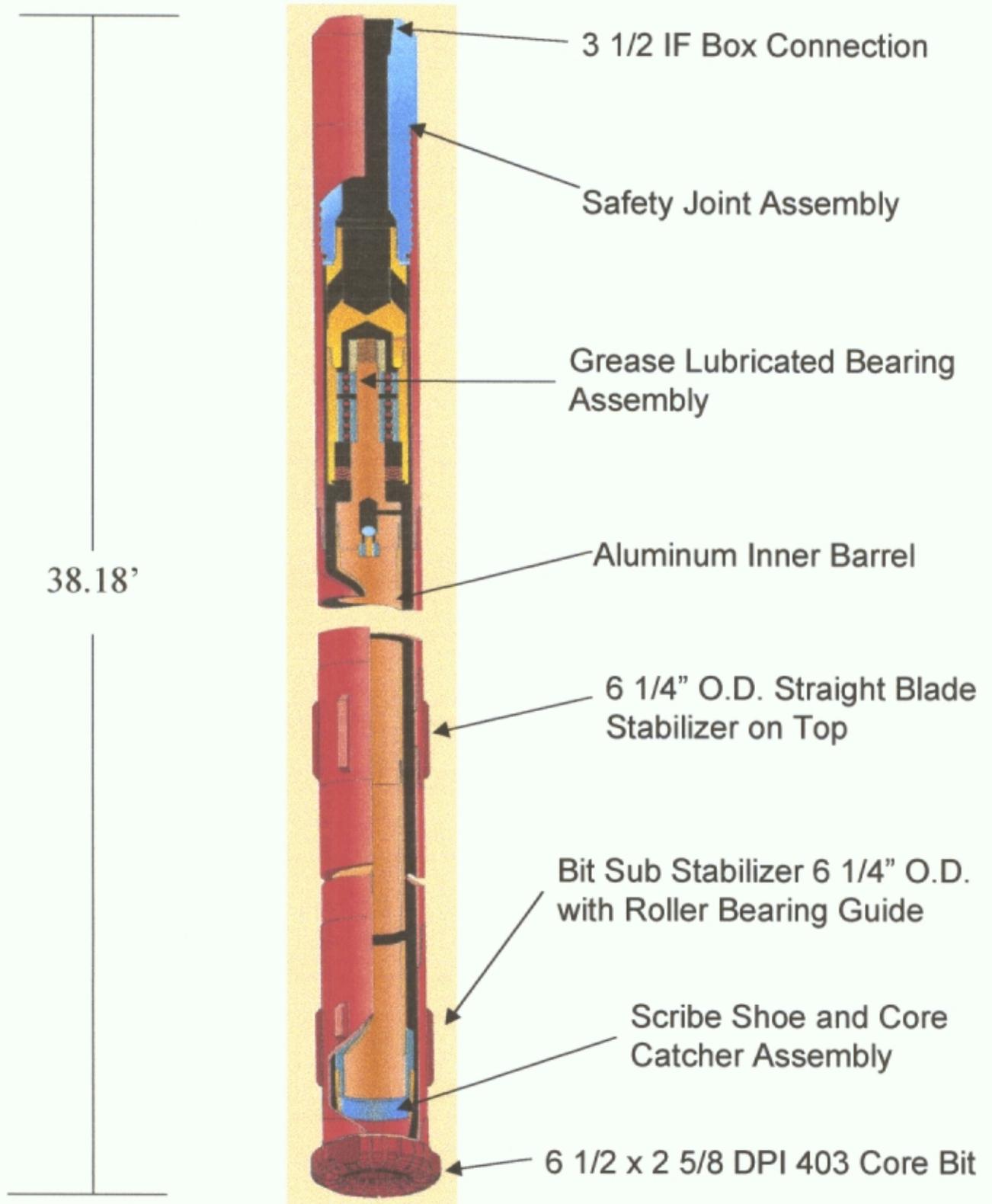
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Start	15931	12:05		Frontier	12-14000	60	65	180	1800	300	
1	32		9	Sand							
2	33		6								
3	34		3								
4	35		2								
5	36	12:29	4		12-14000	60	65	180	1800	300	
6	37		5								
7	38		4								
8	39		5								
9	40		4								
10	15941	12:51	4		12-14000	60	65	180	1800	300	
11	42		4								
12	43		7								
13	44		4								
14	45		5								
15	46	1:20	9		12-14000	60	65	180	1800	300	
16	47		5								
17	48		10								
18	49		6								
19	50		8								
20	51		6		12-14000	60	65	180	1800	300	
21	15952	2:02	7								
22				Core Barrel Jammed							
23											

Total Core Time	1 HR 47 Min
-----------------	-------------

Additional Coring Services Hole Angle: Start 85.6 Degrees - End 85.7 Degrees. Ran Aluminum Inner Barrel with Roller Guides & Grease Lubricated Bearing Assembly.

4 3/4in x 2 5/8in x 30' Series 77 Core Barrel

2 5/8in Aluminum Inner Barrel

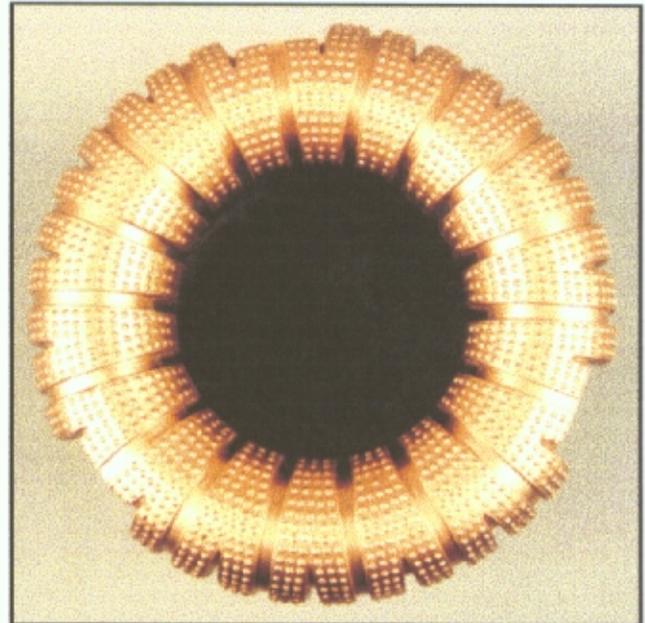
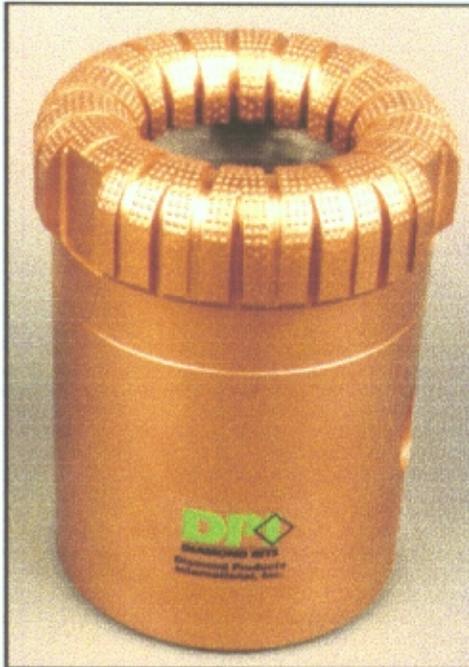


DPI 403

DPI

**DIAMOND PRODUCTS
INTERNATIONAL**

6 1/2 in x 2 5/8 in
IADC M812



Application

Designed for hard dense formations with high compressive strength and medium abrasion.

Features

- ◆ Durable round profile.
- ◆ Circle set matrix body.
- ◆ Ridged setting is available.
- ◆ This core bit can be set with 6, 9, 12, or 15 SPC range natural diamonds.
- ◆ Various diamond types & sizes can be used, depending on the hardness and abrasiveness of the formation.

Core Bit Specifications

Bit Profile	Round
Bit Body	Matrix
Fluid Design	Feeder Collector
Diamond Type	SP
Diamond Size	12 SPC
Gage Protection	Natural Diamonds

Operating Parameters

Flow Rate Range (GPM)	200 - 330
RPM Range	50 - 140
Weight on Bit (x 1000)	5 - 25 lbs.

Operating Parameters Vary With Different Formations And Drilling Conditions. Please Consult With Your Local DPI Sales Representative For Specific Recommendations.



Patents Pending

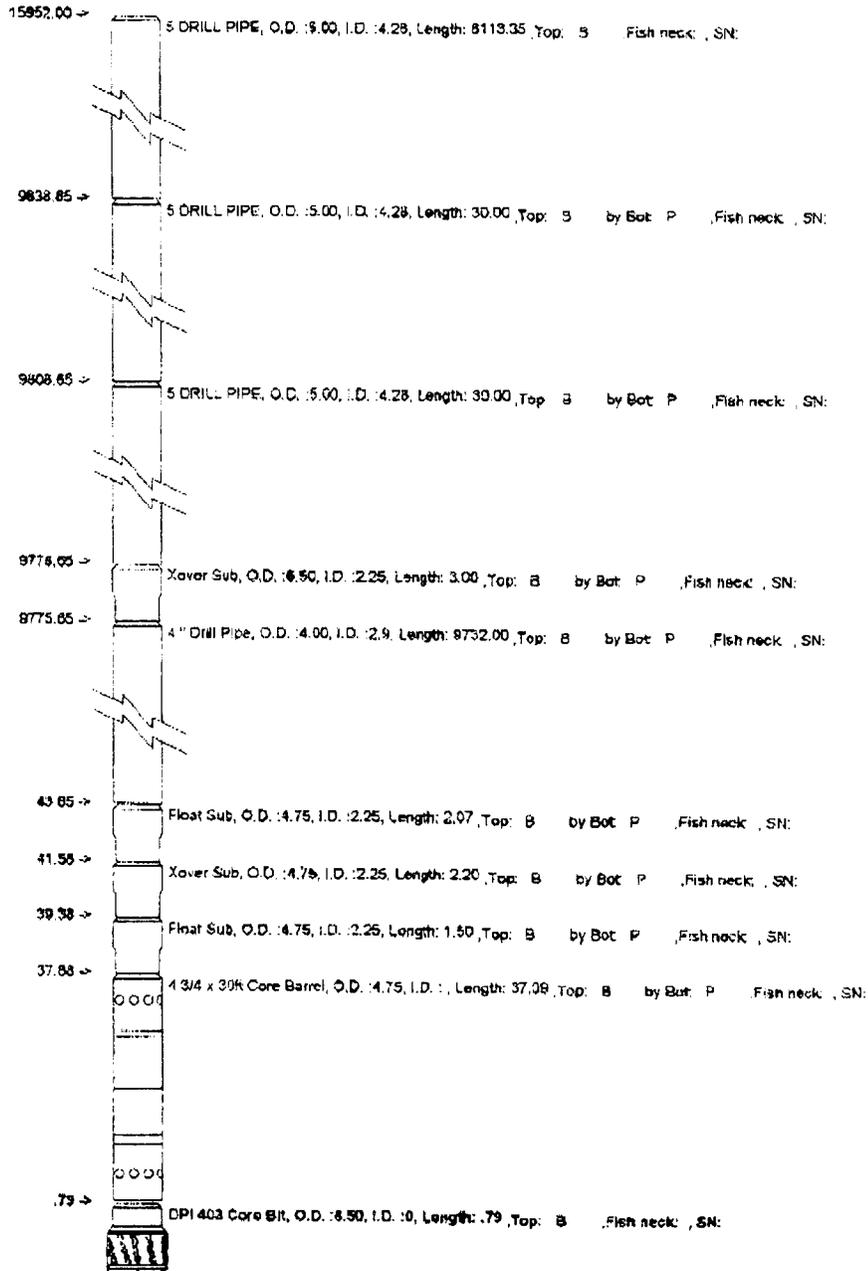


Company UPR
 Company Rep FRANK LIM
 Contractor PARKER
 Lease/Well Rock Island Federal Unit 4-H
 Location LAND
 County/Blk SWEETWATER
 Country USA

Rig Name
 State
 Dir. Co.
 Drillers
 Tshp/Sec/Rng
 Field

PARKER 235
 WYOMING
 CORING RUN

SHEET 1



DPI HYDRAULICS 1 800 969 2487

March 23, 1999
 TOTAL P. 02

File name: S:\BIA\HYD\LAND\WY\ORING\SWEETWATER\ROCKSLA\...



HYDRAULICS - Well Information

BHA #: 1

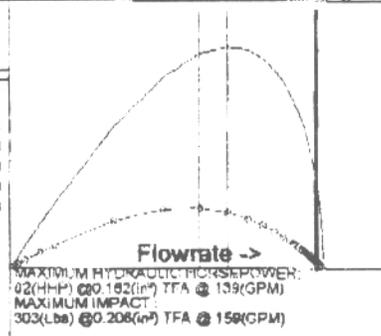
Company UPR
 Company Rep FRANK LIM
 Contractor PARKER
 Lease/Well Rock Island Federal Unit 4-H
 Location LAND
 County/Bk SWEETWATER
 Country USA

Rig Name PARKER 236
 State WYOMING
 Dir. Co. CORING RUN
 Drillers
 Tshp/Sec/Rng
 Field

Annular Geometry

Annular Section	From Depth (Ft)	Depth To (Ft)	Section Drop (PSI)	Annular Velocity (Ft/Min)	Flow Type
6.500-> 4 3/4 x 30R Core Barrel	15951.21	15914.12	2.67	279.80	Lam
6.500-> 4" Drill Pipe	15908.35	15454.00	17.41	209.70	Lam
7 5/8 6.630-> 4" Drill Pipe	15454.00	9517.00	208.06	196.90	Lam
11 3/4 10.690-> 4" Drill Pipe	9517.00	6176.35	37.26	56.13	Lam
11 3/4 10.690-> 5 DRILL PIPE	6173.35	6143.35	.35	61.81	Lam
11 3/4 10.690-> 5 DRILL PIPE	6143.35	6113.35	.35	61.81	Lam
11 3/4 10.690-> 5 DRILL PIPE	6113.35	.00	71.65	61.81	Lam

Bit Optimization



Casing Profile

Size	lb/Ft	O.D.	I.D.	Top	Set Depth
11 3/4	65.00	12.75	10.68	.00	9517.00
7 5/8	39.00	8.50	6.63	9517.00	15454.00

BitType DPI 403 Core Bit
 MFG. DPI IADC #
 BK # 0 Tol. Hrs. 0
 Rerun 0 Gauge
 Serial # TFA 1.000 in²
 O.D. # JETS 0
 JETS :

Hydraulic Summary

Flowrate (GPM)	Pressure Drop (PSI)	Depth Hole (Ft)	Mud Weight (PPG)	Bit Drop (PSI)	ECD (PPG)	HHP HHP	Impact (Lbs)	Nozzle Velocity (Ft/Sec)	HSI HHP/in ²	Surface Drop (PSI)
225	2100	15952	14.90	69	15.31	9	124	71.87	.27	76

PipeDrop :1467 | Motor Drop : | MWD Drop :150 | PV :36.00 | YP :14.00 | Bouyancy Factor :0.77 |
 Hole Size :6.50 | Ann. Drop :338 | %Motor Loss : | Total Wt. :195958 lb|

BHA Detail

#	Description	O.D.	I.D.	Length	Pipe Drop	Ann. Drop	Total	BF Wt.
1	DPI 403 Core Bit	6.500	.000	.79	69.22	.00	69.22	0.00
2	4 3/4 x 30ft Core Barrel	4.750	.000	37.09	150.00	2.67	152.67	0.00
3	Float Sub	4.750	2.250	1.50	.71	.11	.81	0.00
4	Xover Sub	4.750	2.250	2.20	1.04	.16	1.19	0.00
5	Float Sub	4.750	2.250	2.07	.97	.15	1.12	0.00
6	4" Drill Pipe	4.000	2.900	9732.00	1335.00	262.73	1597.73	110445.70
7	Xover Sub	6.500	2.250	3.00	1.41	.05	1.46	0.00
8	5 DRILL PIPE	5.000	4.280	30.00	.62	.35	.97	415.55
9	5 DRILL PIPE	5.000	4.280	30.00	.62	.35	.97	415.55
10	5 DRILL PIPE	5.000	4.280	6113.35	126.47	71.65	198.13	84680.70

