SUSPENSE

ENGINEER

ABOVE THIS LINE FOR DIVISION USE ON

## NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -1220 South St. Francis Drive, Santa Fe, NM 87505



# **ADMINISTRATIVE APPLICATION CHECKLIST**

	ation Acronyms [NSL-Non-Star [DHC-Dowr [PC-Po	dard Location] [NSP-Non-Standard thole Commingling] [CTB-Lease Commingling]	THE DIVISION LEVEL IN SANTA FE  Proration Unit] [SD-Simultan  pmmingling] [PLC-Pool/Lea  Storage] [OLM-Off-Lease N  Fressure Maintenance Expa  I-Injection Pressure Increase	eous Dedication] se Commingling] leasurement] insion]
[1]	TYPE OF AP [A]	PLICATION - Check Those Which A Location - Spacing Unit - Simultane  NSL NSP SD		
	Check [B]	One Only for [B] or [C]  Commingling - Storage - Measurem  DHC CTB PLC		LM
	[C]	Injection - Disposal - Pressure Locres  WFX PMX SWD		PR
	[D]	Other: Specify		-
[2]	NOTIFICAT [A]	ION REQUIRED TO: - Check Those  Working, Royalty or Overriding	e Which Apply of Does No	Apply  Service  Control
	[B]	Offset Operators, Leaseholders	or Surface Owner	WEL DEPTHS
	[C]	Application is One Which Req	uires Published Legal Notice	WEL DEPTHS
	[D]	Notification and/or Concurrent U.S. Bureau of Land Management - Commissio	Approval by BLM or SLO ner of Public Lands, State Land Office	·
	[E]	For all of the above, Proof of N	otification or Publication is A	ttached, and/or,
	[F]	Waivers are Attached		
[3]		CURATE AND COMPLETE INFO ATION INDICATED ABOVE.	RMATION REQUIRED TO	O PROCESS THE TYPE
	al is <mark>accurate</mark> a	TION: I hereby certify that the informand complete to the best of my knowled quired information and notifications a	dge. I also understand that no	
	Note	: Statement must be completed by an indivi	dual with managerial and/or superv	risory capacity.
Print o	Type Name	Signature	Title	Date
			e-mail Address	

### BOPCO, L. P.

#### 6 DESTA DRIVE, SUITE 3700 (79705) P. O. BOX 2760 MIDLAND, TEXAS 79702

(432) 683-2277

FAX (432) 687-0329

September 20, 2012

New Mexico Oil Conservation Division Attn: Will Jones 1220 South St. Francis Drive Santa Fe NM 87505

RE:

Administrative Order SWD-1319

February 28, 2012

BEU Hackberry 34 Federal SWD #1

30-015-40288

UL A; NENE; Sec. 34, T19S, R31E

800' FNL 825' FEL:

Eddy County, New Mexico

Dear Will:

BOPCO, L.P. would like to amend the SWD permit, SWD-1319 dated February 28, 2012. After drilling the well a couple of the depths have changed to what was permitted.

The well was drilled to a depth of **14,847'** and not **14,500**. This would make our permitted disposal interval **13,755'** to **14,847** and not **13,755** to **14,500'**. The packer is set at **13,720'** which would be **35'** above the permitted interval of **13,755**. The well has not commenced injection.

Other questions of concern have been answered by our Geologist, Simianne C. Johnson-Hayden "The Hackberry well was mud logged while drilling, and open hole wireline logs were run to TD of 14,847'. No evidence of hydrocarbons was encountered in the open hole section either in samples, via gas monitoring equipment, or on logs, even though the well was drilled with a mud weight of 8.4-8.5 lbs/gal.

We drilled to a total depth of 14,847' because our intention was to drill rock formation (Dolomite) with potential storage capacity to maximize water disposal. We encountered Dolomites from 13,840' – 14,810', and after that depth encountered tight limestone and cherts. We continued drilling to get enough "rat hole" to get electric logs across the potential disposal section.

At total depth the mud loggers recorded Chert, Dolomite, Limestone and less than 10% sand, which we estimate to be the Montoya formation. It is uncertain whether the Fusselman is present in the section, therefore the base of the Devonian is presumed to be at or certainly no deeper than 14,847'."

Attached please find an updated wellbore diagram. A completion report (3160-4) will be filed within the next week to the BLM.

Please let us know of any other concerns and we will address them. Thank you for your consideration in amending the SWD permit.

Sincerely,

Sandra J. Belt

Sr. Regulatory Clerk

Sandia J. Belt

From:

Belt, Sandra J. <SJBelt@BassPet.Com>

Sent:

Tuesday, August 28, 2012 8:26 AM

To:

Jones, William V., EMNRD

Cc:

Cruz, Carlos; Dade, Randy, EMNRD; Sharp, Karen, EMNRD

Subject:

FW: BEU Hackberry 34 Federal SWD #1 30-015-40288

**Attachments:** 

2495\_001.pdf

Good morning Will – hope your day is going well. We have completed this well (completion soon to be filed) and the TD is 14,847 and the bottom of the casing is at 13,769. Packer will be at 13,700'. Permitted open-hole interval is 13,755' to 14,500' psi not to exceed 2751. Do we need to send a letter to amend the Order SWD-1319 dated 2.28.12? Thanks Will and you have a nice day.

From: midlandcopier@basspet.com [mailto:midlandcopier@basspet.com]

Sent: Tuesday, August 28, 2012 8:59 AM

To: Belt, Sandra J.

Subject: BEU Hackberry 34 Federal SWD #1 30-015-40288

PREVISION TO ACTUAL DEPTHS

# Jorrés, William V., EMNRD

From:

Jones, William V., EMNRD

Sent:

Tuesday, August 28, 2012 9:18 AM

To:

'Belt, Sandra J.'

Cc:

Shapard, Craig, EMNRD

Subject:

RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Sandra.

Did you log the open hole or mudlog it? If so, send a copy of that or those logs over the open hole interval.

This is 347 feet deeper than the permitted depths. Why did they stop there? What did they encounter at the total depth?... what type of rocks.

What does your geologist estimate as the Bottom of the Devonian formation at this well's location?

Thank You,

Will

From: Belt, Sandra J. [mailto:SJBelt@BassPet.Com]

Sent: Tuesday, August 28, 2012 8:26 AM

To: Jones, William V., EMNRD

Cc: Cruz, Carlos; Dade, Randy, EMNRD; Sharp, Karen, EMNRD Subject: FW: BEU Hackberry 34 Federal SWD #1 30-015-40288

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**From:** midlandcopier@basspet.com [mailto:midlandcopier@basspet.com]

Sent: Tuesday, August 28, 2012 8:59 AM

To: Belt, Sandra J.

Subject: BEU Hackberry 34 Federal SWD #1 30-015-40288

From:

Johnson-Hayden, Simianne <SJHayden@BassPet.Com>

Sent:

Thursday, August 30, 2012 12:55 PM

To: Cc: Jones, William V., EMNRD Cruz, Carlos; Belt, Sandra J.

Subject:

RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Dear Mr. Jones,

Please see notes below for response to your questions of August 28<sup>th</sup>:

- 1) Yes, we mudlogged and ran open hole electric logs to TD. (I can provide electronic pdf files or hard copies of the required logs)
- 2) We drilled to 14,847' because our intended reason for drilling this well was to drill rock formation (Dolomite) with potential storage capacity to maximize water disposal. We encountered Dolomites from 13,840' 14,810', and after that depth encountered tight limestone and cherts. We continued drilling to get enough "rat hole" to get electric logs across the potential disposal section.
- 3) At total depth the mudloggers recorded Chert, Dolomite, Limestone and less than 10% sand, which we estimate to be the Top of the Montoya formation. It is uncertain whether the Fusselman is present in the section, therefore the base of the Devonian is presumed to be at or certainly no deeper than 14,847'.

If you have additional questions, please feel free to call me or email.

Simianne C. Johnson-Hayden Geologist BOPCO, L.P. 201 Main Street, Suite 2900 Fort Worth, TX 76102 817-390-8664 - office 817-726-6983 - cell sjhayden@basspet.com 817-390-8626 - fax

From: Cruz, Carlos

Sent: Wednesday, August 29, 2012 8:48 AM

To: Johnson-Hayden, Simianne

Subject: Fw: BEU Hackberry 34 Federal SWD #1 30-015-40288

Simianne,

Can you answer Will's questions on the Hackberry?

Thanks,

Carlos

From:

Jones, William V., EMNRD

Sent: To: Monday, September 24, 2012 2:28 PM 'Belt, Sandra J.'; 'sjhayden@basspet.com'

Subject:

RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Hello Sandra,

Just checked today and if you have already sent, I can't seem to find the cover letter and new wellbore diagram. This doesn't need to be computer drawn or elaborate – I actually like the hand drawn ones best.

Let me know if I can help?

Regards,

Will Jones

From: Jones, William V., EMNRD

**Sent:** Thursday, August 30, 2012 4:57 PM **To:** 'Belt, Sandra J.'; 'sjhayden@basspet.com'

**Cc:** Shapard, Craig, EMNRD; Ezeanyim, Richard, EMNRD **Subject:** BEU Hackberry 34 Federal SWD #1 30-015-40288

Hello Simianne and Sandra, Thanks for the info and phone call,

Did your mudlog pick up any indication of hydrocarbon productivity in the open hole? Did you guys send copies of the elogs to our Hobbs office for scanning?

Sandra – please send an updated wellbore diagram showing the new depths (and put formation tops on it also) and a cover letter asking for the amended permit. The cover letter should have the operator name of this well, operators address, the well name and API number, reference the existing permit number, etc. – everything I would need to issue an amended permit. Please incorporate the geologists comments in the cover letter about productivity, probable top of the Devonian and Montoya formations, etc.

Send the letter/well diagram package to me to look over and I will see what the boss/attorney says about re-noticing.

Thank You,

William V. Jones, P.E. 505-476-3448W 505-476-3462F Engineering Bureau, Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

From:

Belt, Sandra J. <SJBelt@BassPet.Com>

Sent:

Wednesday, October 03, 2012 3:33 PM

To:

Jones, William V., EMNRD

Subject:

RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Good afternoon Will – just checking on this one to see if anything further needs to be done or sent in.

I will be leaving BOPCO, my last day is next Friday the 12<sup>th</sup>. I also have 3 I will be working on before then, man that's pushing it. They will be new drills. Do you have an idea on how we might prevent these kind of issues coming up with them? If we think our TD is going to be 14,200 can I show 14,700 on the application and show our open hole interval as ...... To 14,700' and then if we drill to 14,400 we will be okay and within the interval. The top interval won't be a problem cause we will just show it at the top of the Devonian, etc. Does this sound like it will work? Thanks Will and you have a good one

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]

**Sent:** Monday, September 24, 2012 3:28 PM **To:** Belt, Sandra J.; Johnson-Hayden, Simianne

Subject: RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Hello Sandra.

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Send the letter/well diagram package to me to look over and I will see what the boss/attorney says about re-noticing.

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Cc: Shapard, Craig, EMNRD; Ezeanyim, Richard, EMNRD Subject: Re: BEU Hackberry 34 Federal SWD #1 30-015-40288

No indications of hydrocarbons in the open hole interval.

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]

**Sent**: Thursday, August 30, 2012 05:56 PM **To**: Belt, Sandra J.; Johnson-Hayden, Simianne

Cc: Shapard, Craig, EMNRD < craig.shapard@state.nm.us >; Ezeanyim, Richard, EMNRD

<ri><richard.ezeanyim@state.nm.us></ri>

Subject: BEU Hackberry 34 Federal SWD #1 30-015-40288

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Thank You,

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Cc: Shapard, Craig, EMNRD

Subject: RE: BEU Hackberry 34 Federal SWD #1 30-015-40288

Sandra,

Did you log the open hole or mudlog it? If so, send a copy of that or those logs over the open hole interval.

#### **CURRENT WELLBORE DIAGRAM**

Well No.: 1

Lease: Big Eddy Unit Hackberry 34 Federal #1 SWD

Injection Reservior: Devonian Location: 800' FNL & 825' FEL, Sec 34, T19S, R31E API: 30-015-40288 County: EDDY St: NM Elevation GL: 3,467.30 Surface Csg. Elevation KB: 3,492.80 20" 6/6/2012 Size: Spud: 94# Wt Completed J-55 Grd 852' Set @: Sxs cmt: 1,695 sxs Cl H TOC: Surface Hole Size: 26" 20" @ 852' Intermediate Csg. 1 Size: 16" Wt 84# Grd HCN-80 2588' Set @: Sxs Cmt: 1655 sxs CI C TOC: Surface Hole Size: 18 7/8 Intermediate Csg. 2 16" @ 2,588' Size: 10 3/4" Wt 45.5# DV Tool @ 2713' Grd N-80 4427' Set @: 2345 CI C Sxs Cmt: TOC: Surface Hole Size: 14 3/4" Production Csg. Size: 7 5/8" 10 3/4" @ 4,427' 39# Wt L-80 & HCL-80 Grd Set @: 13,771 2170 sxs CI H & 1110 sxs CI C Sxs Cmt: TOC: Surface DV Tool @ 6516' Hole Size: 9 7/8" Open Hole Size: 13,771' - 14,847' Depth: 7 5/8" @ 13,771' 6 1/8" OH Updated: 8/31/2012

TD: 14,847'

9/24/2012

crm CCC

Author:

Engr:

WELL REPORT SUMMARY - FORMATION TOPS AND PAY ZONES

BOPCO, L.P. BEU Hackberry 34 Federal No. 1 SWD 800 °RI. & 825' FEL, Section 34,T195-R31E 3493' 14,847' 30 015 40288

OPERATOR: WELL: LOCATION: KB: TD: API#:

GEOLOGIST: Similanne C. Johnson-Hayden DATE: 9/4/2012

DATA TYPE USED FOR ANALYSIS: Open Hole Log - PEX
This is a vertical hole, there were 3 open hole logging runs including FMI, Dipole Sonic and Rotary
Sidewall cores. This well was drilled as a Devonian salt water disposal well

#### PROPRIETORY FORMATION TOPS AND PAY ZONES

PROPRIETORY FORM	ALION IC	IF 3 MINU I	AT ZUITES		
FORMATION TOP	DEPTH PAY ZON		PAY ZONE SUMMARY/COMMENTS		
Rustler	972'	l			
Salado	1,360'	ـــ			
Base of Salt	2,230'	<b>└</b>			
Yates	2421'				
Reef	2740'	<u> </u>			
Delaware Mtn. Group	4,120'	<del> </del>			
Old Indian Draw	4,230				
BE11 & Rodke Pay	5,280	ļ			
Brushy Canyon	5,740'				
Brushy Canyon "I" sand	5,968'				
Shell Zone	6,188	<u> </u>	<u> </u>		
Brushy Canyon "5" sand	6,550	<u> </u>			
Brushy Canyon "T" sand	6,600*	<u> </u>			
Brushy Canyon 'U" sand	6,644	ļ			
Lower Brushy Canyon	6,740	<u> </u>			
LBC "Marker"	6,762				
LBC "V"	6,792	<u> </u>			
LBC "W"	6,826'	L			
LBC "X"	6,871				
Í	1		LBC unproven in this area. But data is encouraging. Fair-Gd		
LBC "Y"	6,924'		Mudlog show, 20% Bright Yellow Fluor., sml amt oil on shaker screen. 32'>9% porosity, Log calculated Sws mostly 57-58%. Rotary 5WCores Sws 31-38%; So=18-22%; FMI supports bypass		
	<del> </del>	<b>国际的</b>	zone.?.		
Cut off Shale	7,000	<u> </u>			
Bone Spring Lime	7,014				
Upper Avalon Shale	7,540	L	no gas increase over zone		
Base of Ur. Avalon	7,608'	and these to the			
Lower Avaion Shale	7,834	THE RESERVE	100-400 unit gas increase; total gas 500 units		
Base of Lr. Avalon	7,954				
Bone Spring 1 Sand	8,334'		Fair oil show, oil on shaker at 8470-80'. Very tite, porosity <8%; cores show Sws=24-77%; Only 1' >9% by logs (not supported by RswCores)		
Bone Spring 1 Shale	not present				
Bone Spring 1 Carbonate	8,620'				
Bone Spring 2A' Sand	8,972'	000	Very gd oil show; 70% BYFluor; 400unit gas increase. 9' > 9% Density Porosity by logs. RswCore data show Sws=26-73%& some inconsistency with log porosity. So=13-21%. Primary potential pay zone for area. Over all very encouraging.		
Bone Spring 2A Sand	9,084		No oil show, Gas falls off in lower part of section. Very tite-3' >		
			9% Density Porosity by logs. RswCore data show slightly higher porosity than elogs, Core Sws=21-75%. So=9-15%.		
Lime	9,150	e de la modra			
Bone Spring 28 Sand	9,150' 9,156'	60000			
Bone Spring 28 Sand  Bone Spring 2 Carbonate	9,150'	e de la modra	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oll show; 40-50% BYFluor; 400 unit gas increase. 36°>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; So=10.5-		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand	9,150° 9,156° 9,460° 9,922°	e de la modra	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oll show; 40-50% BYFluor; 400 unit gas increase. 36°>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; So=10.5-		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp	9,150° 9,156° 9,460° 9,922° 10,294°	e de la modra	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oll show; 40-50% BYFluor; 400 unit gas increase. 36°>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; So=10.5-		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand	9,150° 9,156° 9,460° 9,922°	Baraca a	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; So=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 11,500°	BBCCCCC	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oll show; 40-50% BYFluor; 400 unit gas increase. 36°>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; So=10.5-		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka  Morrow	9,150' 9,156' 9,460' 9,922' 10,294' 11,178' 11,500'	BBCCCCC	porosity than elogs, Core Sws=21-75%. 50=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase, 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; 50=10.5-18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40-50% BGrn Fluor. Mudded up from 9-3-10.8lb. Electric logs do		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 11,500°	Bercose	porosity than elogs, Core Sws=21-75%. 50=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  18.50-910': Gas=50-1000unit increase with 25'flare and 40- 50% 86'm Fluor. Mudded up from 9-9-10.8lb. Electric logs do not confirm pay, Low resistivity.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka  Morrow Middle Morrow "A" sd  Middle Morrow "B" sd	9,150' 9,156' 9,460' 9,922' 10,294' 11,178' 11,500' 12,112' 12,292' 12,371'	Beccode	porosity than elogs, Core Sws=21-75%. 50=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase, 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; 50=10.5-18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40-50% BGrn Fluor. Mudded up from 9-3-10.8lb. Electric logs do		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp  Strawn  Atoka  Morrow  Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow	9,150° 9,460° 9,922° 10,294° 11,178° 11,500° 12,112° 12,292° 12,371° 12,592°	Beccode	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Woolfcamp Strawn  Atoka  Morrow  Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow	9,150° 9,460° 9,922° 10,294° 11,178° 11,500° 12,112° 12,292° 12,371° 12,592° 12,752°	Beccode	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand Woolfcamp Strawn  Atoka  Marrow Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow Barnett  Missssippian time	9,150° 9,460° 9,460° 9,924° 11,178° 11,500° 12,112° 12,292° 12,371° 12,592° 12,752° 13,075°	Beccode	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka  Morrow Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow Barnett  Mississippian Lime  Woodford	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 11,500° 12,112° 12,292° 12,371° 12,592° 13,055° 13,055°	Beccode	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Woolfcamp Strawn  Atoka  Morrow Middle Morrow "A" sd  Middle Morrow "B" sd Lower Morrow  Barnett  Mississippian time  Woodford  Devonian	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 12,502° 12,371° 12,552° 13,075° 13,651° 13,771°	Beccode	porosity than elogs, Core Sws=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-66%; 50=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp  Strawn  Atoka  Morrow  Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow Barnett  Mississippian time  Woodford  Devenlan	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 12,112° 12,292° 12,371° 12,592° 13,075° 13,651° 13,771° 14,790°	Beccode	porosity than elogs, Core Swa=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'-9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Swa=27-68%; So=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay, Low resistivity.  12.410-50': Big sand, reverse drill break? Calculates as pay.		
Bone Spring 28 Sand  Bone Spring 2 Carbonate Bone Spring 3 Sand  Wolfcamp Strawn  Atoka  Marrow Middle Morrow "A" sd  Middle Morrow "B" sd  Lower Morrow  Jarnett  Mississippian Lime  Moodford	9,150° 9,156° 9,460° 9,922° 10,294° 11,178° 12,502° 12,371° 12,552° 13,075° 13,651° 13,771°	Beccode	porosity than elogs, Core Swa=21-75%. So=9-15%.  Good-Very Gd oil show; 40-50% BYFluor; 400 unit gas increase. 36'>9% Density porosity by logs. RswCore data show fairly consistent porosity with logs. 6-12.6%; Sws=27-68%; So=10.5- 18.6%. Primary potential pay zone for area. Very encouraging.  11850-910': Gas=50-1000unit increase with 25'flare and 40- 50% BGrn Fluor. Mudded up from 9.9-10.8lb. Electric logs do not confirm pay. Low resistivity. 12,410-50': Big sand, reverse drill break? Calculates as pay.		

Primary Pay Zone
Probable pay
Possible pay

FORMATION	MD
Rustler	972'
Salado	1,360'
base/Salt	2,230'
Dela. Mtn. Group	4,120'
Bell Canyon	4,230'
Cherry Canyon	4,930'
Lo. Cherry Canyon	unknown
Brushy Canyon	5,740'
Lower Brushy Canyon	6,740'
Bone Spring	7,014
Wolfcamp	10,294
Strawn	11,178*
Atoka	11,500
Morrow	12,112
Barnett	12,752
Mississippian Lime	13,075
Woodford	13,651
Devonian	13,771'
Montoya	14,790'

From:

Belt, Sandra J. [SJBelt@BassPet.Com] Tuesday, February 28, 2012 6:37 AM

Sent: To:

Jones, William V., EMNRD

Subject:

FW: Disposal application from BOPCO, LP: proposed BEU Hackberry 34 Federal #1 (30-015-NA) 800FNL 825FEL A/34/19S/31E Eddy

Good morning Will. If this doesn't answer all of your questions just let me know and you have a good one. (sorry for the delay)

From: Johnson-Hayden, Simianne

Sent: Wednesday, February 22, 2012 9:54 AM

To: Belt, Sandra J.; Cruz, Carlos

Cc: Pregger, Brian; Deans, Jack; Hillis, George

Subject: RE: Disposal application from BOPCO, LP: proposed BEU Hackberry 34 Federal #1 (30-015-NA) 800FNL 825FEL A/34/19S/31E Eddy

Sandra and Carlos:

l am the Geologist on this well. FYI a Geological Prognosis was issued on 11/21/2011 which would answer all but the last of Mr. Jones's questions; however, I will respond here as well. See below answers in RED:

Would you ask your geologist to estimate these formation depths:

Top and bottom of Salado Salt: Top of Salt: +2680 ss; Base of Salt: +1470 ss

Top and bottom of Capitan Reef: Top of Capitan: +690 ss; Base of Capitan: -850 ss

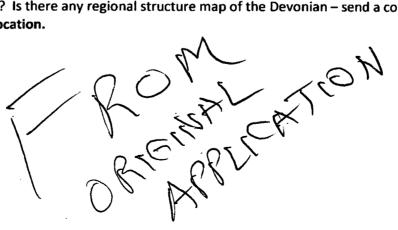
Top and bottom of the Devonian formation: Top of Devonian: Top of Devonian: -10250 ss; Base of Devonian: -11250 ss

Also, will you guys be mudlogging the Devonian? And what sort of elogs will you run over the Devonian?

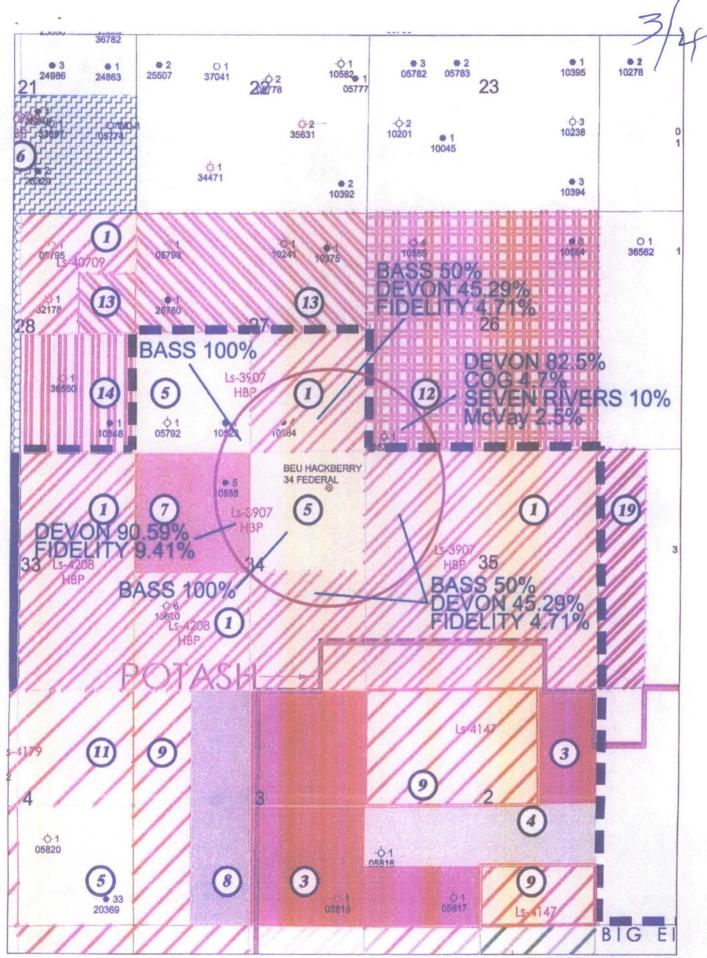
We will mudlog the entire well, including the Devonian. Currently we plan to run GR-DEN-NEU/HRLA/BHC across the interval that includes the Devonian

Is the Devonian on any structure or closure in this area? Is there any regional structure map of the Devonian – send a copy if you can generate one. No, the Devonian is not on a closed structure at this location.

Simianne C. Johnson-Hayden Geologist BOPCO, L.P. A Bass Legacy Company 201 Main Street, Suite 2900 Fort Worth, TX 76102



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## Belt, Sandra J.

From:

McBroom, John

Sent:

Wednesday, January 18, 2012 2:58 PM

To: Subject: Belt, Sandra J. Hackberry 34 SWD

Attachments:

20120117104723886.pdf

#### Sandra,

Attached is a plat showing the WI owners within a ½ mile radius of the Hackberry 34 SWD well. Also, below are the addresses for the respective companies. Please be sure to let me know if you need anymore information.

Devon 20 N. Broadway #1500 Oklahoma City, Ok 73102

COG Operating 500 Wall St. Midland, Tx. 79701

McVay Drilling POB 1348 Hobbs, NM 88241

Seven Rivers, Inc. POB 1598 Carlsbad, NM 88220

Fidelity Exploration and Production Co. 625 Broadway #1800 Denver, CO 80202

#### Thanks,

John P. McBroom BOPCO, L.P. A Bass Legacy Company 201 Main St., Suite 2900 Fort Worth, Texas 76102 (817) 339-7185 Office (817) 339-7102 Fax imcbroom@basspet.com

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