Confidentiality Requested: Yes No

## Kansas Corporation Commission OIL & GAS CONSERVATION DIVISION

Form ACO-1 August 2013 Form must be Typed Form must be Signed All blanks must be Filled

## **WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License #	API No. 15			
Name:	Spot Description:			
Address 1:	SecTwpS. R 🔲 East 🗌 West			
Address 2:	Feet from North / South Line of Section			
City:	Feet from _ East / _ West Line of Section			
Contact Person:	Footages Calculated from Nearest Outside Section Corner:			
Phone: ()	□NE □NW □SE □SW			
CONTRACTOR: License #	GPS Location: Lat:, Long:			
Name:	(e.g. xx.xxxxx) (e.gxxx.xxxxx)  Datum: NAD27 NAD83 WGS84			
Wellsite Geologist:				
Purchaser:	County:			
Designate Type of Completion:	Lease Name: Well #:			
☐ New Well ☐ Re-Entry ☐ Workover	Field Name:			
☐ Oil ☐ WSW ☐ SWD ☐ SIOW	Producing Formation:			
Gas D&A ENHR SIGW	Elevation: Ground: Kelly Bushing:			
☐ OG ☐ GSW ☐ Temp. Abd.	Total Vertical Depth: Plug Back Total Depth:			
CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet			
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used? Yes No			
If Workover/Re-entry: Old Well Info as follows:	If yes, show depth set: Feet			
Operator:	If Alternate II completion, cement circulated from:			
Well Name:	feet depth to:w/sx cmt.			
Original Comp. Date: Original Total Depth:				
☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD	Drilling Fluid Management Plan			
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer	(Data must be collected from the Reserve Pit)			
Commingled Permit #:	Chloride content:ppm Fluid volume:bbls			
Dual Completion Permit #:	Dewatering method used:			
SWD Permit #:	Location of fluid disposal if hauled offsite:			
ENHR Permit #:				
GSW Permit #:	Operator Name:			
	Lease Name: License #:			
Spud Date or Date Reached TD Completion Date or	QuarterSecTwpS. R East West			
Recompletion Date Recompletion Date	Countv: Permit #:			

### **AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY			
Confidentiality Requested			
Date:			
Confidential Release Date:			
Wireline Log Received			
Geologist Report Received			
UIC Distribution			
ALT I II III Approved by: Date:			

CORRECTION #1

Operator Name:			L	ease Name: _			Well #:	
Sec Twp	S. R	East We	est C	County:				
INSTRUCTIONS: Shopen and closed, flow and flow rates if gas to	ring and shut-in pres	sures, whether sh	ut-in pressur	e reached stati	c level, hydrosta	tic pressures, bott		
Final Radioactivity Lo files must be submitted					gs must be ema	iled to kcc-well-log	gs@kcc.ks.go	. Digital electronic log
Drill Stem Tests Taker (Attach Additional		Yes	No	L		n (Top), Depth an		Sample
Samples Sent to Geo	logical Survey	Yes	No	Nam	e		Тор	Datum
Cores Taken Electric Log Run		Yes Yes	No No					
List All E. Logs Run:								
		(	CASING REC	ORD Ne	w Used			
		· ·		ıctor, surface, inte	ermediate, producti		T	
Purpose of String	Size Hole Drilled	Size Casin Set (In O.D		Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
		ADD	ITIONAL CEN	MENTING / SQL	JEEZE RECORD			
Purpose:	Depth Top Bottom	Type of Cem	ent #	Sacks Used		Type and Pe	ercent Additives	
Perforate Protect Casing	100 20111111							
Plug Back TD Plug Off Zone								
1 lag on zono								
Did you perform a hydrau	ulic fracturing treatment	on this well?			Yes	No (If No, ski)	o questions 2 ar	nd 3)
Does the volume of the to		•				_	o question 3)	(" 100 ")
Was the hydraulic fractur	ing treatment information	on submitted to the c	hemical disclo	sure registry?	Yes	No (If No, fill o	out Page Three	of the ACO-1)
Shots Per Foot		ION RECORD - Bri Footage of Each Int				cture, Shot, Cement		d Depth
	, ,				,		,	
TUBING RECORD:	Size:	Set At:	Pa	acker At:	Liner Run:			
						Yes No		
Date of First, Resumed	Production, SWD or Ef		cing Method: owing	Pumping	Gas Lift C	ther <i>(Explain)</i>		
Estimated Production Per 24 Hours	Oil	Bbls. G	as Mcf	Wate	er Bl	ols. G	ias-Oil Ratio	Gravity
DIODOCITI	ON OF CAS:		, 4 CT - 1		TION:		DRODUCTIO	AN INTEDVAL.
Vented Solo	ON OF GAS:  Used on Lease	Open Ho		IOD OF COMPLE $\Box$		nmingled	PHODUCIIC	ON INTERVAL:
	bmit ACO-18.)	Other (S	necify)	(Submit		mit ACO-4)		

Form	ACO1 - Well Completion
Operator	Unit Petroleum Company
Well Name	Black Farms 30 1-H
Doc ID	1234550

## Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	28	16	65	140	Common	144	Common
Intermedia te	12.25	9.625	36	1530	А	580	2% CC + 1/4# celloflake
Intermedia te	8.75	7	26	4058	А	160	5% gyp + 10% salt
Production	6.125	5.50	20	8440	Prem H	510	2% CC + 0.6% FL - 160
Production	6.125	4.50	11.6	8440	Prem H	510	2% CC + 0.6% FL - 160

## **Summary of Changes**

Lease Name and Number: Black Farms 30 1-H

API/Permit #: 15-155-21676-01-00

Doc ID: 1234550

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Approved Date	03/28/2014	12/09/2014
Save Link	//kcc/detail/operatorE ditDetail.cfm?docID=11	//kcc/detail/operatorE ditDetail.cfm?docID=12
Well Type	95530 GAS	34550 OIL



Confidentiality Requested:

Yes No

## Kansas Corporation Commission Oil & Gas Conservation Division

1195530

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

# CONFIDENTIAL WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License #	API No. 15			
Name:	Spot Description:			
Address 1:	SecTwpS. R 🔲 East 🗌 West			
Address 2:	Feet from North / South Line of Section			
City:	Feet from _ East / _ West Line of Section			
Contact Person:	Footages Calculated from Nearest Outside Section Corner:			
Phone: ()	□NE □NW □SE □SW			
CONTRACTOR: License #	GPS Location: Lat:, Long:			
Name:	(e.g. xx.xxxxx) (e.gxxx.xxxxx)  Datum: NAD27 NAD83 WGS84			
Wellsite Geologist:				
Purchaser:	County:			
Designate Type of Completion:	Lease Name: Well #:			
☐ New Well ☐ Re-Entry ☐ Workover	Field Name:			
☐ Oil ☐ WSW ☐ SWD ☐ SIOW	Producing Formation:			
Gas D&A ENHR SIGW	Elevation: Ground: Kelly Bushing:			
☐ OG ☐ GSW ☐ Temp. Abd.	Total Vertical Depth: Plug Back Total Depth:			
CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet			
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used? Yes No			
If Workover/Re-entry: Old Well Info as follows:	If yes, show depth set: Feet			
Operator:	If Alternate II completion, cement circulated from:			
Well Name:	feet depth to:w/sx cmt.			
Original Comp. Date: Original Total Depth:				
☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD	Drilling Fluid Management Plan			
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer	(Data must be collected from the Reserve Pit)			
Commingled Permit #:	Chloride content:ppm Fluid volume:bbls			
Dual Completion Permit #:	Dewatering method used:			
SWD Permit #:	Location of fluid disposal if hauled offsite:			
ENHR Permit #:				
GSW Permit #:	Operator Name:			
	Lease Name: License #:			
Spud Date or Date Reached TD Completion Date or	QuarterSecTwpS. R East West			
Recompletion Date Recompletion Date	Countv: Permit #:			

### **AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

**Submitted Electronically** 

KCC Office Use ONLY			
Confidentiality Requested			
Date:			
Confidential Release Date:			
Wireline Log Received			
Geologist Report Received			
UIC Distribution			
ALT I II Approved by: Date:			

KOLAR Document ID: 1195530

### Page Two

Operator Name: _				Lease Name:			Well #:	
Sec Twp.	S. R.	E	ast West	County:				
	flowing and shu	ut-in pressures, v	vhether shut-in pre	ssure reached st	atic level, hydrosta	tic pressures, bot		val tested, time tool erature, fluid recovery,
Final Radioactivity files must be subm						iled to kcc-well-lo	gs@kcc.ks.gov	v. Digital electronic log
Drill Stem Tests Ta			Yes No			on (Top), Depth ar		Sample
Samples Sent to 0	Geological Surv	/ey	Yes No	Na	me		Тор	Datum
Cores Taken Electric Log Run Geologist Report / List All E. Logs Ru	_		Yes No Yes No Yes No					
		B	CASING eport all strings set-c		New Used	ion, etc.		
Purpose of Strir		Hole illed	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
			ADDITIONAL	CEMENTING / SO	UEEZE RECORD			
Purpose:		epth T Bottom	ype of Cement	# Sacks Used		Type and F	Percent Additives	
Perforate Protect Casi Plug Back T								
Plug Off Zor								
Did you perform a     Does the volume     Was the hydraulic	of the total base f	fluid of the hydrauli		_	=	No (If No, sk	ip questions 2 an ip question 3) out Page Three	,
Date of first Product Injection:	tion/Injection or R	esumed Production	Producing Meth	nod:	Gas Lift 0	Other (Explain)		
Estimated Production Per 24 Hours	on	Oil Bbls.					Gas-Oil Ratio	Gravity
DISPOS	SITION OF GAS:		N	METHOD OF COMP	LETION:			DN INTERVAL: Bottom
	Sold Used	I on Lease	Open Hole			mmingled mit ACO-4)	Тор	BOROTT
,	,			B.11 B1				
Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid,	Fracture, Shot, Cer (Amount and Kind	menting Squeeze I of Material Used)	Record
TUBING RECORD:	: Size:	Set	Δ+-	Packer At:				
TODING RECORD:	. 3126.	Set	n.	i donei Al.				

Form	ACO1 - Well Completion
Operator	Unit Petroleum Company
Well Name	Black Farms 30 1-H
Doc ID	1195530

## Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	4200 - 8224		

Form	ACO1 - Well Completion
Operator	Unit Petroleum Company
Well Name	Black Farms 30 1-H
Doc ID	1195530

## Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement		Type and Percent Additives
Surface	28	16	65	140	Common	144	Common
Intermedia te	12.25	9.625	36	1530	A	580	2% CC + 1/4# celloflake
Intermedia te	8.75	7	26	4058	А	160	5% gyp + 10% salt
Production	6.125	5.50	20	8440	Prem H		2% CC + 0.6% FL - 160
Production	6.125	4.50	11.6	8440	Prem H		2% CC + 0.6% FL - 160

#### Section 30, T 24 S, R 10 W., Reno County, Kansas. **R10W** S 89°21'23" W 2639' S 89°22'28" W 2613' N:1776252 N:1776194 N:1776223 600 E:1325614 SURFACE LOCATION (STAKED) SURFACE LOCATION (STAKED) "BLACK FARMS 30 #1H" UNIT PETROLEUM CO. 37'56'24.83" N (37.94023) (NAD 83). 98'27'21.691 W (-98.45603) (NAD 83). KANSAS SOUTH STATE PLANE Y= 1776071 (NAD 83) X= 1325015 (NAD 83) GR. ELEV.= 1762' (NAVD 88) E:1322975 E:1320362 875 S 00°16'44" E 700' 600' 2653 2651 ш ш Ш 17'28" 00°16'44" 00°19'19" POINT OF PENETRATION "BLACK FARMS 30 #1H" UNIT PETROLEUM CO. 37'56'17-916" N (37-98331) (NAD 83) 98"27'21.653" W (-98.45601) (NAD 83) KANSAS SOUTH STATE PLANE Y= 1775371 (NAD 83) X= 1325018 (NAD 83) 0001 T24S N 89°23'33" E 2638' N 89°23'33" E 2612' 30 Ш N:1773600 N:1773544 16'14" E:1325627 S 00°1 2653 2651' 2650 00°15'51" E 17'28" E TERMINUS POINT Ш TERMINUS POINT "BLACK FARMS 30 #1H" UNIT PETROLEUM CO. 37\*55'37.388" N (37.92705) (NAD 83) 98\*27'21.438 W (-98.45595) (NAD 83) KANSAS SOUTH STATE PLANE Y= 1771271 (NAD 83) X= 1325037 (NAD 83) 19'19" 00 00 S 600' 330' N-1770947 N:1770894 N 89°25'11" E 2637 N 89°25'11" E 2610' N-1770921 E:1325639 E:1320392 E:1323002 48 HOURS BEFORE YOU DIG... 1-800-344-7233 1000 2000 3000' 0 Buried utilities are not necessarily shown It is the contractor's responsibility to Description: Surface Hole Location Stake cate and preserve all utility services "Black Farms 30 #1H" situated 175 feet from the north Contractor is responsible for contacting all section line and 600 feet from the east section line of utility companies prior to construction. Section 30, T 24 S, R 10 W., Reno County, Kansas. Description: Point of Penetration "Black Farms 30 #1H" situated 875 feet from the north section line and 600 feet from the east section line of Section 30, T 24 S, Datum: NAD 83 R 10 W., Reno County, Kansas. Units: US Survey Feet North: Grid Coordinates: State Plane Description: Terminus Point Zone: 1502 State: Kansas "Black Farms 30 #1H" situated 330 feet from Region: South the south section line and 600 feet from the **LEGEND** east section line of Section 30, T 24 S. SECTION LINE R 10 W., Reno County, Kansas. Survey is valid only if print has original 1/4 SECTION LINE seal and signature of surveyor present Survey For: Unit Petroleum Co. JIVIDENS LAND SURVEY CO., INC. DATE OF PLAT SCALE 673-13 11-06-2013 1"=1000" 1210 19TH STREET / P.O. BOX 943 P.O. Box 2726 Woodward, Oklahoma 73802 WOODWARD, OKLAHOMA 73802 DRAWN BY OKLA. CA #2064, EXP. 06/30/2015 KANSAS CA #143, EXP. 12/31/2014 S Phone 580-256-7174 - Fax 580-256-3424 videnslandsurvey.com mike@jividenslan Attn: Jason Rummery

## **Unit Petroleum**

Reno County, Kansas [NAD 83] Section 30 T25S-R10W Black Farms 30-1H

OH

Design: OH

## **Standard Survey Report**

21 January, 2014





Unit Petroleum
Project: Reno County, Kansas [NAD 83]
Site: Section 30 T255-R10W
Well: Black Farms 30-1H
Wellbore: OH
Design: Design #5
Lat: 37° 56' 24.841 N
Long: 98° 27' 21.687 W
Pad GL: 1761.00
KB: 20' KB @ 1781.00usft (UDI 303)

SECTION DETAILS											
VSect	TFace	Dleg	÷E/-W	+N/-S	TVD	Azí	Inc	MD			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
0.00	0.00	0.00	0.00	0.00	3134.49	0.00	0.00	3134.49			
252.56	179.74	10.00	1.15	-252.56	3609.49	179.74	56.00	3694.49			
376.92	0.00	0.00	1.71	-376.92	3693.37	179.74	56.00	3844.49			
643.91	-0.01	12.00	2.93	-643.91	3775.00	179.74	90.00	4127.82			
4800.36	0.00	0.00	22.00	-4800.31	3775.00	179.74	90.00	8284.27			

WELL DETAILS: Black Farms 30-1H

Ground Level: 178-1.00

+NI/-S +E/-W Northing Earling Latitude Longitude Slot
0.00 0.00 1776071.00 1325015.00 37° 56' 24.841 N 98° 27' 21.887 W

 
 WELLBORE TARGET DETAILS (LATI/LONG)

 Name BF 30-1H PBHL
 TVD 3775.00
 +NI-S 4800.31
 +E/-W 22.00
 Latitude 37° 55' 37.386 N
 Longitude 98° 27' 21.441 W
 Shape Point

NOTE: All Lease lines and Hard lines are estimates only and are subject to the customers' approval.

2500

3000

3500

4000

Vertical Section at 179.74° (1000 usft/in)

4500

5000

True Vertical Depth (1000 usft/in)

3000-

3500-

-1000

-500

500

1000

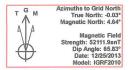
1500

2000

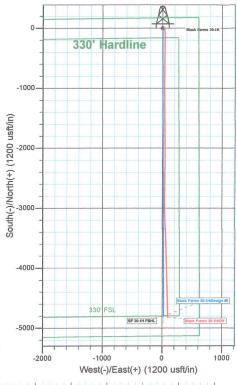
PROJECT DETAILS: Reno County, Kansas [NAD 83]

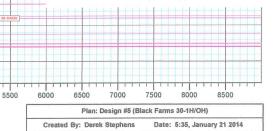
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Kansas Southern Zone

System Datum: Mean Sea Level











Company:

Unit Petroleum

Project:

Reno County, Kansas [NAD 83]

Site:

Section 30 T25S-R10W

Well:

Black Farms 30-1H

Wellbore: Design:

OH OH Local Co-ordinate Reference:

TVD Reference:

**MD** Reference:

North Reference:

**Survey Calculation Method:** Database:

Well Black Farms 30-1H

20' KB @ 1781.00usft (UDI 303)

20' KB @ 1781.00usft (UDI 303)

Grid

Minimum Curvature

EDM 5000.1 Single User Db

Project

Reno County, Kansas [NAD 83]

Map System: Geo Datum:

US State Plane 1983

Map Zone:

North American Datum 1983

Kansas Southern Zone

System Datum:

Mean Sea Level

Using geodetic scale factor

Site

Section 30 T25S-R10W

Site Position:

Map

Northing: Easting:

1,776,071.00 usft 1,325,015.00 usft

Latitude: Longitude:

37° 56' 24.841 N 98° 27' 21.687 W

Position Uncertainty:

0.00 usft

Slot Radius:

13-3/16 "

**Grid Convergence:** 

0.03 °

Well

Black Farms 30-1H

**Well Position** 

+N/-S +E/-W 0.00 usft 0.00 usft Northing: Easting:

1,776,071.00 usft 1,325,015.00 usft

4.67

Latitude: Longitude:

37° 56' 24.841 N 98° 27' 21.687 W

**Position Uncertainty** 

0.00 usft

usft

**Ground Level:** 

1,761.00 usft

Wellhead Elevation:

Wellbore

OH

Magnetics

**Model Name** 

Sample Date

Declination

**Dip Angle** 

Field Strength (nT)

179.74

52,112

Design

OH

Audit Notes: Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

0.00

**Vertical Section:** 

IGRF2010

Depth From (TVD)

+N/-S

+E/-W

Direction

65.83

(usft)

0.00

12/25/2013

(usft)

0.00

(usft)

(°)

**Survey Program** 

From (usft)

80.86

3,099.00

To

(usft)

Date 1/21/2014

Survey (Wellbore)

**Tool Name** 

Description

Camera based gyro multishot

3,062.62 Gyro (OH) 8,320.00 MWD (OH) CB-GYRO-MS MWD

MWD - Standard

ву									
Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Section (usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.86	0.78	54.40	80.86	0.32	0.45	-0.32	0.96	0.96	0.00
267.22	1.74	50.81	267.17	2.85	3.67	-2.83	0.52	0.52	-1.93
453.58	1.97	52.84	453.43	6.57	8.42	-6.53	0.13	0.12	1.09
639.94	1.44	62.36	639.71	9.59	13.04	-9.53	0.32	-0.28	5.11
826.30	1.10	74.27	826.02	11.16	16.84	-11.08	0.23	-0.18	6.39
1,012.66	0.83	78.24	1,012.36	11.92	19.88	-11.83	0.15	-0.14	2.13
1,199.02	0.65	99.56	1,198.70	12.02	22.25	-11.92	0.17	-0.10	11.44
1,385.38	1.05	132.43	1,385.04	10.69	24.55	-10.58	0.33	0.21	17.64
1,571.74	0.93	139.13	1,571.37	8.40	26.80	-8.28	0.09	-0.06	3.60



Company:

Unit Petroleum

Project:

Reno County, Kansas [NAD 83]

Site:

Section 30 T25S-R10W

Well:

Black Farms 30-1H

Wellbore:

ОН

Design:

ОН

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** Database:

Well Black Farms 30-1H

20' KB @ 1781.00usft (UDI 303) 20' KB @ 1781.00usft (UDI 303)

Grid

Minimum Curvature

EDM 5000.1 Single User Db

rvey										
				Martinal			Madian	Dealer	Duild	Tues
IV	leasured Donth	In all making	A!Ab-	Vertical Depth	. N// O	.E(184	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
	Depth (usft)	Inclination (°)	Azimuth (°)	(usft)	+N/-S (usft)	+E/-W (usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
	1,758.10	0.87	138.98	1,757.71	6.19	28.72	-6.06	0.03	-0.03	-0.08
	1,944.46	1.00	136.49	1,944.05	3.94	30.77	-3.80	0.07	0.07	-1.34
	2,130.82	0.69	151.91	2,130.39	1.77	32.42	-1.62	0.20	-0.17	8.27
	2,317.18	0.87	157.92	2,316.73	-0.53	33.48	0.68	0.11	0.10	3.22
	2,503.54	0.11	188.04	2,503.08	-2.02	33.98	2.17	0.42	-0.41	16.16
	2,689.90	0.05	229.40	2,689.44	-2.25	33.90	2.40	0.04	-0.03	22.19
	2,876.26	0.40	286.62	2,875.80	-2.12	33.21	2.27	0.20	0.19	30.70
	3,062.62	0.58	323.89	3,062.15	-1.17	32.03	1.31	0.19	0.10	20.00
	3,099.00	0.30	300.80	3,098.53	-0.97	31.84	1.12	0.90	-0.77	-63,47
									3.75	-347.81
	3,131.00	1.50	189.50	3,130.53	-1.34	31.70	1.49	5.10	3.75	-347.01
	3,162.00	3.80	181.50	3,161.49	-2.77	31.61	2.91	7.50	7.42	-25.81
	3,194.00	6.50	177.50	3,193.36	-5.64	31.66	5.78	8.51	8.44	-12.50
	3,225.00	9.10	176.30	3,224.07	-9.84	31.89	9.98	8.40	8.39	-3.87
	3,256.00	11.80	174.70	3,254.55	-15.44	32.34	15.59	8.76	8.71	-5.16
	3,288.00	14.20	174.90	3,285.73	-22.61	32.99	22.76	7.50	7.50	0.63
	3,319.00	16.30	175.20	3,315.64	-30.73	33.70	30.89	6.78	6.77	0.97
	3,351.00	18.30	175.90	3,346.19	-40.22	34.43	40.38	6.28	6.25	2.19
	3,382.00	20.40	175.70	3,375.44	-50.46	35.18	50.62	6.78	6.77	-0.65
		23.10	176.30	3,405.16	-62.29	36.01	62.45	8.47	8.44	1.88
	3,414.00 3,445.00	26.30	176.50	3,433.32	-75.22	36.81	75.39	10.33	10.32	0.97
	-1			-,						
	3,477.00	29.70	176.60	3,461.57	-90.21	37.70	90.38	10.63	10.63	0.00
	3,508.00	32.90	177.10	3,488.05	-106.29	38.58	106.47	10.36	10.32	1.61
	3,540.00	36.40	177.40	3,514.37	-124.46	39.45	124.64	10.95	10.94	0.94
	3,572.00	39.80	178.60	3,539.55	-144.19	40.13	144.37	10.87	10.63	3.75
	3,602.00	42.50	180.80	3,562.14	-163.93	40.23	164.11	10.21	9.00	7.33
	3,634.00	45.60	181.00	3,585.14	-186.17	39.87	186.35	9.70	9.69	0.63
	3,666.00	49.50	180.80	3,606.73	-209.78	39.51	209.95	12.20	12.19	-0.63
	3,698.00	53.20	181.00	3,626.71	-234.76	39.11	234.94	11.57	11.56	0.63
	3,729.00	54.70	180.70	3,644.96	-259.82	38.74	259.99	4.90	4.84	-0.97
	3,761.00	55.00	180.60	3,663.38	-285.98	38.44	286.16	0.97	0.94	-0.31
	3,101.00	00.00	. 50.00	5,550.00		00.17				
	3,792.00	55.90	180.80	3,680.96	-311.51	38.13	311.68	2.95	2.90	0.65
	3,823.00	58.40	180.60	3,697.77	-337.55	37.81	337.72	8.08	8.06	-0.65
	3,855.00	61.40	180.70	3,713.82	-365.23	37.50	365.40	9.38	9.38	0.31
	3,886.00	64.70	180.90	3,727.87	-392.86	37.11	393.02	10.66	10.65	0.65
	3,917.00	68.10	180.50	3,740.28	-421.26	36.77	421.42	11.03	10.97	-1.29
	3,948.00	72.00	180.20	3,750.85	-450.39	36.59	450.56	12.61	12.58	-0.97
	3,980.00	74.70	180.30	3,760.02	-481.05	36.46	481.21	8.44	8.44	0.31
	4,011.00	78.30	180.30	3,767.26	-511.19	36.30	511.35	11.61	11.61	0.00
	4,120.00	86.30	180.70	3,781.85	-619.11	35.35	619.27	7.35	7.34	0.37
	4,152.00	89.90	180.40	3,782.91	-651.09	35.05	651.24	11.29	11.25	-0.94
	7, 102.00	03.30	150.70	0,7 02.01	001.00	30.00		11.23	,,,,,,	2121
	4,183.00	91.10	180.30	3,782.64	-682.08	34.86	682.24	3.88	3.87	-0.32
	4,247.00	91.30	180.20	3,781.30	-746.07	34.58	746.22	0.35	0.31	-0.16
	4,343.00	92.30	179.70	3,778.28	-842.02	34.66	842.17	1.16	1.04	-0.52



Company:

Unit Petroleum

Project:

Reno County, Kansas [NAD 83]

Site:

Section 30 T25S-R10W

Well:

Black Farms 30-1H

Wellbore:

OH

Design:

ОН

Local Co-ordinate Reference:

**TVD Reference:** 

MD Reference:

North Reference:

**Survey Calculation Method:** 

Database:

Well Black Farms 30-1H

20' KB @ 1781.00usft (UDI 303)

20' KB @ 1781.00usft (UDI 303) Grid

Minimum Curvature

EDM 5000.1 Single User Db

4,535.00         89.70         180.00         3,774.93         -1,033.97         35.92         1,034.12         1.49         -1.35         0.63           4,630.00         90.20         179.30         3,774.01         -1,128.97         36.50         1,129.12         0.91         0.53         -0.74           4,728.00         91.00         179.30         3,774.01         -1,224.95         376.71         1,225.11         0.83         0.83         0.00           4,917.00         89.50         179.80         3,774.59         -1,415.94         39.26         1,416.10         0.33         0.11         0.32           5,102.00         89.90         180.00         3,776.98         -1,510.94         39.42         1,511.10         0.47         0.42         0.21           5,108.00         87.90         180.00         3,776.08         -1,510.94         39.42         1,617.10         0.47         0.42         0.21           5,285.00         89.40         179.30         3,780.08         -1,701.86         39.59         1,704.00         0.47         0.42         0.21           5,872.00         91.90         179.40         3,783.29         -1,978.80         41.67         1,885.99         0.46         -0.	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,830.00 90.20 179.30 3,775.01 -1,128.97 36.50 1,129.12 0.91 0.53 0.747.4728.00 91.00 179.30 3,775.01 -1,224.95 37.67 1,225.11 0.83 0.83 0.00 4,822.00 89.40 179.50 3,775.67 -1,320.95 38.68 1,321.11 1.68 -1.67 0.21 4,917.00 89.50 179.80 3,775.99 -1,416.94 39.26 1,416.10 0.33 0.11 0.32 5,112.00 89.90 180.00 3,775.98 -1,510.94 39.26 1,416.10 0.33 0.11 0.32 5,112.00 89.90 180.00 3,776.98 -1,510.94 39.42 1,511.10 0.47 0.42 0.21 5,203.00 88.30 179.80 3,780.08 -1,701.86 39.59 1702.03 0.47 0.42 0.21 5,203.00 88.30 179.80 3,781.92 -1,793.84 40.31 1,794.01 1.31 1.20 -0.54 5,387.00 89.10 179.00 3,783.13 -1,885.92 41.67 1,885.99 0.46 0.33 -0.33 5,840.00 90.70 179.10 3,783.29 -1,978.80 43.22 1,978.98 1.72 0.13 5,887.00 90.70 179.10 3,783.29 -1,978.80 43.22 1,978.98 1.72 0.13 5,887.00 89.10 179.00 3,783.13 -1,885.92 41.67 1,885.99 1,702.03 0.47 0.42 0.33 5,848.00 90.30 180.90 3,779.44 2,162.75 44.18 2,162.93 2.38 1.72 41.63 5,887.00 89.10 180.90 3,778.48 2,162.75 44.18 2,162.93 2.38 1.74 1.83 5,577.00 88.80 181.20 3,780.17 2,225.73 2.44 2.255.90 1.64 1.61 0.32 5,848.00 89.30 180.90 3,778.48 2,162.75 44.18 2,162.93 2.38 1.74 1.63 5,848.00 89.30 180.80 3,781.88 2,346.70 40.89 2,346.86 0.70 0.85 0.44 5,941.00 89.30 180.90 3,784.18 2,263.96 39.83 2,499.84 0.32 0.00 -0.32 6,033.00 89.60 181.00 3,784.86 2,236.70 40.89 2,346.86 0.70 0.85 0.44 5,941.00 89.30 180.90 3,784.84 2,716.86 38.45 2,716.80 1.10 0.22 1.00 6,401.00 90.00 179.90 3,784.34 2,716.86 38.45 2,716.80 1.10 0.22 1.00 6,401.00 90.00 179.90 3,784.34 2,716.86 38.45 2,716.80 1.10 0.22 1.00 6,401.00 90.00 179.90 3,784.34 2,716.86 38.45 2,716.80 0.22 0.00 0.00 179.90 3,784.34 2,716.86 38.45 2,716.80 0.00 0.00 179.90 3,784.34 2,716.86 38.45 2,716.80 0.00 0.00 6,401.00 90.00 179.80 3,784.84 2,716.86 38.45 2,716.80 0.00 0.00 0.00 0.00 0.00 0.00 0.00	4,439.00	91.00	179.40	3,775.52	-937.98	35.42	938.13	1.39	-1.35	-0.31
4,726.00 91.00 179.30 3,774.01 -1,224.95 37.67 1,225.11 0.83 0.83 0.00 4,822.00 89.40 179.50 3,773.67 -1,320.95 38.68 1,321.11 1.68 -1.67 0.21 4,917.00 89.50 179.80 3,774.59 -1,1415.94 39.28 1,416.10 0.33 0.11 0.32 5,012.00 89.90 180.00 3,776.93 -1,606.91 39.42 1,511.10 0.47 0.42 0.21 5,108.00 87.90 180.00 3,776.93 -1,606.91 39.42 1,511.10 0.47 0.42 0.21 5,203.00 88.30 179.80 3,776.93 -1,606.91 39.42 1,607.08 2.08 -2.08 0.00 5,203.00 88.30 179.80 3,781.92 -1,793.84 40.31 1,794.01 1.31 1.20 -0.54 5,387.00 89.10 179.00 3,783.13 -1,885.82 41.67 1,885.99 0.46 -0.33 -0.33 5,480.00 90.70 179.10 3,783.29 -1,978.80 43.22 1,978.98 1.72 1.72 5,572.00 91.90 179.40 3,781.20 -2,070.77 44.42 2,070.95 1.34 1.30 0.33 5,686.00 90.30 180.90 3,779.44 -2,162.75 44.18 2,162.93 2.38 1.74 1.83 5,575.00 88.80 181.20 3,781.86 -2,267.07 44.98 2,246.82 6,55.90 1.64 -1.61 0.32 5,848.00 89.30 180.80 3,781.68 -2,446.70 40.89 2,346.86 0.70 0.55 -0.44 5,941.00 89.30 180.80 3,781.68 -2,446.70 40.89 2,346.86 0.70 0.55 -0.44 5,941.00 89.30 180.90 3,782.81 -2,439.69 39.83 2,439.84 0.32 0.00 -0.55 6,033.00 89.60 181.00 3,783.69 -2,531.68 36.53 2,531.83 0.63 0.53 6,125.00 89.80 180.90 3,784.68 -2,623.86 37.10 2,623.80 0.14 0.22 -0.11 6,125.00 89.80 180.90 3,784.68 -2,623.86 37.10 2,623.80 0.24 0.22 -0.11 6,218.00 90.00 179.90 3,784.86 -2,623.86 37.10 2,623.80 0.24 0.22 -0.11 6,218.00 90.00 179.90 3,784.58 -2,623.86 37.17 2,899.79 0.59 0.22 -0.55 6,493.00 89.80 176.80 3,785.94 -3,363.64 3.870 2,991.79 1.00 -0.65 0.76 6,770.00 91.00 177.90 3,785.89 -3,363.45 55.10 3,366.89 0.77 0.76 0.11 7,731.00 91.50 177.60 3,776.98 -3,363.94 55.27 2.99 -2.00 0.00 6,704.00 90.00 179.90 3,784.69 -3,363.94 55.27 2.99 -2.00 0.00 6,704.00 90.00 179.90 3,784.89 -3,363.94 55.27 2.99 -2.00 0.00 6,704.00 90.00 179.90 3,784.89 -3,363.94 55.27 2.99 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0	4,535.00	89.70	180.00	3,774.93	-1,033.97	35.92	1,034.12	1.49	-1.35	0.63
4,822.00	4,630.00	90.20	179.30	3,775.01	-1,128.97	36.50	1,129.12	0.91	0.53	-0.74
4,917.00	4,726.00	91.00	179.30	3,774.01	-1,224.95	37.67	1,225.11	0.83	0.83	0.00
5,012.00         89.90         180.00         3,775.08         -1,510.94         39.42         1,511.10         0.47         0.42         0.21           5,108.00         87.90         180.00         3,776.93         -1,606.91         39.59         1,702.03         0.47         0.42         0.21           5,205.00         89.40         179.30         3,781.92         -1,793.84         40.31         1,794.01         1.31         1.20         -0.54           5,387.00         89.10         179.00         3,783.13         -1,885.82         41.67         1,885.99         0.46         -0.33         -0.33           5,480.00         90.70         179.10         3,783.29         -1,978.80         43.22         1,978.98         1,72         1,72         0.11           5,572.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,572.00         98.80         181.20         3,781.68         -2,246.70         44.82         2,265.90         1.84         -1.61         0.32           5,848.00         88.90         181.20         3,781.68         -2,246.70         40.89         2,346.86         0.70         0.	4,822.00	89.40	179.50	3,773.67	-1,320.95	38.68	1,321.11	1.68	-1.67	0.21
\$\begin{array}{c c c c c c c c c c c c c c c c c c c	4,917.00	89.50	179.80	3,774.59	-1,415.94	39.26	1,416.10	0.33	0.11	0.32
5,203.00         88.30         179.80         3,780.08         -1,701.86         39.59         1,702.03         0.47         0.42         -0.21           5,285.00         89.40         179.30         3,781.92         -1,793.84         40.31         1,794.01         1.31         1.20         -0.53           5,887.00         89.10         179.10         3,783.29         -1,978.80         43.22         1,978.98         1.72         1.72         0.11           5,757.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,686.00         90.30         180.90         3,779.44         -2,162.75         44.18         2,162.93         2.38         -1.74         1.63           5,767.00         88.80         181.20         3,780.17         -2,255.73         42.48         2,255.90         1.64         -1.61         0.32           5,941.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,346.86         0.70         0.55         -0.44           5,941.00         89.80         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0	5,012.00	89.90	180.00	3,775.08	-1,510.94	39.42	1,511.10	0.47	0.42	0.21
5,295.00         89.40         179.30         3,781.92         -1,793.84         40.31         1,794.01         1.31         1.20         -0.54           5,887.00         89.10         179.00         3,783.13         -1,888.82         41.67         1,885.99         0.46         -0.33         -0.33           5,880.00         90.70         179.10         3,783.29         -1,978.89         43.22         1,978.99         1,722         1.12         0.11           5,572.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,684.00         90.30         180.90         3,779.44         -2,162.75         44.18         2,162.93         2.38         -1.74         1.63           5,787.00         88.80         181.20         3,780.91         -2,245.73         42.48         2,255.90         1.64         -1.61         0.25           5,941.00         89.30         180.50         3,783.89         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,125.00         89.80         180.90         3,784.34         -2,718.66         36.45         2,716.80         11.10 <td< td=""><td>5,108.00</td><td>87.90</td><td>180.00</td><td>3,776.93</td><td>-1,606.91</td><td>39.42</td><td>1,607.08</td><td>2.08</td><td>-2.08</td><td>0.00</td></td<>	5,108.00	87.90	180.00	3,776.93	-1,606.91	39.42	1,607.08	2.08	-2.08	0.00
5,387.00         89.10         179.00         3,783.13         -1,885.82         41.67         1,885.99         0.46         -0.33         -0.33         5,880.00         90.70         179.10         3,783.29         -1,978.80         43.22         1,978.99         1.72         1.72         0.11           5,672.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,684.00         90.30         180.90         3,780.47         -2,265.73         42.48         2,162.93         2.38         -1.74         1.63           5,684.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,346.86         0.70         0.55         -0.44           5,941.00         89.30         180.50         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,125.00         89.80         180.90         3,784.48         -2,216.86         36.63         2,531.83         0.63         0.33         0.54           6,213.00         90.00         179.90         3,784.84         -2,716.86         36.45         2,716.80         1.10         0.22 <td< td=""><td>5,203.00</td><td>88.30</td><td>179.80</td><td>3,780.08</td><td>-1,701.86</td><td>39.59</td><td>1,702.03</td><td>0.47</td><td>0.42</td><td>-0.21</td></td<>	5,203.00	88.30	179.80	3,780.08	-1,701.86	39.59	1,702.03	0.47	0.42	-0.21
5,480.00         90.70         179.10         3,783.29         -1,978.80         43.22         1,978.98         1.72         1.72         0.11           5,572.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,686.00         90.30         180.90         3,778.44         -2,162.75         44.18         2,162.93         2.38         -1.74         1.63           5,686.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,255.90         1.64         -1.61         0.32           5,941.00         89.30         180.60         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.55           6,033.00         89.60         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,126.00         89.80         180.90         3,784.18         -2,623.66         37.10         2,623.80         0.24         0.22         -0.11           6,218.00         90.00         179.40         3,784.60         -2,808.66         36.61         2,808.80         0.22         -0	5,295.00	89.40	179.30	3,781.92	-1,793.84	40.31	1,794.01	1.31	1.20	-0.54
5,480.00         90.70         179.10         3,783.29         -1,978.80         43.22         1,978.98         1,72         1,72         0.11           5,572.00         91.90         179.40         3,781.20         -2,070.77         44.42         2,070.95         1.34         1.30         0.33           5,684.00         90.30         180.90         3,779.44         -2,162.75         44.18         2,162.93         2.38         -1,74         1.63           5,787.00         88.80         181.20         3,780.17         -2,255.73         42.48         2,255.90         1.64         -1.61         0.32           5,848.00         89.30         180.60         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.55           6,931.00         89.60         181.00         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,125.00         89.80         180.90         3,784.18         -2,253.66         37.10         2,623.80         0.24         0.22         -0.11           6,218.00         90.00         179.90         3,784.50         -2,806.66         36.61         2,808.80         179.90 <td< td=""><td>5,387.00</td><td>89.10</td><td>179.00</td><td>3,783.13</td><td>-1,885.82</td><td>41.67</td><td>1,885.99</td><td>0.46</td><td>-0.33</td><td>-0.33</td></td<>	5,387.00	89.10	179.00	3,783.13	-1,885.82	41.67	1,885.99	0.46	-0.33	-0.33
6,684.00         90.30         180.90         3,779.44         -2,162.75         44.18         2,162.93         2.38         -1.74         1.63         5,757.00         88.80         181.20         3,780.17         -2,255.73         42.48         2,255.90         1.64         -1.61         0.32         5,848.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,346.86         0.70         0.55         -0.44         5,941.00         89.30         180.50         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,033.00         89.60         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54         6,125.00         89.80         180.90         3,784.34         -2,716.96         36.45         2,716.80         0.024         0.22         -0.21         -0.16         6,210.00         90.00         179.90         3,784.50         -2,808.66         36.46         2,208.80         0.22         -0.22         0.02         0.02         6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         0.22         0.02         6,	5,480.00	90.70	179.10	3,783.29	-1,978.80	43.22	1,978.98	1.72	1.72	0.11
5,757.00         88.80         181.20         3,780.17         -2,255.73         42.48         2,255.90         1.64         -1.61         0.32           5,848.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,346.86         0.70         0.55         -0.44           5,941.00         89.30         180.50         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,033.00         89.60         181.00         3,784.84         -2,631.68         36.53         2,531.83         0.24         0.22         -0.11           6,215.00         89.80         180.90         3,784.34         -2,716.66         36.45         2,716.80         1.10         0.22         -0.22         -0.11           6,310.00         89.80         179.90         3,784.50         -2,808.66         36.45         2,716.80         1.10         0.22         -0.22         0.00           6,493.00         89.80         179.90         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.25           6,586.00         89.40         178.70         3,785.14         -2,991.64         38.70         2,	5,572.00	91.90	179.40	3,781.20	-2,070.77	44.42	2,070.95	1.34	1.30	0.33
5,848.00         89.30         180.80         3,781.68         -2,346.70         40.89         2,346.86         0.70         0.55         -0.44           5,941.00         89.30         180.50         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,033.00         89.60         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,125.00         89.80         180.90         3,784.34         -2,716.66         36.45         2,716.80         1.10         0.22         -0.21           6,218.00         90.00         179.90         3,784.56         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.22         -0.55           6,493.00         89.40         178.70         3,785.38         -3,084.61         40.89         3,084.77         0.97         0.97         0.97         -0.76         6,586.00         90.30         178.00         3,783.88         -3,084.61         40.89         3,084.77	5,664.00	90.30	180.90	3,779.44	-2,162.75	44.18	2,162.93	2.38	-1.74	1.63
5,941.00         89.30         180.50         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,033.00         89.60         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,125.00         89.80         180.90         3,784.18         -2,623.66         37.10         2,623.80         0.24         0.22         -0.11           6,218.00         90.00         179.90         3,784.50         -2,808.66         36.45         2,716.80         1.10         0.22         -0.10           6,310.00         89.80         179.90         3,784.50         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.56         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,696.00         90.30         178.60         3,785.38         -3,084.61         40.89         3,084.77         0.97         0.97         0.17           6,670.00         91.00         177.90         3,783.86         -3,084.61         40.89         3,084.77         0.97         0	5,757.00	88.80	181.20	3,780.17	-2,255.73	42.48	2,255.90	1.64	-1.61	0.32
5,941.00         89.30         180.50         3,782.81         -2,439.69         39.83         2,439.84         0.32         0.00         -0.32           6,033.00         89.60         181.00         3,783.69         -2,531.68         38.63         2,531.83         0.63         0.33         0.54           6,125.00         89.80         180.90         3,784.18         -2,623.66         37.10         2,623.80         0.24         0.22         -0.11           6,218.00         90.00         179.90         3,784.50         -2,808.66         36.45         2,716.80         1.10         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.22         0.00           6,493.00         89.40         178.70         3,785.14         -2,991.64         38.70         2,991.79         1.00         -0.65         -0.76           6,586.00         90.30         178.60         3,784.90         -3,176.57         43.62         3,176.74         0.65         0.00         -0.65           6,770.00         91.00         177.90         3,784.69         -3,268.51         46.91         3,2		89.30	180.80	3,781.68	-2,346.70	40.89	2,346.86	0.70	0.55	-0.44
6,125.00         89.80         180.90         3,784.18         -2,623.66         37.10         2,623.80         0.24         0.22         -0.11         6,218.00         90.00         179.90         3,784.50         -2,208.66         36.45         2,716.80         1.10         0.22         -1.08         6,310.00         89.80         179.90         3,784.50         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00         6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.22         0.00         6,401.00         90.00         178.60         3,785.14         -2,991.64         38.70         2,991.79         1.00         -0.65         -0.76         6,586.00         90.30         178.60         3,785.38         -3,084.61         40.89         3,084.77         0.97         0.97         -0.71         6,678.00         90.30         178.00         3,784.90         -3,176.57         43.62         3,176.74         0.65         0.00         -0.65         6,770.00         91.00         177.90         3,783.86         -3,268.51         46.91         3,268.69         0.77         0.76         0.21         6,954.00         89.80         178.40		89.30	180.50	3,782.81	-2,439.69	39.83	2,439.84	0.32	0.00	-0.32
6,218.00         90.00         179.90         3,784.34         -2,716.66         36.45         2,716.80         1.10         0.22         -1.08           6,310.00         89.80         179.90         3,784.50         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.55           6,493.00         89.40         178.70         3,785.14         -2,991.64         38.70         2,991.79         1.00         -0.65         -0.76           6,586.00         90.30         178.60         3,786.38         -3,084.61         40.89         3,084.77         0.97         0.97         -0.11           6,670.00         90.30         178.00         3,784.90         -3,176.57         43.62         3,176.74         0.65         0.00         -0.65           6,770.00         91.00         177.90         3,783.86         -3,268.51         46.91         3,286.69         0.77         0.76         0.11           6,852.00         91.70         178.10         3,780.49         -3,452.37         52.93         3,452.57         2.09 <td< td=""><td>6,033.00</td><td>89.60</td><td>181.00</td><td>3,783.69</td><td>-2,531.68</td><td>38.63</td><td>2,531.83</td><td>0.63</td><td>0.33</td><td>0.54</td></td<>	6,033.00	89.60	181.00	3,783.69	-2,531.68	38.63	2,531.83	0.63	0.33	0.54
6,218.00         90.00         179.90         3,784.34         -2,716.66         36.45         2,716.80         1.10         0.22         -1.08           6,310.00         89.80         179.90         3,784.50         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.55           6,493.00         89.40         178.70         3,785.14         -2,991.64         38.70         2,991.79         1.00         -0.65         -0.76           6,586.00         90.30         178.60         3,785.38         -3,084.61         40.89         3,084.77         0.97         0.97         -0.11           6,678.00         90.30         178.00         3,784.90         -3,176.57         43.62         3,176.74         0.65         0.00         -0.65           6,770.00         91.00         177.90         3,783.86         -3,268.51         49.91         3,268.69         0.77         0.76         0.21           6,954.00         89.80         178.40         3,780.49         -3,452.37         52.93         3,452.57         2.09 <td< td=""><td>6,125.00</td><td>89.80</td><td>180.90</td><td>3,784.18</td><td>-2,623.66</td><td>37.10</td><td>2,623.80</td><td>0.24</td><td>0.22</td><td>-0.11</td></td<>	6,125.00	89.80	180.90	3,784.18	-2,623.66	37.10	2,623.80	0.24	0.22	-0.11
6,310.00         89.80         179.90         3,784.50         -2,808.66         36.61         2,808.80         0.22         -0.22         0.00           6,401.00         90.00         179.40         3,784.66         -2,899.66         37.17         2,899.79         0.59         0.22         -0.55           6,493.00         89.40         178.70         3,785.14         -2,991.64         38.70         2,991.79         1.00         -0.65         -0.76           6,586.00         90.30         178.60         3,785.38         -3,084.61         40.89         3,084.77         0.97         0.97         -0.11           6,678.00         90.30         178.00         3,784.90         -3,176.57         43.62         3,176.74         0.65         0.00         -0.65           6,770.00         91.00         177.90         3,783.86         -3,268.51         46.91         3,268.69         0.77         0.76         -0.11           6,862.00         91.70         178.10         3,781.69         -3,452.37         52.93         3,452.57         2.09         -2.07         0.33           7,047.00         90.10         178.80         3,779.12         -3,537.32         56.96         3,637.54         0.66 <t< td=""><td></td><td>90.00</td><td>179.90</td><td>3,784.34</td><td>-2,716.66</td><td>36.45</td><td>2,716.80</td><td>1.10</td><td>0.22</td><td>-1.08</td></t<>		90.00	179.90	3,784.34	-2,716.66	36.45	2,716.80	1.10	0.22	-1.08
6,401.00 90.00 179.40 3,784.66 -2,899.66 37.17 2,899.79 0.59 0.22 -0.55   6,493.00 89.40 178.70 3,785.14 -2,991.64 38.70 2,991.79 1.00 -0.65 -0.76   6,586.00 90.30 178.60 3,785.38 -3,084.61 40.89 3,084.77 0.97 0.97 -0.11   6,678.00 90.30 178.00 3,784.90 -3,176.57 43.62 3,176.74 0.65 0.00 -0.65   6,770.00 91.00 177.90 3,783.86 -3,268.51 46.91 3,268.69 0.77 0.76 -0.11   6,862.00 91.70 178.10 3,781.69 -3,360.42 50.12 3,360.62 0.79 0.76 0.22   6,954.00 89.80 178.40 3,780.49 -3,452.37 52.93 3,452.57 2.09 -2.07 0.33   7,047.00 90.10 178.90 3,780.57 -3,545.34 55.12 3,545.56 0.63 0.32 0.54   7,139.00 90.70 178.80 3,779.12 -3,729.29 59.29 3,729.52 0.70 -0.43 -0.54   7,323.00 90.50 177.90 3,776.80 -3,917.14 66.11 3,917.41 1.09 1.04 -0.31   7,514.00 90.00 178.10 3,776.80 -3,917.14 66.11 3,917.41 1.09 1.04 -0.31   7,514.00 90.00 178.10 3,775.56 -4,012.07 69.67 4,012.34 1.66 -1.58 0.53   7,610.00 91.50 177.40 3,774.30 -4,107.98 73.44 4,108.27 1.72 1.56 -0.73   7,081.00 90.50 178.80 3,773.30 -4,203.92 76.37 4,204.23 2.58 -1.88 1.77   7,801.00 90.50 178.80 3,773.13 -4,298.90 78.20 4,299.22 0.94 0.84 -0.42   7,899.00 88.80 178.80 3,773.00 -4,396.87 80.33 4,397.20 1.94 -1.94 0.10   8,088.00 89.40 178.60 3,775.52 -4,683.76 86.85 4,684.11 0.41 0.41 0.41 0.00	5 5 5 5 6				-2,808.66	36.61		0.22	-0.22	0.00
6,586.00 90.30 178.60 3,785.38 -3,084.61 40.89 3,084.77 0.97 0.97 -0.11 6,678.00 90.30 178.00 3,784.90 -3,176.57 43.62 3,176.74 0.65 0.00 -0.65 6,770.00 91.00 177.90 3,783.86 -3,268.51 46.91 3,268.69 0.77 0.76 -0.11 6,862.00 91.70 178.10 3,781.69 -3,360.42 50.12 3,360.62 0.79 0.76 0.22 6,954.00 89.80 178.40 3,780.49 -3,452.37 52.93 3,452.57 2.09 -2.07 0.33 7,047.00 90.10 178.90 3,780.57 -3,545.34 55.12 3,545.56 0.63 0.32 0.54 7,139.00 90.70 178.80 3,779.92 -3,637.32 56.96 3,637.54 0.66 0.65 -0.11 7,231.00 90.30 178.30 3,779.12 -3,729.29 59.29 3,729.52 0.70 -0.43 -0.54 7,323.00 90.50 177.90 3,778.48 -3,821.23 62.34 3,821.48 0.49 0.22 -0.43 7,419.00 91.50 177.60 3,776.80 -3,917.14 66.11 3,917.41 1.09 1.04 -0.31 7,514.00 90.00 178.10 3,775.56 -4,012.07 69.67 4,012.34 1.66 -1.58 0.53 7,610.00 91.50 177.40 3,774.30 -4,107.98 73.44 4,108.27 1.72 1.56 -0.73 7,706.00 89.70 178.80 3,773.30 -4,203.92 76.37 4,204.23 2.58 -1.88 1.77 7,801.00 90.50 178.80 3,773.30 -4,203.92 76.37 4,204.23 2.58 -1.88 1.77 7,801.00 90.50 178.80 3,773.10 -4,396.87 80.33 4,397.20 1.94 -1.94 0.10 7,993.00 88.80 178.80 3,776.04 -4,490.83 82.30 4,491.16 0.21 0.21 0.00 8,088.00 89.40 178.60 3,775.53 -4,585.79 84.46 4,586.13 0.67 0.63 -0.21 8,186.00 89.80 178.60 3,778.21 -4,683.76 86.85 4,684.11 0.41 0.41 0.41						37.17		0.59	0.22	-0.55
6,678.00 90.30 178.00 3,784.90 -3,176.57 43.62 3,176.74 0.65 0.00 -0.65 6,770.00 91.00 177.90 3,783.86 -3,268.51 46.91 3,268.69 0.77 0.76 -0.11 6,862.00 91.70 178.10 3,781.69 -3,360.42 50.12 3,360.62 0.79 0.76 0.22 6,954.00 89.80 178.40 3,780.49 -3,452.37 52.93 3,452.57 2.09 -2.07 0.33 7,047.00 90.10 178.90 3,780.57 -3,545.34 55.12 3,545.56 0.63 0.32 0.54 7,139.00 90.70 178.80 3,779.92 -3,637.32 56.96 3,637.54 0.66 0.65 -0.11 7,231.00 90.30 178.30 3,779.12 -3,729.29 59.29 3,729.52 0.70 -0.43 -0.54 7,323.00 90.50 177.90 3,778.48 -3,821.23 62.34 3,821.48 0.49 0.22 -0.43 7,419.00 91.50 177.60 3,776.80 -3,917.14 66.11 3,917.41 1.09 1.04 -0.31 7,514.00 90.00 178.10 3,775.56 -4,012.07 69.67 4,012.34 1.66 -1.58 0.53 7,610.00 91.50 177.40 3,774.30 -4,107.98 73.44 4,108.27 1.72 1.56 -0.73 7,706.00 89.70 179.10 3,773.30 -4,203.92 76.37 4,204.23 2.58 -1.88 1.77 7,801.00 90.50 178.80 3,773.13 -4,298.90 78.20 4,299.22 0.94 0.84 -0.42 7,899.00 88.60 178.80 3,776.04 -4,490.83 82.30 4,491.16 0.21 0.21 0.00 8,088.00 89.40 178.60 3,775.21 -4,683.76 86.85 4,684.11 0.41 0.41 0.41 0.00	6,493.00	89.40	178.70	3,785.14	-2,991.64	38.70	2,991.79	1.00	-0.65	-0.76
6,770.00         91.00         177.90         3,783.86         -3,268.51         46.91         3,268.69         0.77         0.76         -0.11           6,862.00         91.70         178.10         3,781.69         -3,360.42         50.12         3,360.62         0.79         0.76         0.22           6,954.00         89.80         178.40         3,780.49         -3,452.37         52.93         3,452.57         2.09         -2.07         0.33           7,047.00         90.10         178.90         3,780.57         -3,545.34         55.12         3,545.56         0.63         0.32         0.54           7,139.00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,778.48         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09	6,586.00	90.30	178.60	3,785.38	-3,084.61	40.89	3,084.77	0.97	0.97	-0.11
6,862.00         91.70         178.10         3,781.69         -3,360.42         50.12         3,360.62         0.79         0.76         0.22           6,954.00         89.80         178.40         3,780.49         -3,452.37         52.93         3,452.57         2.09         -2.07         0.33           7,047.00         90.10         178.90         3,780.57         -3,545.34         55.12         3,545.56         0.63         0.32         0.54           7,139.00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.56	6,678.00	90.30	178.00	3,784.90	-3,176.57	43.62	3,176.74	0.65	0.00	-0.65
6,862.00         91.70         178.10         3,781.69         -3,360.42         50.12         3,360.62         0.79         0.76         0.22           6,954.00         89.80         178.40         3,780.49         -3,452.37         52.93         3,452.57         2.09         -2.07         0.33           7,047.00         90.10         178.90         3,780.57         -3,545.34         55.12         3,545.56         0.63         0.32         0.54           7,139.00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,778.48         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66	6,770.00	91.00	177.90	3,783.86	-3,268.51	46.91	3,268.69	0.77	0.76	-0.11
7,047.00         90.10         178.90         3,780.57         -3,545.34         55.12         3,545.56         0.63         0.32         0.54           7,139.00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,776.80         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>50.12</td><td>3,360.62</td><td>0.79</td><td>0.76</td><td>0.22</td></td<>						50.12	3,360.62	0.79	0.76	0.22
7,047.00         90.10         178.90         3,780.57         -3,545.34         55.12         3,545.56         0.63         0.32         0.54           7,139.00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,776.80         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,801.00         90.50         178.70         3,773.30         -4,203.92         76.37         4,204.23         2.58 <td< td=""><td>6,954.00</td><td>89.80</td><td>178.40</td><td>3,780.49</td><td>-3,452.37</td><td>52.93</td><td>3,452.57</td><td>2.09</td><td>-2.07</td><td>0.33</td></td<>	6,954.00	89.80	178.40	3,780.49	-3,452.37	52.93	3,452.57	2.09	-2.07	0.33
7,139,00         90.70         178.80         3,779.92         -3,637.32         56.96         3,637.54         0.66         0.65         -0.11           7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,778.48         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,891.00         88.60         178.80         3,773.90         -4,396.87         80.33         4,397.20         1.94 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>55.12</td><td>3,545.56</td><td>0.63</td><td>0.32</td><td>0.54</td></t<>						55.12	3,545.56	0.63	0.32	0.54
7,231.00         90.30         178.30         3,779.12         -3,729.29         59.29         3,729.52         0.70         -0.43         -0.54           7,323.00         90.50         177.90         3,778.48         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21 <t< td=""><td></td><td>90.70</td><td>178.80</td><td>3,779.92</td><td>-3,637.32</td><td>56.96</td><td>3,637.54</td><td>0.66</td><td>0.65</td><td>-0.11</td></t<>		90.70	178.80	3,779.92	-3,637.32	56.96	3,637.54	0.66	0.65	-0.11
7,323.00         90.50         177.90         3,778.48         -3,821.23         62.34         3,821.48         0.49         0.22         -0.43           7,419.00         91.50         177.60         3,776.80         -3,917.14         66.11         3,917.41         1.09         1.04         -0.31           7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,776.04         -4,396.87         80.33         4,397.20         1.94         -1.94         0.10           7,993.00         88.80         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21 <td< td=""><td></td><td>90.30</td><td>178.30</td><td>3,779.12</td><td>-3,729.29</td><td>59.29</td><td>3,729.52</td><td>0.70</td><td>-0.43</td><td>-0.54</td></td<>		90.30	178.30	3,779.12	-3,729.29	59.29	3,729.52	0.70	-0.43	-0.54
7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,773.90         -4,396.87         80.33         4,397.20         1.94         -1.94         0.10           7,993.00         88.80         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21         0.21         0.00           8,088.00         89.40         178.60         3,777.53         -4,585.79         84.46         4,586.13         0.67         0.63         -0.21           8,186.00         89.80         178.60         3,778.21         -4,683.76         86.85         4,684.11         0.41						62.34		0.49	0.22	-0.43
7,514.00         90.00         178.10         3,775.56         -4,012.07         69.67         4,012.34         1.66         -1.58         0.53           7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,773.90         -4,396.87         80.33         4,397.20         1.94         -1.94         0.10           7,993.00         88.80         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21         0.21         0.00           8,088.00         89.40         178.60         3,777.53         -4,585.79         84.46         4,586.13         0.67         0.63         -0.21           8,186.00         89.80         178.60         3,778.21         -4,683.76         86.85         4,684.11         0.41	7,419.00	91.50	177.60	3,776.80	-3,917.14	66.11	3,917.41	1.09	1.04	-0.31
7,610.00         91.50         177.40         3,774.30         -4,107.98         73.44         4,108.27         1.72         1.56         -0.73           7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,773.90         -4,396.87         80.33         4,397.20         1.94         -1.94         0.10           7,993.00         88.80         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21         0.21         0.00           8,088.00         89.40         178.60         3,777.53         -4,585.79         84.46         4,586.13         0.67         0.63         -0.21           8,186.00         89.80         178.60         3,778.21         -4,683.76         86.85         4,684.11         0.41         0.41         0.00				3,775.56		69.67	4,012.34	1.66	-1.58	0.53
7,706.00         89.70         179.10         3,773.30         -4,203.92         76.37         4,204.23         2.58         -1.88         1.77           7,801.00         90.50         178.70         3,773.13         -4,298.90         78.20         4,299.22         0.94         0.84         -0.42           7,899.00         88.60         178.80         3,773.90         -4,396.87         80.33         4,397.20         1.94         -1.94         0.10           7,993.00         88.80         178.80         3,776.04         -4,490.83         82.30         4,491.16         0.21         0.21         0.00           8,088.00         89.40         178.60         3,777.53         -4,585.79         84.46         4,586.13         0.67         0.63         -0.21           8,186.00         89.80         178.60         3,778.21         -4,683.76         86.85         4,684.11         0.41         0.41         0.41         0.00									1.56	-0.73
7,801.00       90.50       178.70       3,773.13       -4,298.90       78.20       4,299.22       0.94       0.84       -0.42         7,899.00       88.60       178.80       3,773.90       -4,396.87       80.33       4,397.20       1.94       -1.94       0.10         7,993.00       88.80       178.80       3,776.04       -4,490.83       82.30       4,491.16       0.21       0.21       0.00         8,088.00       89.40       178.60       3,777.53       -4,585.79       84.46       4,586.13       0.67       0.63       -0.21         8,186.00       89.80       178.60       3,778.21       -4,683.76       86.85       4,684.11       0.41       0.41       0.41       0.00										1.77
7,993.00     88.80     178.80     3,776.04     -4,490.83     82.30     4,491.16     0.21     0.21     0.00       8,088.00     89.40     178.60     3,777.53     -4,585.79     84.46     4,586.13     0.67     0.63     -0.21       8,186.00     89.80     178.60     3,778.21     -4,683.76     86.85     4,684.11     0.41     0.41     0.41     0.00										-0.42
7,993.00     88.80     178.80     3,776.04     -4,490.83     82.30     4,491.16     0.21     0.21     0.00       8,088.00     89.40     178.60     3,777.53     -4,585.79     84.46     4,586.13     0.67     0.63     -0.21       8,186.00     89.80     178.60     3,778.21     -4,683.76     86.85     4,684.11     0.41     0.41     0.41	7,899.00	88.60	178.80	3,773.90	-4,396.87	80.33	4,397.20	1.94	-1.94	0.10
8,088.00     89.40     178.60     3,777.53     -4,585.79     84.46     4,586.13     0.67     0.63     -0.21       8,186.00     89.80     178.60     3,778.21     -4,683.76     86.85     4,684.11     0.41     0.41     0.41							4,491.16	0.21	0.21	0.00
8,186.00 89.80 178.60 3,778.21 -4,683.76 86.85 4,684.11 0.41 0.41 0.00					-4,585.79		4,586.13		0.63	-0.21
										0.00
										-0.57



Company:

Unit Petroleum

Project:

Reno County, Kansas [NAD 83]

Site:

Section 30 T25S-R10W

Well:

Black Farms 30-1H

Wellbore: OH
Design: OH

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Database:

Well Black Farms 30-1H

20' KB @ 1781.00usft (UDI 303) 20' KB @ 1781.00usft (UDI 303)

Grid

Minimum Curvature

EDM 5000.1 Single User Db

-				
-	24	PM	ey	
v	u	EV	C y	
			100	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.35 <b>BF 30-1H PB</b> I	90.20 HL	178.10	3,778.12	-4,798.05	90.26	4,798.42	0.00	0.00	0.00
8,320.00 Projection to	90.20 <b>TD</b>	178.10	3,778.05	-4,817.70	90.91	4,818.06	0.00	0.00	0.00

esign Annotat	Measured	Vertical	Local Coo	rdinates	
	Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
	8,273.00	3,778.21	-4,770.72	89.36	Last Inwell Survey
	8,320.00	3,778.05	-4,817.70	90.91	Projection to TD

Checked By:	Approved By:	Date:	

## ALLIED OIL & GAS SERVICES, LLC 062631

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

<b>SERVICE</b>	P	IIC	NT:	
.A.	٠.	G.		1

3001	nlare, i	EAA3 /00	192			TA Ding	<b>-</b>
DATE!-2-1作	SEC.	TWP.	RANGE 0	CALLED OUT	ON LOCATION	423084	JOB FINISH
Black LEASE Farm		200 111		th 2E, 15, 6		COUNTY	STATE
OLD OR NEW (C		30-1 H	LOCATION	m × E, 13,	And E	Reno	Ka.
OLD OK NEW (C	itcle one)						
CONTRACTOR	Diasi			owner 5	Elms.		
TYPE OF JOB 🕽							
HOLE SIZE		T.D	8320'	CEMENT		•	
CASING SIZE식	3 4 5 1/2		PTH <b>?</b> 320 '	AMOUNT O	RDERED 510	in Class	<del>- H</del>
TUBING SIZE			PTH	o.a?o.j	ts1, 0.6% F 0-1100	16 <u>0</u>	
DRILL PIPE			PTH	1000 A D.	0-1100	<u>50°5we</u>	<del></del>
TOOL PRES. MAX 21s			PTH NIMUM <b>)</b> Scot		-0 16	6 1 i 2 m	ם כום בו
MEAS. LINE	<u> </u>		OE JOINT SO.3		there It Si	_	
CEMENT LEFT I	N CSG Sc	J 34,	OF JOINT '20'5	GEL		@ @	
PERFS.	11 000.03	<u> </u>		CHLORIDE			
DISPLACEMENT	154.	15		ASC			
		JIPMENT	•	FL-160	288 H		5443.20
	Jya	A ICERAL BE		5251	Gle #	@ 17.5S	
DIMEDERATION	OF1 / P1 / P1		, , ,	- Sugar	<i>\$</i> 0 <sup>₹</sup>	_@ <u></u> &	
PUMP TRUCK			in Dechum	oop-va -			1408.8
# S97 BULK TRUCK	HELPER		= Eddy		1	@	
#870-844	DDIVED		Cayer			@	
BULK TRUCK	DRIVER	حن2لــــــــــــــــــــــــــــــــــــ	rayes			@	
#	DRIVER					@	100- 22
					520.31		7290,32
				MILEAGE _	1208.69		3/41.03
S	_	MARKS:	* * _ * _ *			IOIAE	23,880 4
150-11012 of 1	13-11°.	<u> Crys 3</u>	874 y 24, 30 c	#	anny		
9 ESS IR LES				<del>-</del>	SERV	ICE	
Funda XOE	<u> </u>	7100-2	MOSH 2010	April OF I	on Ø3==+		
21/100 0000	<u>. n . O . d.</u>	20 3451,	1- P. 1 1: 10	Seen PUMP TRUC	OB 8320,		5898.75
Rolling of Box	- Straker	mo u	of the la	nde EXTRA FOO	TAGE	@	2348.73
Phis et do	TE Rel	3	flow Hale	MILEAGE	5	@ <i></i>	-385.00
1300	J		Carlo Lianz	MANIFOLD			
					7		MC
				LVM			220,00
CHARGE TO: L	ii- R	0.7.					
Charge 10: 12	NA	-colorer	<del></del>			TOTAL	6503.73
STREET				automator —		101111	
CITY	CT.	'ATE	ZIP				
C:11		/ · · · · · · · · · · · · · · · · · · ·			PLUG & FLOA	AT EQUIPMEN	T
			TXonh				
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To: Allied Oil &	Gas Sami	ices T.I.C				@	
			nenting equipme	nt -		@	
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			o assist owner of he above work w				
			of owner agent o			TOTAL	·
			and the "GENERA				
			d on the reverse s	CATECTAV	(If Any)		
I ERIVIS AIND C	ONDINO	130 115150	a on the teactor 8	100.	RGES # 30		
\	1 1-	Δ/	1				
PRINTED NAME	6101	<u>1701</u>	ØAY	DISCOUNT	\$ 12,153	58 IFPAI	D IN 30 DAYS
	100	, A	)		\$ 18,230	37	
SIGNATURE	2	$M_{\mathbf{a}}$	v		41 , 07 27,	- <sub>6</sub> m g	•
CICILIZIONE X	UNIM	<i>,</i> ∨ ∕\∧@ ₹ ₹	7				

## ALLIED OIL & GAS SERVICES, LLC 062629

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE TEXAS 76092

SERVICE POINT:

SOUTI	HLAKE, T	EXAS 760	92			Break	end is
DATE 128-13	SEC.	TWP.	RANGE 10 W	CALLED OUT	ON LOCATION 406 PM	10B START	JOB FINISH
LEASE FORMS	WELL#3	0-1-H	LOCATION S 9	اء ۱ د. د د ن	W/	COUNTY	STATE
OLD OR NEW C	rcle one)		Jyn	in 2w, 15	<i>/</i>	- Cons	179
CONTRACTOR \	ni + N	S- #3	53	OWNER	<u> </u>		
TYPE OF JOB	2722ma	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	93	OWNER	Jone		
HOLE SIZE			4058'	- CEMENT			
CASING SIZE 7	1		TH 4028 .		DERED 1120 AS		A.
TUBING SIZE		DEP			DEKED HOUSE	~ <u> </u>	a
DRILL PIPE		DEP		- 200 07 60	w, 10%50	<u> </u>	
TOOL		DEP					
PRES. MAX 75	() Ti		IMUM (coo #	COMMON	110	ab en	28141 00
MEAS. LINE		SHO	E JOINT 2'	POZMIX	140		
CEMENT LEFT IN	CSG.2 '	C2-52	St~.	GEL		_@	***************************************
PERFS.		3.500	77000	_ CHLORIDE _		@ 	
DISPLACEMENT	155 1/2						
		,		_ ASC	16		7-11-
	EQUI	IPMENT		Carprey	16	~ @ <b>೨</b> ∇₹₽₽	601,60
	CEMENTE	R	- Dichon			_	
	HELPER	Ken-	~ 60 hu-				
BULK TRUCK							
<u> 1</u>	DRIVER	Don 9	Cenper			_@	
BULK TRUCK			•	***************************************		_ @	
#I	ORIVER -	Tem -	Tajanon	TIANDI ING	1.00		11000
				- HANDLING_		@ 2.48	
		ARKS:		MILEAGE	414.39		1077.42
Pumper 10 hb Clave to 5500 Plug. Nigla Vlug of 720	ار استخدم برد	202020 76 H Att	t Released	DEPTH OF JO	SERVI B 4058'	CE	
wat as wo		deres à	tron Hory				2765.75
				EXTRA FOOTA		_@	
					<u> 50</u>		<u> </u>
				the forth		@ <u>275,6</u>	<u> 275.00</u>
HARGE TO: Do	1× 0=	Ti al com		LUM	50	@ <del>4.40</del>	_220°°
STREET	~~~			-		TOTAL	3645,75
CITY	STA1	re.	7IP	•			
AFF! 13			Bah	P	LUG & FLOAT	EQUIPMENT	har.
1112112	1010	<b>(</b>	<	7,			
				- Simerry F	<u> </u>	EZ.54[®.	712.53
				2-Three Lo	>c%>	_COEB_@	166.14
o: Allied Oil & G				Blishfrey P.	lua	<u>24,72</u> @	99,45
ou are hereby req	uested to i	rent ceme	nting equipment		1	@	-
nd furnish cement	er and hel	per(s) to a	issist owner or			@	
ontractor to do wo	rk as is lis	sted. The	ahove work was				
one to satisfaction						TOTAL	478.12
ontractor. I have r	ead and u	nderstand	the "GENED AT				
ERMS AND CON				SALES TAX (If	Anv)		
LANGUARY CUL	ULLIUN)	, iistea o	n me reverse side.			· -	<del></del>
\ ;	1/20	<u> </u>	ama (11 A	TOTAL CHARG	ES # 9/63	(2).1	
RINTED NAME	efflist.	NGS		DISCOUNT #	3248.57	IF PAID	IN 30 DAYS
IGNATURE J	101	7L	Mille	12	2,007,14		

# ALLIED OIL & GAS SERVICES, LLC 062628 Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999 SOUTHLAKE, TEXAS 76092

SERVICE POINT: Kareat Bund Ke

		•
DATE 12-13-13 SEC. TWR. RANGE	CALLED OUT ON LOCATION SIGN SIGN	JOB START JOB FINISH
Black LEASE From WELL#30-)-H LOCATION SY OLD ORNEW(Circle one)	10.00	COUNTY STATE
OLD ORNEW (Circle one)	wie dwet, I south	Henry Kg
(Construction)	Tento	
CONTRACTOR UNIX #303	OWNER Some	
TYPE OF JOB Sugar		
HOLE SIZE T.D. (\$35)  CASING SIZE 95/8 DEPTH (\$35)	CEMENT	
CASING SIZE 978 DEPTH 15:30' TUBING SIZE DEPTH		= 400 380 6700
DRILL PIPE DEPTH	250NAMS 220CC, 14 F 9 250Nh Clant 250C	ナスたんぶなくんん
TOOL DEPTH	- according to	- 14 " FABREY MA
PRES. MAX 700# MINIMUM LOOF	COMMON_280_	@ 12.70 \$5012.00
MEAS. LINE SHOE JOINT 2 3		@
CEMENT LEFT IN CSG. 2 3	GEL	@
PERFS.		@ 64.00 1960 es
DISPLACEMENT 118.81 bbb		@
EQUIPMENT	AMA Elosad 145	@25.90 7770.0° @12.97 5430.65
DIA DE TOUGH GENERAL DE LE COMPANION DE LA COM		@ 2.00 424.60
PUMPTRUCK CEMENTER Time Bushing # 3/0/0 HELPER Varion FORV		@
# Sloto HELPER Variably BULK TRUCK		@
#544-198 DRIVER Jam Tuerin		@
BULK TRUCK		@
#599 DRIVER Don Compan		@
Show I would	MILEAGE 1488.09	2.60 13683 42
REMARKS:	MILLAGE FINAL	
Rea 1530 of 958 cog. Broke Circulate	,	TOTAL 19,864.9
Panged Shall HEOV Wiked 300 Mr.	SERVIC	r
AMD 290 Syard, 290 NAMS, 250CC. 14	#	25
Flowed of Pollowed By 280 in clay	L DEPTH OF JOB IS30	B.
28 cc, 4 + Flowed Al Delegard Plus	PUMP TRUCK CHARGE	<sup>1</sup> A213.75
Displaced with A top Langed Plan		@
at 700th Released affect Held		@ <u>7,70</u> <u>31385,00</u>
Consent Did tisculate (50h)		@
		@ <u>4.40                                  </u>
CHARGE TO: Unit Patrolum	30	@_3'40 _\&\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
CHARGE TO. TANK TRANSPORT	!	TOTAL 30 13.25
STREET		MINE JUDICA
CITYSTATEZIP		
A - 100 100	PLUG & FLOAT I	EQUIPMENT
AFE: 1316900 IRano		
	Bulley Place	984.26 184.2P
	Swe Lack Flot Show	@ 1213-29  213-29
To: Allied Oil & Gas Services, LLC.	5- Controlyico	@ <u>_&amp;7,254/38.7</u> 5
You are hereby requested to rent cementing equipment	1 hours Low of	@ <u>\$3,07</u> <u> </u>
and furnish cementer and helper(s) to assist owner or	- Barrer	@ 773276 - 973-76
contractor to do work as is listed. The above work was	;	TOTAL \$2597, 40
done to satisfaction and supervision of owner agent or		1017 14215 16
contractor. I have read and understand the "GENERAI	0 1 7 mo m, vr .vo .	
TERMS AND CONDITIONS" listed on the reverse sid		5
\// \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	TOTAL CHARGES AS, 55	
PRINTED NAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	L DISCOUNT \$19720.29	IF PAID IN 30 DAYS
	• •	
SIGNATURE VALUE VIII THE	1 15,835.8	O
	·	



P.O. Box 1570, Woodward, OK 73802 Ph. 580-254-5400 Fax 580-254-3242

## CEMENTING REPORT

Operator: Unit Corporation
Well Name: Black Farms 30-1H
Legal Description: Reno Cnty, KS

Cementing Date	12-15-13
Size of Drill Bit (Inches)	28
Size of Casing (Inches O.D.)	16
Setting Depth of Casing (ft.) from ground level	140
Type of Cement	Common Cement
Sacks of Cement Used	144
Was cement circulated?	Yes

Jeff M. Owen

Mid-Continent Conductor, LLC

