Well: Tebo 32-2				
Surface Location:	SENW	32 T4S-R64W	2728' FSL	1472' FWL
Bottom Hole Location:	SENW	32 T4S-R64W	2728' FSL	1472' FWL

SAP Network:	
Inv. Handler ID:	PRIMEO
AFE#:	
Drilling:	
Completion:	
Facilities:	
Total:	$0

Permit:
NDIC #:
API #:
Fed #:

Directional:

	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	20'	20'	2728' FSL	1472' FWL	32 T4S-R64W	0.0
TD:	8,450'	8,450'	2728' FSL	1472' FWL	32 T4S-R64W	0.0

Formation	TVD
Fox Hills Aquifer	1,775
Pierre Shale (Fox Hill Base)	2,008
Surface Casing	2,110
Sharon Spring Shale	7,555
Niobrara	7,616
Niobrara B	7,685
Niobrara C Chalk	7,722
Niobrara D Chalk	7,808
Fort Hays Limestone	7,930
Carlisle Shale	7,960
Greenhorn	8,045
Mowry	8,230
Dakota D	8,325
Dakota J	8,365
TD	8,450

CASING

SURF 9-5/8" 36# J-55 STC

PRD 7" 26# L-80 LTC

Drill Fluids

Surf. Hole:
FW gel mud:
8.40 - 9.00#
w/ high vis sweeps

Prod Hole:
Integrade OBM
9.50-10.00#
6 - 12 YP
40-50
80/20 O/W
<6 HTHP
300-500 ES
<6% Drill Solids

Cement

Surf. Hole:	**Slurry Top**
140 Sx 12 ppg Lead	Surface
320 Sx 13 ppg Tail	Surface CSG shoe + 500'
Based on 12-1/4" OH with 55% excess	

Prod Hole:	**Slurry Top**
510 Sx 12 ppg Lead	Surface CSG shoe + 100'
160 Sx 13 ppg Tail	Niobrara Fm + 500'
Based on 8-3/4" OH with 40% excess	

Logging/ Cores

Mudlogging:
Two-Man Unit:
6,000' to TD
Dry samples every 10'
Wet samples every 30'

MWD/GR
Surface CSG shoe to 7,500'

Cores
4"conventional cores from 7,500' to 8,360'

Open Hole Logs:

Surface to TD
GR/SONIC/DENSITY/NEUTRON:

6,000' to TD
Rt-SCANNER/DIELECTRIC SCANNER/ECS:
SONIC-SCANNER/IMAGE:

Cased Hole Logs:
CBL

Notes for Well

1.) Refer to the drilling program for detailed procedures.
2.) This well will be drilled on daywork with Rig TBD .
3.) Drill 12-1/4" surface hole with WBM/gel, take Tatco WL surveys every 500'.Run 9-5/8" CGG to 2,110', Cement CGS to surface.
4.) NU BOP, TIH, Drill 8-3/4" production hole with OBM and Motor/MWD/GR to 7,500' surveys will be taken every 90'. POOH for coring.
5.) PU Coring assembly TIH and take 4" convetional cores from 7,500' to 8,360'.
7.) Drill 8-3/4" hole to 8,450' TD. Gyro survey will be taken at TD.
8.) POOH laying down pipe
9.) Run open hole logs.
10.) Run 7" CSG to 8,450'. Cement CSG.
11.) Run cement bond log.
12.) ND BOPE. Install tubing head.
14.) Release drilling rig.

Estimated BHP (psi): 4,174 0.494 psi/ft

Ricardo Avila M. 9/29/11
Drilling Engineer Date

DRILLING PLAN

PROSPECT/FIELD	NIOBRARA/ Denver Julesburg					COUNTY/STATE	Arapahoe Co., Colorado	
OWNERS	CONOCOPHILLIPS				LEASE	Fee		
WELL NO.	Tebo 32-2			FNL	FSL	FEL	FWL	
LOCATION	SENW	32 T4S-R64W	Surface Location:		2728'		1472'	
	SENW	32 T4S-R64W	Bottom Hole Location:		2728'		1472'	
EST. T.D.	8,450' MD					GROUND ELEV.	5,926' (est)	ungraded

PROGNOSIS: Based on 5,946' KB(est)

MARKER	DEPTH TVD/MD	DATUM
Fox Hills Aquifer	1,775	4,171
Pierre Shale (Fox Hill Base)	2,008	3,938
Surface Casing	**2,110**	3,836
Sharon Spring Shale	7,555	(1,609)
Niobrara	**7,616**	**(1,670)**
Niobrara B	**7,685**	**(1,739)**
Niobrara C Chalk	**7,732**	**(1,786)**
Niobrara D Chalk	**7,808**	**(1,862)**
Fort Hays Limestone	7,930	(1,984)
Carlisle Shale	7,960	(2,014)
Greenhorn	8,045	(2,099)
Mowry	8,230	(2,284)
Dakota D	8,325	(2,379)
Dakota J	8,365	(2,419)
TD	**8,450**	**(2,604)**

LOGS:

Type	Interval
Open Hole:	
GR-MWD:	Surface CSG shoe to 7,500'
GR/SONIC/DENSITY/NEUTRON:	Surface to TD
Rt-SCANNER/DIELECTRIC SCANNER/ECS:	6,000' to TD
SONIC-SCANNER/IMAGE:	6,000' to TD
Cased Hole:	
CBL:	Surface CSG shoe to TD

DEVIATION:

Surf:	2° max.INC, 1°/ 100' max. DLS; svy every 500'.
Int:	1.5° max. INC, 0.6°/ 100' max DLS; svy every 90' /GYRO-TD
Prod:	N/A

DST'S: N/A

CORES:

4" Cores	7,500' to 8,360'

SAMPLES:

Mudlogging:
Two-Man Unit: 6,000' to TD
Dry samples every 10'
Wet samples every 30'

BOP:

COP Category 2 Well Control Requirements (Minium)
Rig TBD BOPE:
11"-5Mpsi Annular (Hydril GK)
11"-5Mpsi Pipe Ram (Cameron U)
11"-5Mpsi Blind Ram (Cameron U)
11"-5Mpsi Cross / Choke & Kill Lines
11"-5Mpsi Pipe Ram (Cameron U)

Estimated BHP (psi): 4174 0.49 psi/ft

MUD:	Interval		Type	WT	Vis	WL		Remarks
Surface:	0'	2,110'	FW / Gel-Lime Sweeps	8.40 - 9.00	28-50	NC		Circ Mud Tanks
Production:	2,110'	8,450'	Integrade OBM	9.50-10.00	40-50	<6	(HpHt)	Circ Mud Tanks

CASING:	Size	Wt ppf/Grd/Con	Hole	Depth	Cement	WOC	Remarks
Surface:	9-5/8"	36 J55 STC	12-1/4"	2,110'	To Surface	12 hrs	
Intermediate:	7"	26 L80 LTC	8-3/4"	8,450'	2010'	24 hrs	100' above Surface CSG Shoe

DIRECTIONAL PLAN (Vertical Hole)

	MD	TVD				AZ		
Surface:	20	20	2728' FSL	1472' FWL	32 T4S-R64W	0	Survey Company:	INTEQ
TD:	8,450'	8,450'	2728' FSL	1472' FWL	32 T4S-R64W	0		

Comments:
Surveys will be taken at 90' Interval below surface casing when drilling vertical hole with PDC / Motor / MWD/GR until reach top coring depth @ +/- 7,500'
Drop Gyro survey @TD

Prep By: Ricardo Avila Date: 9/29/11 Doc: REV.1

Niobrara Prospect, Colorado
CONOCOPHILLIPS
Well: Tebo 32-2
Loc: 32 T4S-R64W

Surface Casing:	
Surface Casing Depth (Ft)	**2,110**
Surface Casing O.D. (In.)	9.625
Surface Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	55%
Calc. Volume Tail (Sx)	140
Yield Tail (Cu. Ft./Sx)	1.95
Yield Lead (Cu. Ft./Sx)	2.47
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	17.4
Shoe Volume (bbl)	3.1
Tail feet of cement	500
Calculated Total Volume (Cu. Ft.)	1,059
Calc. Tail Volume (Cu. Ft.)	260
Calc. Lead Volume (Cu. Ft.)	781
Calc. Tail Volume (bbl)	46
Calc. Lead Volume (bbl)	139
Calc. Lead Volume (Sx)	320
Calc. Displacement Vol (bbl)	160
Lead Weight (ppg)	12
Tail Weight (ppg)	13

Intermediate Casing (Lead):	
Production Casing O.D. (In.)	7
Production Casing ID (In)	6.276
Hole O.D. (In)	8.75
Excess (%)	40%
Yield Lead (Cu. Ft./Sx)	2.14
Surface Shoe (Ft)	2,110'
Top Lead (Ft) - 100ft above surface shoe	2,010'
Base Lead (Ft)- 500f above Niobrara Fm	7,116'
Lead feet of cement	5,106'
Calc. Lead Volume (Cu. Ft.)	1,070
Calc. Lead Volume (bbl)	191
Calc. Lead Volume (Sx)	510
Lead Weight (ppg)	12

Intermediate Casing (Tail):	
Production Casing Depth (Ft)	8,450'
Production Casing O.D. (In.)	7
Production Casing ID (In)	6.276
Hole O.D. (In)	8.75
Excess (%)	40%
Yield Tail (Cu. Ft./Sx)	1.98
Shoe Joint (Ft)	80
Top Tail (Ft) - 500ft above Niobrara Fm	7,116'
Tail feet of cement	1,334'
Shoe Volume (Cu. Ft)	17.2
Shoe Volume (bbl)	3.1
Calc. Tail Volume (Cu. Ft.)	298
Calc. Tail Volume (bbl.)	53
Calc. Tail Volume (Sx)	160
Calc. Displacement Vol (bbl)	320
Tail Weight (ppg)	13