

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

OUTDATED
FORM

Form C-101
June 16, 2008

Submit to appropriate District Office

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address ECHO- PRODUCTION COMPANY P. O. BOX 1210 GRAHAM, TEXAS 76450		OGRID Number 6742
Property Code 34361		Property Name STILETTO "16" STATE
Well No. 7H		API Number 30 - 015-40194
Proposed Pool 1 NORTH SEVEN RIVERS; GLORIETA, YESO (97565)		Proposed Pool 2

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	16	20S	25E		330'	NORTH	355'	WEST	EDDY CO.

Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	20S	25E		340'	SOUTH	355'	WEST	EDDY CO.

Additional Well Information

Work Type Code N	Well Type Code O	Cable/Rotary ROTARY	Lease Type Code S	Ground Level Elevation 3463' GL
Multiple NO	Proposed Depth TVD-2900' MD-7252'	Formation 7 RIVERS YESO	Contractor UNKNOWN	Spud Date WHEN APPROVED

Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
26"	20"	Conductor	40'	Redi-mix	SURFACE
12 1/2"	9 5/8"	36#	900'	400 Sx.	SURFACE
8 3/4"	5 1/2"	17#	7252'	500 Sx.	SURFACE

Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

SEE ATTACHED SHEET

RECEIVED

APR 19 2012

NMOC D ARTESIA

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.		OIL CONSERVATION DIVISION	
Signature: Joe T. Janica		Approved by: T. C. Shepard	
Printed name: Joe T. Janica		Title: Geologist	
Title: Permit Eng.		Approval Date: 4/19/2012	Expiration Date: 4/19/2014
E-mail Address: joejanica@valornet.com			
Date: 04/16/12	Phone: 575-391-8503	Continuations of Approval Attached ☐	

ECHO PRODUCTION COMPANY
STILETTO "16" STATE #7H
UNIT "D" SECTION 16
T20S-R25E EDDY CO. NM

1. Drill 26" hole to 40'. Set 40' Of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 12 $\frac{1}{4}$ " hole to 900'. Run and set 900' of 9 5/8" 36# J-55 ST&C casing. Cement with 400 Sx. of Premium Plus cement + 2% CaCl, + 0.25# of flocele/Sx. Yield 1.34, circulate cement to surface.
3. Drill 8 3/4" verticle hole to KO point of 2300'. drill angle to reach 90° at 3242'. Continue drilling lateral to a MD-7252'. Run and set 7252' of 5 $\frac{1}{2}$ " 17# N-80 LT&C casing. with DV Tool at 2550±'. The section of the hole from 7252' to 2550' will not be cemented but will contain multiple open hole packers with Frac sleeves to stimulate various intervals in the lateral hole. The interval from 2550' the surface will be cemented with 500 Sx. of Premium Plus Class "C" cement + additives. Yield 1.34 with a 10% Excess, circulate cement to surface.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6181 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-40194		Pool Code 97565	Pool Name NORTH SEVEN RIVERS-GLORIETA-YESO
Property Code 34361	Property Name STILETTO "16" STATE		Well Number 7H
GRID No. 6742	Operator Name ECHO PRODUCTION CO.		Elevation 3463'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	16	20 S	25 E		330	NORTH	355	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	20 S	25 E		340	SOUTH	355	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION Lat - N 32°34'47.89" Long - W 104°29'49.93" NMSPC- N 574762.006 E 490862.124 (NAD-83) POE 546' FNL & 355' FWL PROJECT AREA PRODUCING AREA PROPOSED BOTTOM HOLE LOCATION Lat - N 32°34'02.50" Long - W 104°29'49.59" NMSPC- N 570175.370 E 490884.139 (NAD-83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Joe T. Janica</i> Signature Date Joe T. Janica 04/16/12 Printed Name joejanica@valornet.com Email Address SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief. Date Surveyed Signature & Seal of Professional Surveyor W.O. No. 26429 Certificate No. Gary L. Jones 7977 BASIN SURVEYS 26429
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SECTION 16, TOWNSHIP 20 SOUTH, RANGE 25 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

150' NORTH
OFF SET
3462 0'



ECHO PRODUCTION CO.
STILETTO "16" STATE #7H
ELEV. - 3463'

150' WEST
OFF SET □
3463.7'

Lat - N 32°34'47.89"
Long - W 104°29'49.93"
NMSPC- N 574762.006
E 490862.124
(NAD-83)

150' EAST
□ OFF SET
3461 8'

150' SOUTH
OFF SET
3463 8'

PROPOSED LEASE ROAD 2088.2'

N

200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF WHITE PINE AND PICKETT,
GO NORTH ON PICKETT FOR 0.5 MILES TO LEASE
ROAD, ON LEASE ROAD GO NORTH 0.5 MILES TO
PROPOSED LEASE ROAD.

BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number. 26429 Drawn By: J. SMALL

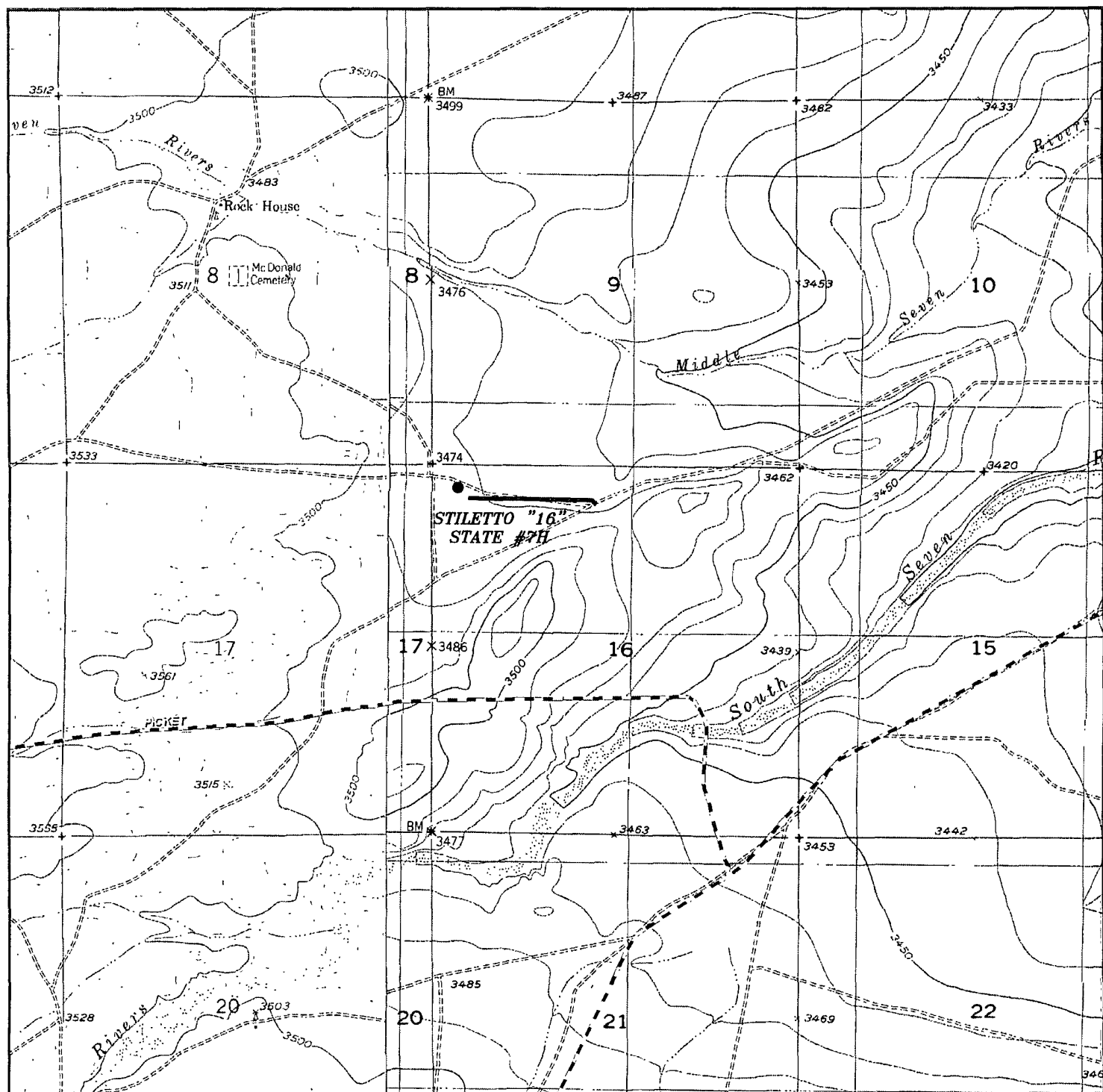
Date: 04-05-2012 Disk: JMS 26429

ECHO PRODUCTION CO.

REF: STILETTO "16" STATE #7H / WELL PAD TOPO

THE STILETTO "16" STATE #7H LOCATED 330'
FROM THE NORTH LINE AND 355' FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 20 SOUTH, RANGE 25 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 3-30-2012 Sheet 1 of 1 Sheets



STILETTO "16" STATE #7H

Located 330' FNL and 355' FWL

Section 16, Township 20 South, Range 25 East,
N.M.P.M., Eddy County, New Mexico.

basin
surveys
focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

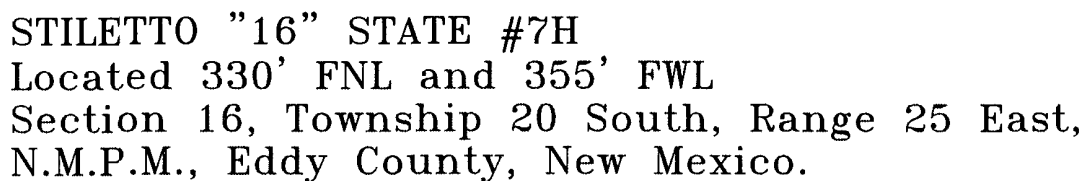
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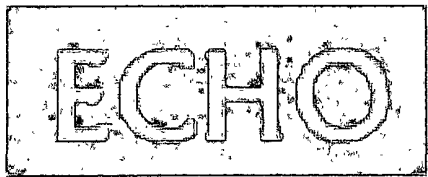
Survey Date: 3-30-2012

Scale: 1" = 2000'

Date: 04-05-2012

ECHO
PRODUCTION
CO.





Standard Planning Report

Field: Eddy Co, NM NAD83
Site: Stiletto 16 State #7H
Well: #7H
Wellpath: OH
Plan: Plan #2

Echo Production Co

Ryan Directional Services
19510 Oil Center Blvd
Houston, TX 77073
Ph 281-443-1414
Fx 281-443-1676
www.ryanenergy.com



**RYAN DIRECTIONAL
SERVICES**
A NABORS COMPANY

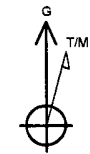
Plan Plan #2 (#7H/OH)

Created By: Erik De La Fe	Date: 4/12/2012
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Echo Production Co

Field: Eddy Co, NM NAD83
Site: Stiletto 16 State #7H
Well: #7H
Wellpath: OH
Plan: Plan #2

ECHO



Azimuths to Grid North
True North: 0.88°
Magnetic North: 0.88°
Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 4/2/2012
Model: IGRF2010

FIELD DETAILS

Eddy Co, NM NAD83

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Stiletto 16 State #7H
Eddy Co., TX

Site Centre Northing: 0.00
Easting: 0.00
Ground Level: 3480.00
Positional Uncertainty: 0.00
Convergence: -0.89

WELLPATH DETAILS

OH

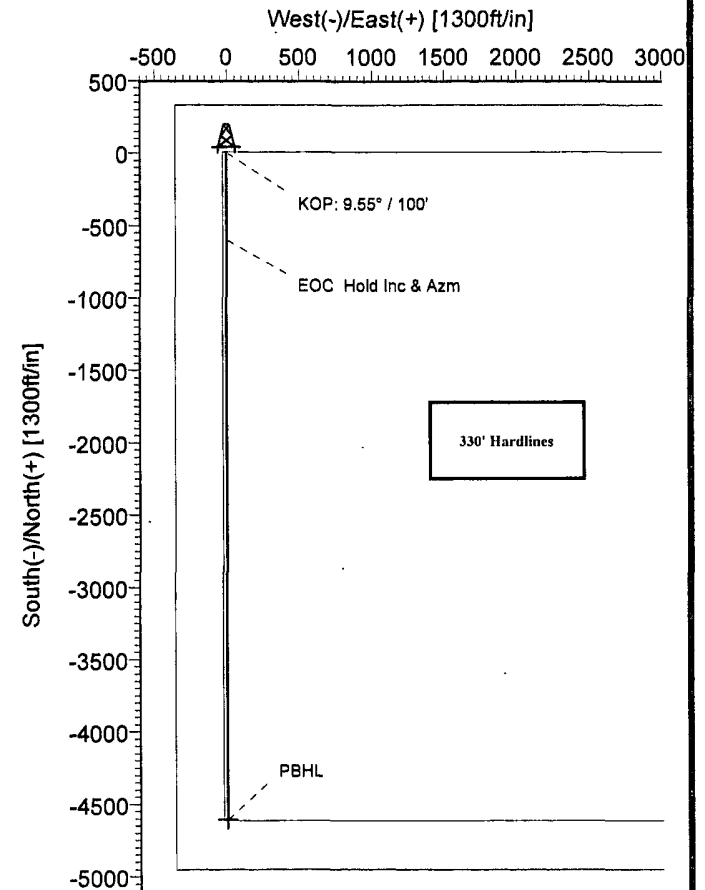
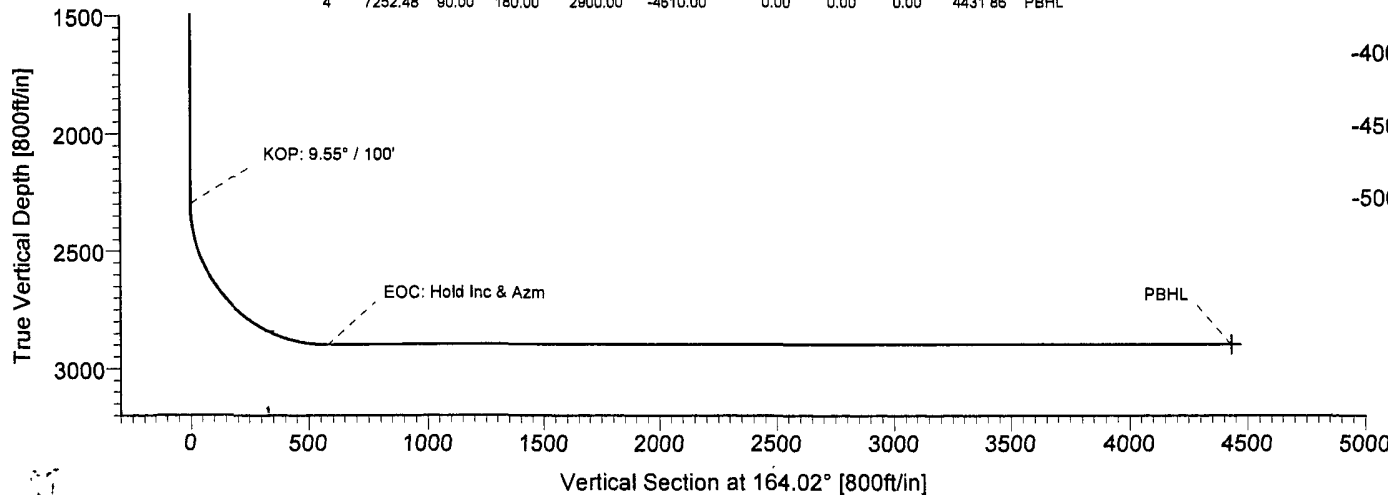
Rig
Ref. Datum: SITE 3497.00ft
V. Section Angle: 164.02°
Origin +N/-S: 0.00
Origin +E/-W: 0.00
Starting From TVD: 0.00

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	2900.00	-4610.00	0.00	-4610.00	0.00	30°58'32.795N	106°03'38.165W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	
3	3242.48	90.00	180.00	2900.00	-600.00	0.00	9.55	180.00	576.81	
4	7252.48	90.00	180.00	2900.00	-4610.00	0.00	0.00	0.00	4431.86	PBHL



Ryan Directional Services
19510 Oil Center Blvd
Houston, TX 77073
Ph 281-443-1414
Fx 281-443-1676

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Plan: Plan #2 (RTHQH)
Created By: Erik De La Fe Date: 4/12/2012
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____



Ryan Directional Services Planning Report



Company: Echo Production Co
Field: Eddy Co, NM NAD83
Site: Stiletto 16 State #7H
Well: #7H
Wellpath: OH

Date: 4/12/2012
Co-ordinate(NE) Reference: Site: Stiletto 16 State #7H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,164.02Azi)
Plan: Plan #2

Time: 10:59:16
Page: 1

Field: Eddy Co, NM NAD83

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: IGRF2010

Site: Stiletto 16 State #7H

Eddy Co., TX

Site Position: Northing: 0.00 ft Latitude: 30 59 18.404 N
From: Map Easting: 0.00 ft Longitude: 106 3 38.987 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3480.00 ft Grid Convergence: -0.89 deg

Well: #7H

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 0.00 ft Latitude: 30 59 18.404 N
+E/-W 0.00 ft Easting: 0.00 ft Longitude: 106 3 38.987 W
Position Uncertainty: 0.00 ft

Wellpath: OH

Current Datum: SITE Height 3497.00 ft
Magnetic Data: 4/2/2012
Field Strength: 0 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft
0.00 0.00

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 0.00 deg
Mag Dip Angle: 0.00 deg
+E/-W Direction
ft deg
0.00 164.02

Plan: Plan #2

Date Composed: 4/2/2012
Version: 1
Tied-to: From Surface

Principal: Yes

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3242.48	90.00	180.00	2900.00	-600.00	0.00	9.55	9.55	19.10	180.00	
7252.48	90.00	180.00	2900.00	-4610.00	0.00	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP: 9.55° / 100'
2350.00	4.77	180.00	2349.94	-2.08	0.00	2.00	9.55	9.55	0.00	
2400.00	9.55	180.00	2399.54	-8.31	0.00	7.99	9.55	9.55	0.00	
2450.00	14.32	180.00	2448.44	-18.65	0.00	17.93	9.55	9.55	0.00	
2500.00	19.10	180.00	2496.32	-33.03	0.00	31.75	9.55	9.55	0.00	
2550.00	23.87	180.00	2542.83	-51.33	0.00	49.35	9.55	9.55	0.00	
2600.00	28.65	180.00	2587.66	-73.45	0.00	70.61	9.55	9.55	0.00	
2650.00	33.42	180.00	2630.49	-99.22	0.00	95.39	9.55	9.55	0.00	
2700.00	38.20	180.00	2671.02	-128.47	0.00	123.50	9.55	9.55	0.00	
2750.00	42.97	180.00	2708.98	-160.99	0.00	154.77	9.55	9.55	0.00	
2800.00	47.75	180.00	2744.11	-196.55	0.00	188.96	9.55	9.55	0.00	
2850.00	52.52	180.00	2776.15	-234.92	0.00	225.84	9.55	9.55	0.00	
2900.00	57.30	180.00	2804.88	-275.82	0.00	265.16	9.55	9.55	0.00	
2950.00	62.07	180.00	2830.11	-318.97	0.00	306.64	9.55	9.55	0.00	
3000.00	66.85	180.00	2851.67	-364.07	0.00	350.00	9.55	9.55	0.00	
3050.00	71.62	180.00	2869.39	-410.81	0.00	394.93	9.55	9.55	0.00	
3100.00	76.39	180.00	2883.16	-458.86	0.00	441.13	9.55	9.55	0.00	



Ryan Directional Services Planning Report



Company: Echo Production Co
Field: Eddy Co, NM NAD83
Site: Stiletto 16 State #7H
Well: #7H
Wellpath: OH

Date: 4/12/2012 Time: 10:59:16 Page: 2
Co-ordinate(N/E) Reference: Site: Stiletto 16 State #7H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,164.02Azi)
Plan: Plan #2

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
3150.00	81.17	180.00	2892.89	-507.89	0.00	488.26	9.55	9.55	0.00	EOC: Hold Inc & Azm
3200.00	85.94	180.00	2898.50	-557.56	0.00	536.01	9.55	9.55	0.00	
3242.48	90.00	180.00	2900.00	-600.00	0.00	576.81	9.55	9.55	0.00	
3300.00	90.00	180.00	2900.00	-657.52	0.00	632.11	0.00	0.00	0.00	
3400.00	90.00	180.00	2900.00	-757.52	0.00	728.25	0.00	0.00	0.00	
3500.00	90.00	180.00	2900.00	-857.52	0.00	824.39	0.00	0.00	0.00	
3600.00	90.00	180.00	2900.00	-957.52	0.00	920.52	0.00	0.00	0.00	
3700.00	90.00	180.00	2900.00	-1057.52	0.00	1016.66	0.00	0.00	0.00	
3800.00	90.00	180.00	2900.00	-1157.52	0.00	1112.79	0.00	0.00	0.00	
3900.00	90.00	180.00	2900.00	-1257.52	0.00	1208.93	0.00	0.00	0.00	
4000.00	90.00	180.00	2900.00	-1357.52	0.00	1305.06	0.00	0.00	0.00	
4100.00	90.00	180.00	2900.00	-1457.52	0.00	1401.20	0.00	0.00	0.00	
4200.00	90.00	180.00	2900.00	-1557.52	0.00	1497.34	0.00	0.00	0.00	
4300.00	90.00	180.00	2900.00	-1657.52	0.00	1593.47	0.00	0.00	0.00	
4400.00	90.00	180.00	2900.00	-1757.52	0.00	1689.61	0.00	0.00	0.00	
4500.00	90.00	180.00	2900.00	-1857.52	0.00	1785.74	0.00	0.00	0.00	
4600.00	90.00	180.00	2900.00	-1957.52	0.00	1881.88	0.00	0.00	0.00	
4700.00	90.00	180.00	2900.00	-2057.52	0.00	1978.02	0.00	0.00	0.00	
4800.00	90.00	180.00	2900.00	-2157.52	0.00	2074.15	0.00	0.00	0.00	
4900.00	90.00	180.00	2900.00	-2257.52	0.00	2170.29	0.00	0.00	0.00	
5000.00	90.00	180.00	2900.00	-2357.52	0.00	2266.42	0.00	0.00	0.00	
5100.00	90.00	180.00	2900.00	-2457.52	0.00	2362.56	0.00	0.00	0.00	
5200.00	90.00	180.00	2900.00	-2557.52	0.00	2458.69	0.00	0.00	0.00	
5300.00	90.00	180.00	2900.00	-2657.52	0.00	2554.83	0.00	0.00	0.00	
5400.00	90.00	180.00	2900.00	-2757.52	0.00	2650.97	0.00	0.00	0.00	
5500.00	90.00	180.00	2900.00	-2857.52	0.00	2747.10	0.00	0.00	0.00	
5600.00	90.00	180.00	2900.00	-2957.52	0.00	2843.24	0.00	0.00	0.00	
5700.00	90.00	180.00	2900.00	-3057.52	0.00	2939.37	0.00	0.00	0.00	
5800.00	90.00	180.00	2900.00	-3157.52	0.00	3035.51	0.00	0.00	0.00	
5900.00	90.00	180.00	2900.00	-3257.52	0.00	3131.64	0.00	0.00	0.00	
6000.00	90.00	180.00	2900.00	-3357.52	0.00	3227.78	0.00	0.00	0.00	
6100.00	90.00	180.00	2900.00	-3457.52	0.00	3323.92	0.00	0.00	0.00	
6200.00	90.00	180.00	2900.00	-3557.52	0.00	3420.05	0.00	0.00	0.00	
6300.00	90.00	180.00	2900.00	-3657.52	0.00	3516.19	0.00	0.00	0.00	
6400.00	90.00	180.00	2900.00	-3757.52	0.00	3612.32	0.00	0.00	0.00	
6500.00	90.00	180.00	2900.00	-3857.52	0.00	3708.46	0.00	0.00	0.00	
6600.00	90.00	180.00	2900.00	-3957.52	0.00	3804.60	0.00	0.00	0.00	
6700.00	90.00	180.00	2900.00	-4057.52	0.00	3900.73	0.00	0.00	0.00	
6800.00	90.00	180.00	2900.00	-4157.52	0.00	3996.87	0.00	0.00	0.00	
6900.00	90.00	180.00	2900.00	-4257.52	0.00	4093.00	0.00	0.00	0.00	
7000.00	90.00	180.00	2900.00	-4357.52	0.00	4189.14	0.00	0.00	0.00	
7100.00	90.00	180.00	2900.00	-4457.52	0.00	4285.27	0.00	0.00	0.00	
7200.00	90.00	180.00	2900.00	-4557.52	0.00	4381.41	0.00	0.00	0.00	
7252.48	90.00	180.00	2900.00	-4610.00	0.00	4431.86	0.00	0.00	0.00	PBHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec			← Longitude → Deg Min Sec		
PBHL			2900.00	-4610.00	0.00	-4610.00	0.00	30	58	32.795 N	106	3	38.165 W



Ryan Directional Services Planning Report



Company: Echo Production Co
Field: Eddy Co, NM NAD83
Site: Stiletto 16 State #7H
Well: #7H
Wellpath: OH

Date: 4/12/2012 Time: 10:59:16 Page: 3
Co-ordinate(NE) Reference: Site: Stiletto 16 State #7H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,164.02Azi)
Plan: Plan #2

Annotation

MD ft	TVD ft	
2300.00	2300.00	KOP: 9.55° / 100'
3242.48	2900.00	EOC: Hold Inc & Azm

HEADER INFORMATION

Company: Echo Production Co

Field: Eddy Co, NM NAD83

Site Name: Stiletto 16 : Mag Dec.C +0.89 EAS TO GRID

Well Name #7H

Wellpath NOH AFE / OCS

Survey Nar Plan #2 Survey Dat 4/2/2012 Survey Typ Depth Unit: ft

SURFACE LOCATION

Site Northir 0

Site Eastin 0

BOTTOM HOLE LOCATION

BHL MD 7252.48

BHL TVD 2900

WELL INFORMATION

Well Northir 0

Well Eastir 0

Rig K.B: 3497

Vsec Angle 164.02

Vsec North 0

Vsec East: 0

SURVEY LIST

MD	INC	AZI	TVD	NS	EW	VSEC	DLS	S/STVD
0	0	0	0	0	0	0	0	-3497
100	0	0	100	0	0	0	0	-3397
200	0	0	200	0	0	0	0	-3297
300	0	0	300	0	0	0	0	-3197
400	0	0	400	0	0	0	0	-3097
500	0	0	500	0	0	0	0	-2997
600	0	0	600	0	0	0	0	-2897
700	0	0	700	0	0	0	0	-2797
800	0	0	800	0	0	0	0	-2697
900	0	0	900	0	0	0	0	-2597
1000	0	0	1000	0	0	0	0	-2497
1100	0	0	1100	0	0	0	0	-2397
1200	0	0	1200	0	0	0	0	-2297
1300	0	0	1300	0	0	0	0	-2197
1400	0	0	1400	0	0	0	0	-2097
1500	0	0	1500	0	0	0	0	-1997
1600	0	0	1600	0	0	0	0	-1897
1700	0	0	1700	0	0	0	0	-1797
1800	0	0	1800	0	0	0	0	-1697
1900	0	0	1900	0	0	0	0	-1597
2000	0	0	2000	0	0	0	0	-1497
2100	0	0	2100	0	0	0	0	-1397
2200	0	0	2200	0	0	0	0	-1297
2300	0	0	2300	0	0	0	0	-1197
2350	4.77	180	2349.94	-2.08	0	2	9.55	-1147.06

2400	9.55	180	2399.54	-8.31	0	7.99	9.55	-1097.46
2450	14.32	180	2448.44	-18.65	0	17.93	9.55	-1048.56
2500	19.1	180	2496.32	-33.03	0	31.75	9.55	-1000.68
2550	23.87	180	2542.83	-51.33	0	49.35	9.55	-954.17
2600	28.65	180	2587.66	-73.45	0	70.61	9.55	-909.34
2650	33.42	180	2630.49	-99.22	0	95.39	9.55	-866.51
2700	38.2	180	2671.02	-128.47	0	123.5	9.55	-825.98
2750	42.97	180	2708.98	-160.99	0	154.77	9.55	-788.02
2800	47.75	180	2744.11	-196.55	0	188.96	9.55	-752.89
2850	52.52	180	2776.15	-234.92	0	225.84	9.55	-720.85
2900	57.3	180	2804.88	-275.82	0	265.16	9.55	-692.12
2950	62.07	180	2830.11	-318.97	0	306.64	9.55	-666.89
3000	66.85	180	2851.67	-364.07	0	350	9.55	-645.33
3050	71.62	180	2869.39	-410.81	0	394.93	9.55	-627.61
3100	76.39	180	2883.16	-458.86	0	441.13	9.55	-613.84
3150	81.17	180	2892.89	-507.89	0	488.26	9.55	-604.11
3200	85.94	180	2898.5	-557.56	0	536.01	9.55	-598.5
3242.48	90	180	2900	-600	0	576.81	9.55	-597
3300	90	180	2900	-657.52	0	632.11	0	-597
3400	90	180	2900	-757.52	0	728.25	0	-597
3500	90	180	2900	-857.52	0	824.39	0	-597
3600	90	180	2900	-957.52	0	920.52	0	-597
3700	90	180	2900	-1057.52	0	1016.66	0	-597
3800	90	180	2900	-1157.52	0	1112.79	0	-597
3900	90	180	2900	-1257.52	0	1208.93	0	-597
4000	90	180	2900	-1357.52	0	1305.06	0	-597
4100	90	180	2900	-1457.52	0	1401.2	0	-597
4200	90	180	2900	-1557.52	0	1497.34	0	-597
4300	90	180	2900	-1657.52	0	1593.47	0	-597
4400	90	180	2900	-1757.52	0	1689.61	0	-597
4500	90	180	2900	-1857.52	0	1785.74	0	-597
4600	90	180	2900	-1957.52	0	1881.88	0	-597
4700	90	180	2900	-2057.52	0	1978.02	0	-597
4800	90	180	2900	-2157.52	0	2074.15	0	-597
4900	90	180	2900	-2257.52	0	2170.29	0	-597
5000	90	180	2900	-2357.52	0	2266.42	0	-597
5100	90	180	2900	-2457.52	0	2362.56	0	-597
5200	90	180	2900	-2557.52	0	2458.69	0	-597
5300	90	180	2900	-2657.52	0	2554.83	0	-597
5400	90	180	2900	-2757.52	0	2650.97	0	-597
5500	90	180	2900	-2857.52	0	2747.1	0	-597
5600	90	180	2900	-2957.52	0	2843.24	0	-597
5700	90	180	2900	-3057.52	0	2939.37	0	-597
5800	90	180	2900	-3157.52	0	3035.51	0	-597
5900	90	180	2900	-3257.52	0	3131.64	0	-597
6000	90	180	2900	-3357.52	0	3227.78	0	-597
6100	90	180	2900	-3457.52	0	3323.92	0	-597
6200	90	180	2900	-3557.52	0	3420.05	0	-597
6300	90	180	2900	-3657.52	0	3516.19	0	-597
6400	90	180	2900	-3757.52	0	3612.32	0	-597
6500	90	180	2900	-3857.52	0	3708.46	0	-597
6600	90	180	2900	-3957.52	0	3804.6	0	-597

6700	90	180	2900	-4057.52	0	3900.73	0	-597
6800	90	180	2900	-4157.52	0	3996.87	0	-597
6900	90	180	2900	-4257.52	0	4093	0	-597
7000	90	180	2900	-4357.52	0	4189.14	0	-597
7100	90	180	2900	-4457.52	0	4285.27	0	-597
7200	90	180	2900	-4557.52	0	4381.41	0	-597
7252.48	90	180	2900	-4610	0	4431.86	0	-597

LeaseN/S	LeaseE/W	Northing	Easting	Latitude	Longitude
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
0	0	0		0 30°59'18.4	106°03'38.987W
2.08	0	-2.08		0 30°59'18.3	106°03'38.987W

8.31	0	-8.31	0 30°59'18.3 106°03'38.986W
18.65	0	-18.65	0 30°59'18.2 106°03'38.984W
33.03	0	-33.03	0 30°59'18.0 106°03'38.981W
51.33	0	-51.33	0 30°59'17.8 106°03'38.978W
73.45	0	-73.45	0 30°59'17.6 106°03'38.974W
99.22	0	-99.22	0 30°59'17.4 106°03'38.970W
128.47	0	-128.47	0 30°59'17.1 106°03'38.964W
160.99	0	-160.99	0 30°59'16.8 106°03'38.959W
196.55	0	-196.55	0 30°59'16.4 106°03'38.952W
234.92	0	-234.92	0 30°59'16.0 106°03'38.945W
275.82	0	-275.82	0 30°59'15.6 106°03'38.938W
318.97	0	-318.97	0 30°59'15.2 106°03'38.930W
364.07	0	-364.07	0 30°59'14.8 106°03'38.922W
410.81	0	-410.81	0 30°59'14.3 106°03'38.914W
458.86	0	-458.86	0 30°59'13.8 106°03'38.905W
507.89	0	-507.89	0 30°59'13.3 106°03'38.897W
557.56	0	-557.56	0 30°59'12.8 106°03'38.888W
600	0	-600	0 30°59'12.4 106°03'38.880W
657.52	0	-657.52	0 30°59'11.8 106°03'38.870W
757.52	0	-757.52	0 30°59'10.9 106°03'38.852W
857.52	0	-857.52	0 30°59'09.9 106°03'38.834W
957.52	0	-957.52	0 30°59'08.9 106°03'38.817W
1057.52	0	-1057.52	0 30°59'07.9 106°03'38.799W
1157.52	0	-1157.52	0 30°59'06.9 106°03'38.781W
1257.52	0	-1257.52	0 30°59'05.9 106°03'38.763W
1357.52	0	-1357.52	0 30°59'04.9 106°03'38.745W
1457.52	0	-1457.52	0 30°59'03.9 106°03'38.727W
1557.52	0	-1557.52	0 30°59'02.9 106°03'38.710W
1657.52	0	-1657.52	0 30°59'02.0 106°03'38.692W
1757.52	0	-1757.52	0 30°59'01.0 106°03'38.674W
1857.52	0	-1857.52	0 30°59'00.0 106°03'38.656W
1957.52	0	-1957.52	0 30°58'59.0 106°03'38.638W
2057.52	0	-2057.52	0 30°58'58.0 106°03'38.620W
2157.52	0	-2157.52	0 30°58'57.0 106°03'38.603W
2257.52	0	-2257.52	0 30°58'56.0 106°03'38.585W
2357.52	0	-2357.52	0 30°58'55.0 106°03'38.567W
2457.52	0	-2457.52	0 30°58'54.0 106°03'38.549W
2557.52	0	-2557.52	0 30°58'53.1 106°03'38.531W
2657.52	0	-2657.52	0 30°58'52.1 106°03'38.513W
2757.52	0	-2757.52	0 30°58'51.1 106°03'38.496W
2857.52	0	-2857.52	0 30°58'50.1 106°03'38.478W
2957.52	0	-2957.52	0 30°58'49.1 106°03'38.460W
3057.52	0	-3057.52	0 30°58'48.1 106°03'38.442W
3157.52	0	-3157.52	0 30°58'47.1 106°03'38.424W
3257.52	0	-3257.52	0 30°58'46.1 106°03'38.407W
3357.52	0	-3357.52	0 30°58'45.1 106°03'38.389W
3457.52	0	-3457.52	0 30°58'44.1 106°03'38.371W
3557.52	0	-3557.52	0 30°58'43.2 106°03'38.353W
3657.52	0	-3657.52	0 30°58'42.2 106°03'38.335W
3757.52	0	-3757.52	0 30°58'41.2 106°03'38.317W
3857.52	0	-3857.52	0 30°58'40.2 106°03'38.300W
3957.52	0	-3957.52	0 30°58'39.2 106°03'38.282W

4057.52	0	-4057.52	0 30°58'38.2 106°03'38.264W
4157.52	0	-4157.52	0 30°58'37.2 106°03'38.246W
4257.52	0	-4257.52	0 30°58'36.2 106°03'38.228W
4357.52	0	-4357.52	0 30°58'35.2 106°03'38.210W
4457.52	0	-4457.52	0 30°58'34.3 106°03'38.193W
4557.52	0	-4557.52	0 30°58'33.3 106°03'38.175W
4610	0	-4610	0 30°58'32.7 106°03'38.165W

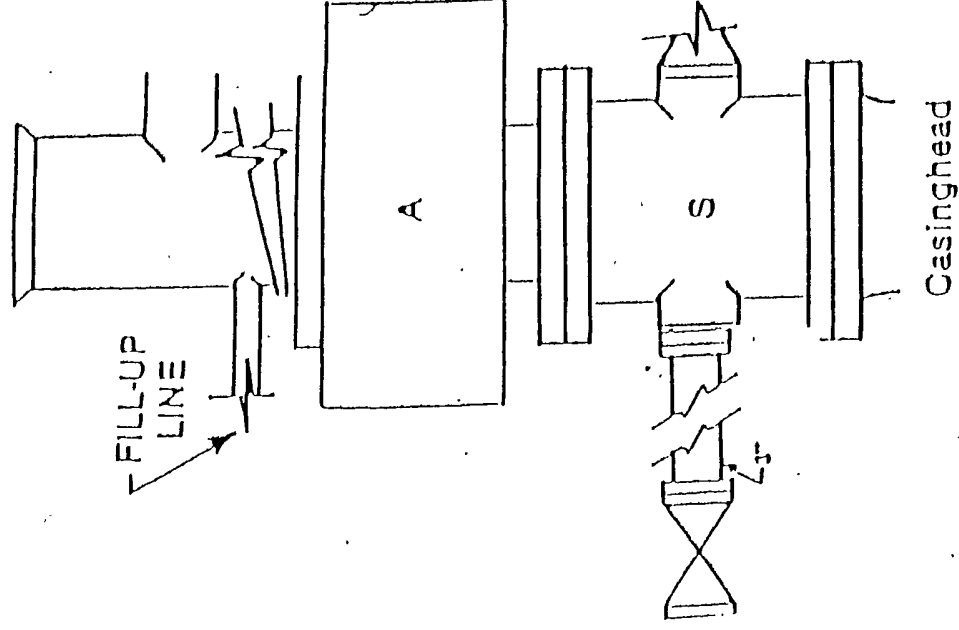


FIGURE XI-1. Recommended LADC Class 2 BOP stack, 2000 psi WP.
 Either SRd (left) or SA (right) arrangement is acceptable and drilling
 spool is optional

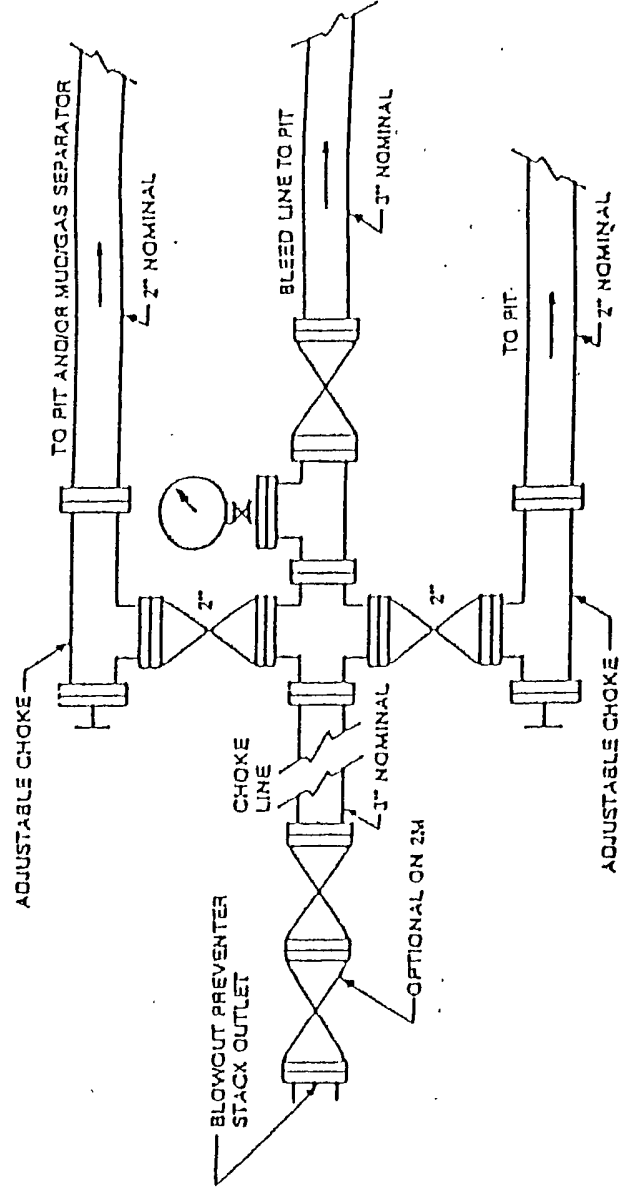


FIGURE K-1. Typical choke manifold assembly for 2M and 3M rated working pressure service — surface installation.

ECHO PRODUCTION, INC.

Hydrogen sulfide contingency plan
For drilling/workover/facility.

This well and it's anticipated facility are not expected to have Hydrogen Sulfide releases there is no known presence of Hydrogen Sulfide in this area. There are no dwellings in the close proximity of this location. However if an indication of any Hydrogen Sulfide should be encountered a plan is in place to monitor the situation. ECHO PRODUCTION, INC. will have a company representative available to the rig personnel throughout the drilling and the completion operation. If Hydrogen Sulfide should be detected monitoring equipment will be available for monitoring and/or testing..

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GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

- 1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
- 2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus)
- 3) Always use the "buddy system"
- 4) Isolate the well/problem if possible.
- 5) Account for all personnel
- 6) Display the proper colors warning all unsuspecting personnel of the danger at hand.
- 7) Contact the Company personnel as soon as possible if not at the location.
(use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and co-ordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

- 1) All personnel will don the self-contained breathing apparatus.
- 2) Remove all personnel to the "safe area" (always use the "buddy system")
- 3) Contact company personnel if not on location.
- 4) Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source.
- 5) No entry to any unauthorized personnel.
- 6) Notify the appropriate agencies: City Police-City street(s)
State Police-State Rd,
County Sheriff-County Rd.
(will assist in general public evacuation/safety while maintaining roadblocks)
- 7) Call the NMOCD & or BLM

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take necessary steps to contact the following:

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
Gene Byars		940-300-3634	Drilling Supervisor
Tom Golden	940-549-3292	940-550-4169	

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
Hobbs Fire Department	575-393-2677
Lovington Police Department	575-396-3144
Lovington Fire Department	575-396-2359
Loco Hills Fire Department	575-677-2349
Maljamar Fire Department	575-676-4100
(NMOCD) New Mexico Oil Conservation Division, District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
District II (Eddy, Chaves)	575-748-1283
American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

Location as staked



T21S
R24E

T21S
R25E

QUANACHEER 435
QUANACHEER 438
QUANACHEER 439
QUANACHEER 440
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QUANACHEER 500

BITTER CREEK
CR 427A

PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event greater than 100 ppm H₂S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H₂S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE:

$$X = [(1.589) (\text{concentration}) (Q)]^{(0.6258)}$$

Calculation for the 500 ppm ROE:

$$X = [(0.4546) (\text{concentration}) (Q)]^{(0.6258)}$$

EXAMPLE: If a well/facility has been determined to have 150 ppm H₂S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

$$\begin{aligned} 100 \text{ PPM} \quad X &= [(1.589)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 7' \end{aligned}$$

$$\begin{aligned} 500 \text{ PPM} \quad X &= [(0.4546)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 3' \end{aligned}$$

(These calculations will be forwarded to the appropriate District NMOCD office when applicable)

PUBLIC EVACUATION PLAN:

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

- 1) Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- 2) A trained person in H₂S safety, shall monitor with detection equipment the H₂S concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. **(All monitoring equipment shall be UL approved, for use in class I groups A,B,C, & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H₂S values.)**
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company supervising personnel shall stay in communications with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

- 1) Human life and/or property are in danger.
- 2) There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTIONS FOR IGNITION:

- 1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D" –ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
- 2) One of the people will be a qualified safety person who will test the atmosphere for H₂S, Oxygen, & LFL. The other person will be the company supervisor; he is responsible for igniting the well.
- 3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a $\pm 500'$ range to ignite the gas.
- 4) Prior to ignition, make a final check for combustible gases.
- 5) Following ignition, continue with the emergency actions & procedures as before.

REQUIRED EMERGENCY EQUIPMENT:

- 1) Breathing Apparatus:
 - Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - Work/Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
 - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
- 2) Signage & Flagging:
 - One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - A Colored Condition flag will be on display, reflecting the condition at the site at that time.
- 3) Briefing Area: Two, perpendicular areas will be designated by signs and readily accessible.

- 4) Wind Socks: Two windsocks will be placed in strategic locations, visible from all angles.
- 5) H2S Detectors and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
 - Rig Floor
 - Bell Nipple
 - End of Flow line or where well bore fluid are being discharged.
- 6) Auxiliary Rescue Equipment:
 - Stretcher
 - Two OSHA full body harness
 - 100' of 5/8" OSHA approved rope
 - 1 – 20# Class ABC fire extinguisher
 - Communication via cell phones on location and vehicles on location.

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA):

SCBA should be worn when any of the following are performed:

- Working near the top or on top of a tank.
- Disconnecting any line where H2S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H2S exist.
- Working in areas where over 10 ppm on H2S has been detected.
- At any time there is a doubt as the level of H2S in the area.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA.

Contact lenses are never allowed with SCBA.

Air quality shall continuously be checked during the entire operation.

After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source of cross wind to achieve upwind.

Notify emergency response personnel.

Provide artificial respiration and/or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

H2S TOXIC EFFECTS:

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

Various Gases

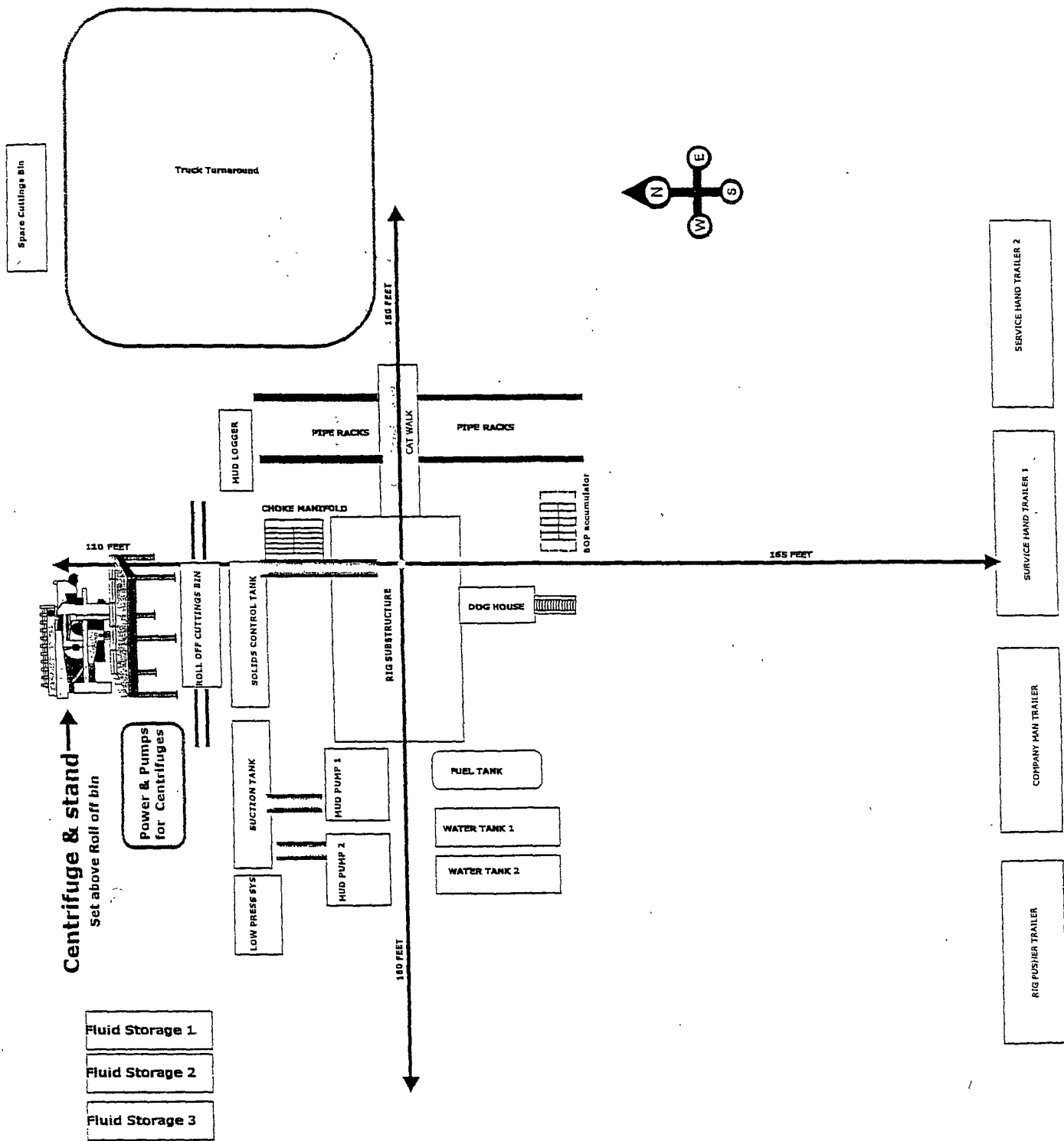
Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5%	10%
Methane	CH4	0.55	90,000	Combustible @ 5%	N/A

1. Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.
2. Hazardous limit – Concentration that may cause death.
3. Lethal concentration – Concentration that will cause death with short-term exposure.
4. Threshold limit – 10 ppm – NIOSH guide to chemical hazards.
5. Short-term threshold limit.

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		PHYSICAL EFFECTS
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia.
.01%	100 ppm	Kills the sense of smell in 3-15 minutes. May irritate eyes and throat.
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and/or death.
.06%	600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

Closed Loop Oil Well



Note: The Rig and Closed System Company for this well have not been selected thus the set up shown is simply generic.