



Planned Wellpath Report

Prelim_3

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Ticonderoga) Sec 16, T15S, R31E	Wellbore	No. 2H PWB
Facility	Ticonderoga 16 St Com No. 2H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999936	Report Generated	4/9/2010 at 12:02:56 PM
Convergence at slot	0.27° East	Database/Source file	WA_Midland/No. 2H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	694278.30	735940.40	33°01'19.564"N	103°50'03.642"W
Facility Reference Pt			694278.30	735940.40	33°01'19.564"N	103°50'03.642"W
Field Reference Pt			694286.00	734335.70	33°01'03.686"N	103°50'03.641"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 2H SHL (RT) to GL	18.00ft
Horizontal Reference Pt	Surface Location	Rig on No. 2H SHL (RT) to Mean Sea Level	4436.00ft
Vertical Reference Pt	Rig on No. 2H SHL (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 2H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	89.73°



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Field	(Ticonderoga) Sec 16, T15S, R31E	Wellbore	No. 2H PWB
Facility	Ticonderoga 16 St Com No. 2H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TYD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	89.735	0.00	0.00	0.00	0.00	694278.30	735940.40	33°01'19.564"N	103°50'03.642"W	0.00	Tie On
8385.00	0.000	89.735	8385.00	0.00	0.00	0.00	694278.30	735940.40	33°01'19.564"N	103°50'03.642"W	0.00	EST. KOP
8485.00†	28.600	89.735	8480.90	24.44	0.11	24.44	694302.74	735940.51	33°01'19.564"N	103°50'03.354"W	28.60	
8585.00†	57.200	89.735	8553.39	91.81	0.43	91.81	694370.10	735940.83	33°01'19.564"N	103°50'02.563"W	28.60	
8685.00†	85.800	89.735	8584.80	185.66	0.86	185.66	694463.95	735941.26	33°01'19.564"N	103°50'01.461"W	28.60	
8698.16	89.564	89.735	8585.33	198.81	0.92	198.81	694477.09	735941.32	33°01'19.564"N	103°50'01.307"W	28.60	EOC
8785.00†	89.564	89.735	8585.99	285.65	1.32	285.64	694563.93	735941.72	33°01'19.564"N	103°50'00.287"W	0.00	
8885.00†	89.564	89.735	8586.75	385.64	1.79	385.64	694663.91	735942.19	33°01'19.564"N	103°49'59.112"W	0.00	
8985.00†	89.564	89.735	8587.51	485.64	2.25	485.64	694763.90	735942.65	33°01'19.564"N	103°49'57.938"W	0.00	
9085.00†	89.564	89.735	8588.27	585.64	2.71	585.63	694863.89	735943.11	33°01'19.563"N	103°49'56.764"W	0.00	
9185.00†	89.564	89.735	8589.04	685.64	3.17	685.63	694963.88	735943.57	33°01'19.563"N	103°49'55.589"W	0.00	
9285.00†	89.564	89.735	8589.80	785.63	3.64	785.62	695063.87	735944.04	33°01'19.563"N	103°49'54.415"W	0.00	
9385.00†	89.564	89.735	8590.56	885.63	4.10	885.62	695163.86	735944.50	33°01'19.563"N	103°49'53.240"W	0.00	
9485.00†	89.564	89.735	8591.32	985.63	4.56	985.62	695263.85	735944.96	33°01'19.563"N	103°49'52.066"W	0.00	
9585.00†	89.564	89.735	8592.08	1085.62	5.03	1085.61	695363.84	735945.43	33°01'19.563"N	103°49'50.892"W	0.00	
9685.00†	89.564	89.735	8592.84	1185.62	5.49	1185.61	695463.83	735945.89	33°01'19.563"N	103°49'49.717"W	0.00	
9785.00†	89.564	89.735	8593.60	1285.62	5.95	1285.60	695563.82	735946.35	33°01'19.562"N	103°49'48.543"W	0.00	
9885.00†	89.564	89.735	8594.36	1385.62	6.42	1385.60	695663.81	735946.82	33°01'19.562"N	103°49'47.368"W	0.00	
9985.00†	89.564	89.735	8595.13	1485.61	6.88	1485.60	695763.80	735947.28	33°01'19.562"N	103°49'46.194"W	0.00	
10085.00†	89.564	89.735	8595.89	1585.61	7.34	1585.59	695863.79	735947.74	33°01'19.562"N	103°49'45.019"W	0.00	
10185.00†	89.564	89.735	8596.65	1685.61	7.81	1685.59	695963.78	735948.20	33°01'19.562"N	103°49'43.845"W	0.00	
10285.00†	89.564	89.735	8597.41	1785.60	8.27	1785.58	696063.77	735948.67	33°01'19.562"N	103°49'42.671"W	0.00	
10385.00†	89.564	89.735	8598.17	1885.60	8.73	1885.58	696163.76	735949.13	33°01'19.562"N	103°49'41.496"W	0.00	
10485.00†	89.564	89.735	8598.93	1985.60	9.19	1985.58	696263.75	735949.59	33°01'19.561"N	103°49'40.322"W	0.00	
10585.00†	89.564	89.735	8599.69	2085.59	9.66	2085.57	696363.73	735950.06	33°01'19.561"N	103°49'39.147"W	0.00	
10685.00†	89.564	89.735	8600.45	2185.59	10.12	2185.57	696463.72	735950.52	33°01'19.561"N	103°49'37.973"W	0.00	
10785.00†	89.564	89.735	8601.22	2285.59	10.58	2285.56	696563.71	735950.98	33°01'19.561"N	103°49'36.799"W	0.00	
10885.00†	89.564	89.735	8601.98	2385.59	11.05	2385.56	696663.70	735951.45	33°01'19.561"N	103°49'35.624"W	0.00	
10985.00†	89.564	89.735	8602.74	2485.58	11.51	2485.56	696763.69	735951.91	33°01'19.560"N	103°49'34.450"W	0.00	
11085.00†	89.564	89.735	8603.50	2585.58	11.97	2585.55	696863.68	735952.37	33°01'19.560"N	103°49'33.275"W	0.00	



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Field	(Ticonderoga) Sec 16, T15S, R31E	Wellbore	No. 2H PWB
Facility	Ticonderoga 16 St Com No. 2H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [sry ft]	Grid North [sry ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11185.00†	89.564	89.735	8604.26	2685.58	12.44	2685.55	696963.67	735952.83	33°01'19.560"N	103°49'32.101"W	0.00	
11285.00†	89.564	89.735	8605.02	2785.57	12.90	2785.54	697063.66	735953.30	33°01'19.560"N	103°49'30.927"W	0.00	
11385.00†	89.564	89.735	8605.78	2885.57	13.36	2885.54	697163.65	735953.76	33°01'19.560"N	103°49'29.752"W	0.00	
11485.00†	89.564	89.735	8606.54	2985.57	13.82	2985.54	697263.64	735954.22	33°01'19.559"N	103°49'28.578"W	0.00	
11585.00†	89.564	89.735	8607.31	3085.57	14.29	3085.53	697363.63	735954.69	33°01'19.559"N	103°49'27.403"W	0.00	
11685.00†	89.564	89.735	8608.07	3185.56	14.75	3185.53	697463.62	735955.15	33°01'19.559"N	103°49'26.229"W	0.00	
11785.00†	89.564	89.735	8608.83	3285.56	15.21	3285.52	697563.61	735955.61	33°01'19.559"N	103°49'25.055"W	0.00	
11885.00†	89.564	89.735	8609.59	3385.56	15.68	3385.52	697663.60	735956.08	33°01'19.559"N	103°49'23.880"W	0.00	
11985.00†	89.564	89.735	8610.35	3485.55	16.14	3485.52	697763.59	735956.54	33°01'19.558"N	103°49'22.706"W	0.00	
12085.00†	89.564	89.735	8611.11	3585.55	16.60	3585.51	697863.58	735957.00	33°01'19.558"N	103°49'21.531"W	0.00	
12185.00†	89.564	89.735	8611.87	3685.55	17.07	3685.51	697963.57	735957.47	33°01'19.558"N	103°49'20.357"W	0.00	
12285.00†	89.564	89.735	8612.63	3785.55	17.53	3785.51	698063.55	735957.93	33°01'19.558"N	103°49'19.183"W	0.00	
12385.00†	89.564	89.735	8613.40	3885.54	17.99	3885.50	698163.54	735958.39	33°01'19.557"N	103°49'18.008"W	0.00	
12485.00†	89.564	89.735	8614.16	3985.54	18.46	3985.50	698263.53	735958.85	33°01'19.557"N	103°49'16.834"W	0.00	
12585.00†	89.564	89.735	8614.92	4085.54	18.92	4085.49	698363.52	735959.32	33°01'19.557"N	103°49'15.659"W	0.00	
12685.00†	89.564	89.735	8615.68	4185.53	19.38	4185.49	698463.51	735959.78	33°01'19.557"N	103°49'14.485"W	0.00	
12785.00†	89.564	89.735	8616.44	4285.53	19.84	4285.49	698563.50	735960.24	33°01'19.556"N	103°49'13.311"W	0.00	
12885.00†	89.564	89.735	8617.20	4385.53	20.31	4385.48	698663.49	735960.71	33°01'19.556"N	103°49'12.136"W	0.00	
12985.00†	89.564	89.735	8617.96	4485.53	20.77	4485.48	698763.48	735961.17	33°01'19.556"N	103°49'10.962"W	0.00	
13085.00†	89.564	89.735	8618.72	4585.52	21.23	4585.47	698863.47	735961.63	33°01'19.556"N	103°49'09.787"W	0.00	
13121.23	89.564	89.735	8619.00†	4621.76	21.40	4621.71	698899.70	735961.80	33°01'19.556"N	103°49'09.362"W	0.00	No. 2H PBHL



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Ticonderoga) Sec 16, T15S, R31E	Wellbore	No. 2H PWB
Facility	Ticonderoga 16 St Com No. 2H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 2H PBHL	13121.23	8619.00	2140	4621.71	698899.70	735961.80	33°01'19.556"N	103°49'09.362"W	point

SURVEY PROGRAM Ref Wellbore: No. 2H PWB Ref Wellpath: Prelim_3

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	13121.23	NaviTrak (Standard)		No. 2H PWB



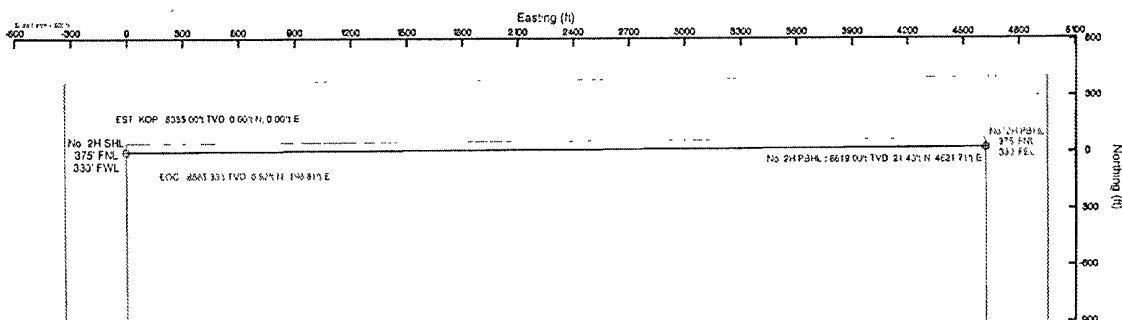
Cimarex Energy Co.

Location: Chaves County, NM
Field: (Ticonderoga) Sec 16, T15S, R31E
Facility: Ticonderoga 16 St Com No. 2H

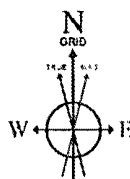
Slot: No 2H SHL
Well: No. 2H
Wellbore: No 2H PWB



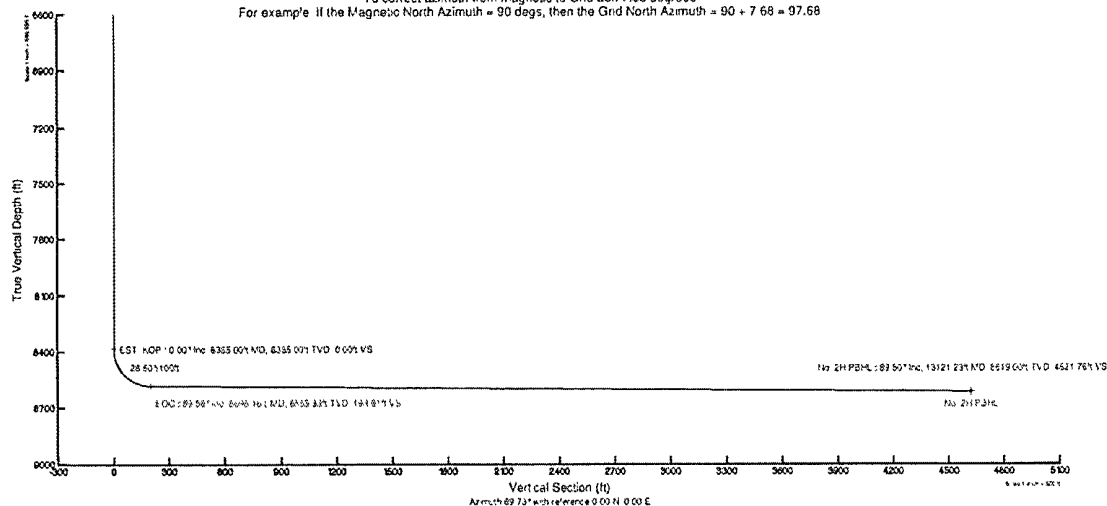
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (x100ft)	VS (ft)
Tie On	0.00	0.000	89.735	0.00	0.00	0.00	0.00	0.00
EST. KOP	8365.00	0.000	89.735	8365.00	0.00	0.00	0.00	0.00
EOC	8698.16	89.564	89.735	8585.33	0.42	198.61	28.60	198.81
No. 2H PWB	13121.23	89.564	89.735	8619.00	21.40	4621.71	0.00	4621.76

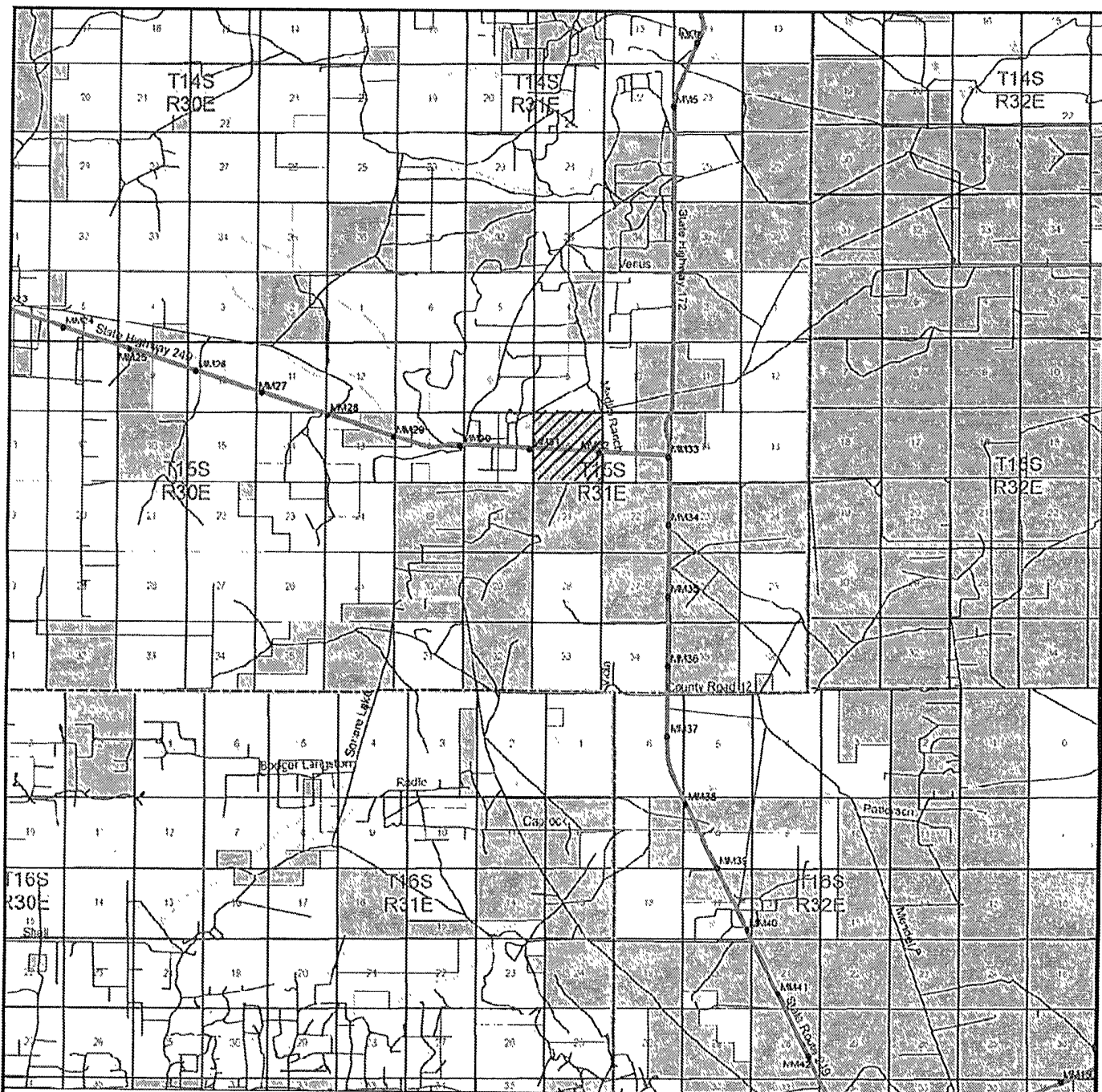


Plot reference well path is Pre'm. 3	
True vertical depths are referenced to Rig on No. 2H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 2H SHL (RT)	North Reference: Grid north
Rig on No. 2H SHL (RT) to Mean Sea Level: 4436 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Ticonderoga 16 St Com No. 2H) -4418 feet	Depths are in feet
Coordinates are in feet referenced to Surface Location	Created by: Victor Hernandez on 4/9/2010



BGGM (1945.0 to 2011.0) Dip: 60.93° Field: 49243.6 nT
Magnetic North is 7.96 degrees East of True North (at 4/9/2010)
Grid North is 0.27 degrees East of True North
To correct azimuth from True to Grid subtract 0.27 degrees
To correct azimuth from Magnetic to Grid add 7.68 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.68 = 97.68





TICONDEROGA "16" STATE COM #2
 Located 375' FNL and 330' FWL
 Section 16, Township 15 South, Range 31 East,
 N.M.P.M., Chaves 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

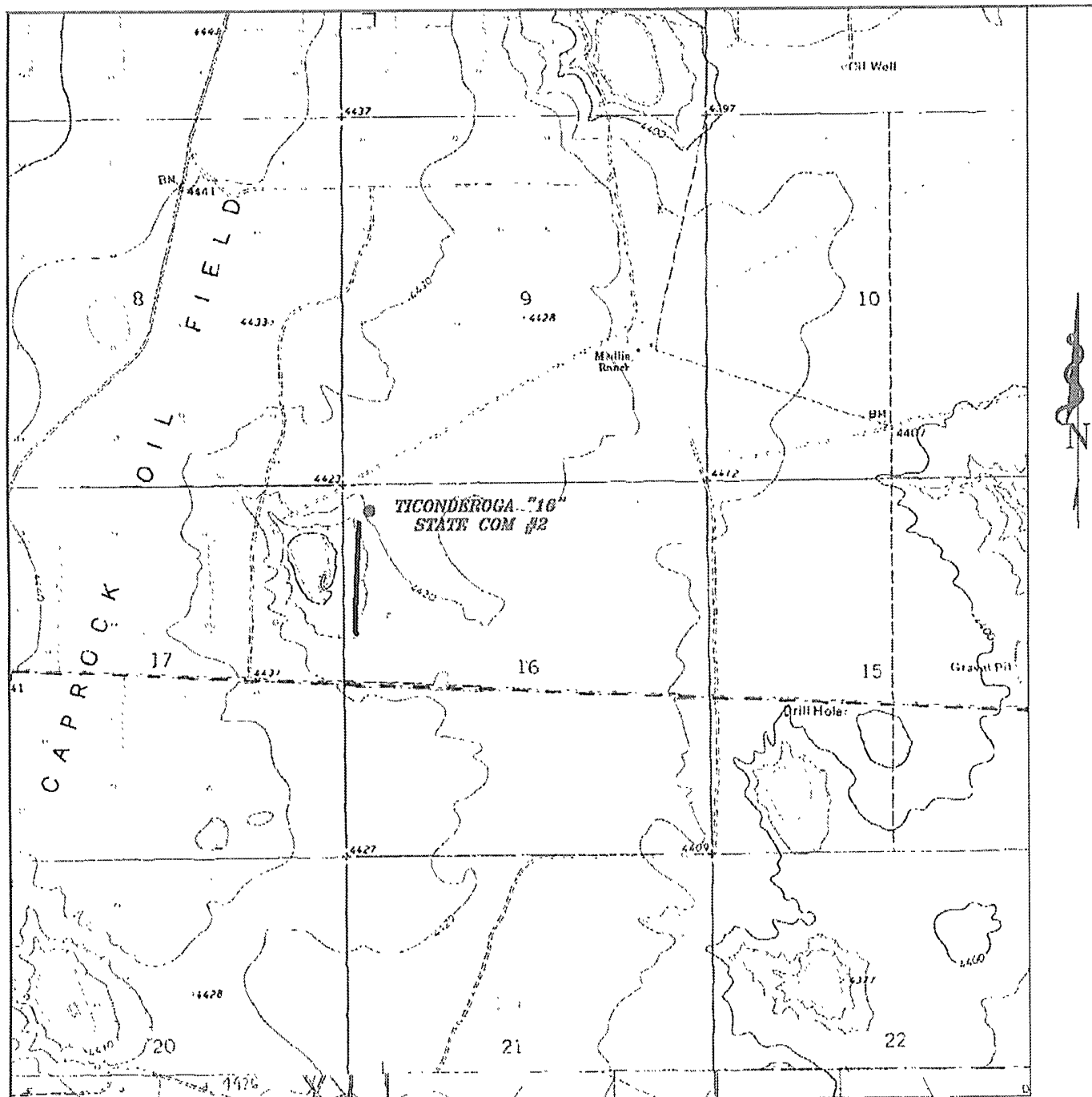
W.O. Number: KJG 22527

Survey Date: 04-05-2010

Scale: 1" = 2 MILES

Date: 04-06-2010

CIMAREX
ENERGY CO.
OF COLORADO



TICONDEROGA "16" STATE COM #2

Located 375' FNL and 330' FWL.

Section 16, Township 15 South, Range 31 East,
N.M.P.M., Chaves County, New Mexico.



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Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: KJG 22527

Survey Date: 04-05-2010

Scale: 1" = 2000'

Date: 04-06-2010

CIMAREX
ENERGY CO.
OF COLORADO

SECTION 16, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.,
CHAVES COUNTY, NEW MEXICO.

150' NORTH
OFF SET
4418.3'

CIMAREX ENERGY CO. OF COLORADO
TICONDEROGA "16" STATE COM #2
ELEV. - 4418'

150' WEST
OFF SET
4414.7'

150' EAST
OFF SET
4420.5'

Lat. -N 33°01'19.56"
Long -W 103°50'03.64"
(NAD-83)

150' SOUTH
OFF SET
4417.9'

PROPOSED LEASE ROAD 1340.7'

2225.5'

TICONDEROGA "16" STATE COM #1

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

Directions to Location:

FROM THE MILE MARKER 30 OF HWY 249; GO WEST
0.8 MILES TO LEASE ROAD. ON LEASE ROAD GO
NORTH 0.4 MILES TO LEASE ROAD, ON LEASE ROAD
GO NORTHEASTERLY 0.3 MILS TO PROPOSED LEASE
ROAD.

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

W.O. Number: 22527 Drawn By: K. GOAD

Date: 04-06-2010 Disk: KJG - 22527WELL.DWG

CIMAREX ENERGY CO. OF COLORADO

REF: TICONDEROGA "16" STATE COM #2 / WELL PAD TOPO

THE TICONDEROGA "16" STATE COM #2 LOCATED 375'
FROM THE NORTH LINE AND 330' FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 15 SOUTH, RANGE 31 EAST,
N.M.P.M., CHAVES COUNTY, NEW MEXICO.

Survey Date: 04-05-2010 Sheet 1 of 1 Sheets