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JUL 19 2012

NMOCD ARTESIADistrict I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 15, 2009

Submit one copy to appropriate

District Office

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number 30-015-40501		Pool Code 49622	Pool Name PARKWAY WEST; BONE SPRING
Property Code 38434	Property Name TURQUOISE PWU 27		Well Number 3H
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.		Elevation 3312.3

Surface Location

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	27	19 S	29 E		2250	SOUTH	330	WEST	EDDY

Bottom Hole Location If Different From Surface

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	27	19 S	29 E		2250	SOUTH	340	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160.00			

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.

NW CORNER SEC. 27 LAT. = 32.6390370°N LONG. = 104.0712463°W NMSP EAST (FT) N = 596312.05 E = 622012.94		NE CORNER SEC. 27 LAT. = 32.6389396°N LONG. = 104.0541330°W NMSP EAST (FT) N = 596290.05 E = 627280.86	
Project Area Lease Line Completion Interval			
W O CORNER SEC. 27 LAT. = 32.6317485°N LONG. = 104.0712904°W NMSP EAST (FT) N = 593660.44 E = 622005.89		E O CORNER SEC. 27 LAT. = 32.6316834°N LONG. = 104.0541238°W NMSP EAST (FT) N = 593650.20 E = 627290.61	
SURFACE LOCATION 330' KO-6949 TURQUOISE PWU 27-3H ELEV. = 3312.3' LAT. = 32.6306534°N (NAD83) LONG. = 104.0702216°W NMSP EAST (FT) N = 593262.84 E = 622355.95		BOTTOM HOLE 340' KO-4588 BOTTOM OF HOLE LAT. = 32.6306003°N LONG. = 104.0552289°W NMSP EAST (FT) N = 593255.20 E = 623951.45 KO-6949	
SW CORNER SEC. 27 LAT. = 32.6244740°N LONG. = 104.0713099°W NMSP EAST (FT) N = 591013.90 E = 622006.42		SE CORNER SEC. 27 LAT. = 32.6244132°N LONG. = 104.0541300°W NMSP EAST (FT) N = 591005.28 E = 627295.67	

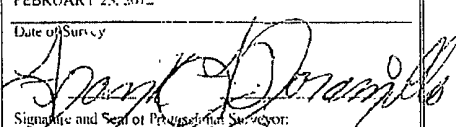
17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to 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.

Signature: 

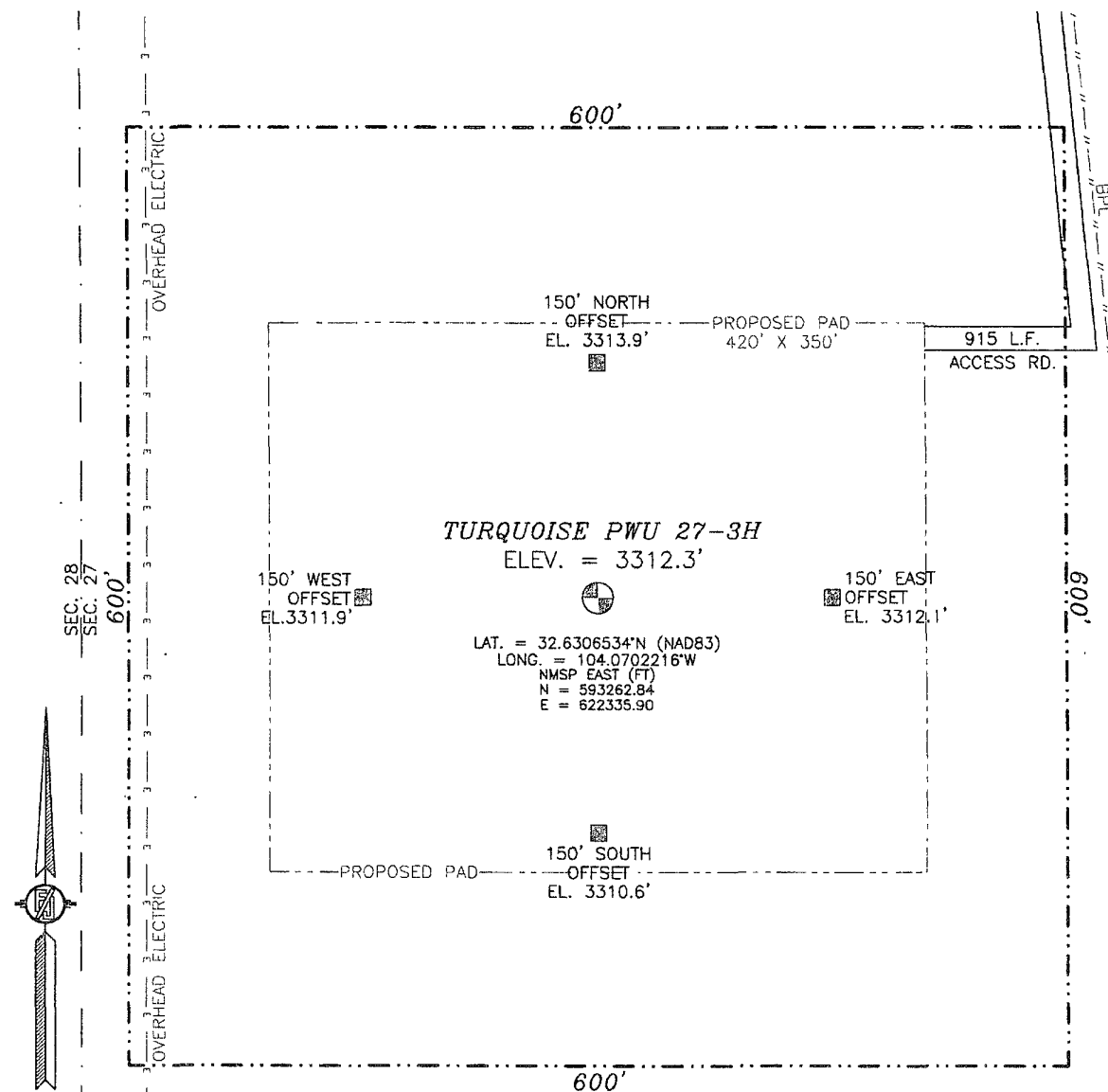
Date: 7/18/2012

Printed Name: David H. Cook

Regulatory Specialist

18 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.
 FEBRUARY 23, 2012
 Date of Survey: 
 Signature and Seal of Professional Surveyor:
 Certificate Number: FILLIPON F. JARAMILLO, PLS 12797
 SURVEY NO 793

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO



010 50 100 200

SCALE 1" = 100'
DIRECTIONS TO LOCATION

FROM THE INTERSECTION CR 206 (ILLINOIS CAMP) AND CURRY COMB (CR 235) GO SOUTHEAST ON CR 235 3.1 MILES TO "Y" AT CR 246 (MILLMAN RD.) AND CR 235 TAKE LEFT ON CR 235 GO 6.0 MILES THEN TAKE "Y" RIGHT (SOUTH) ON CALICHE RD GO 1.0 MILES THEN TAKE RIGHT (WEST) 0.25 MILES THEN GO RIGHT ON CALICHE RD. GO 0.45 MI THEN TAKE LEFT ON ROAD TO PARKWAY WEST UNIT 17 GO 0.3 MI. SITE IS SOUTH ABOUT 1000 FT.

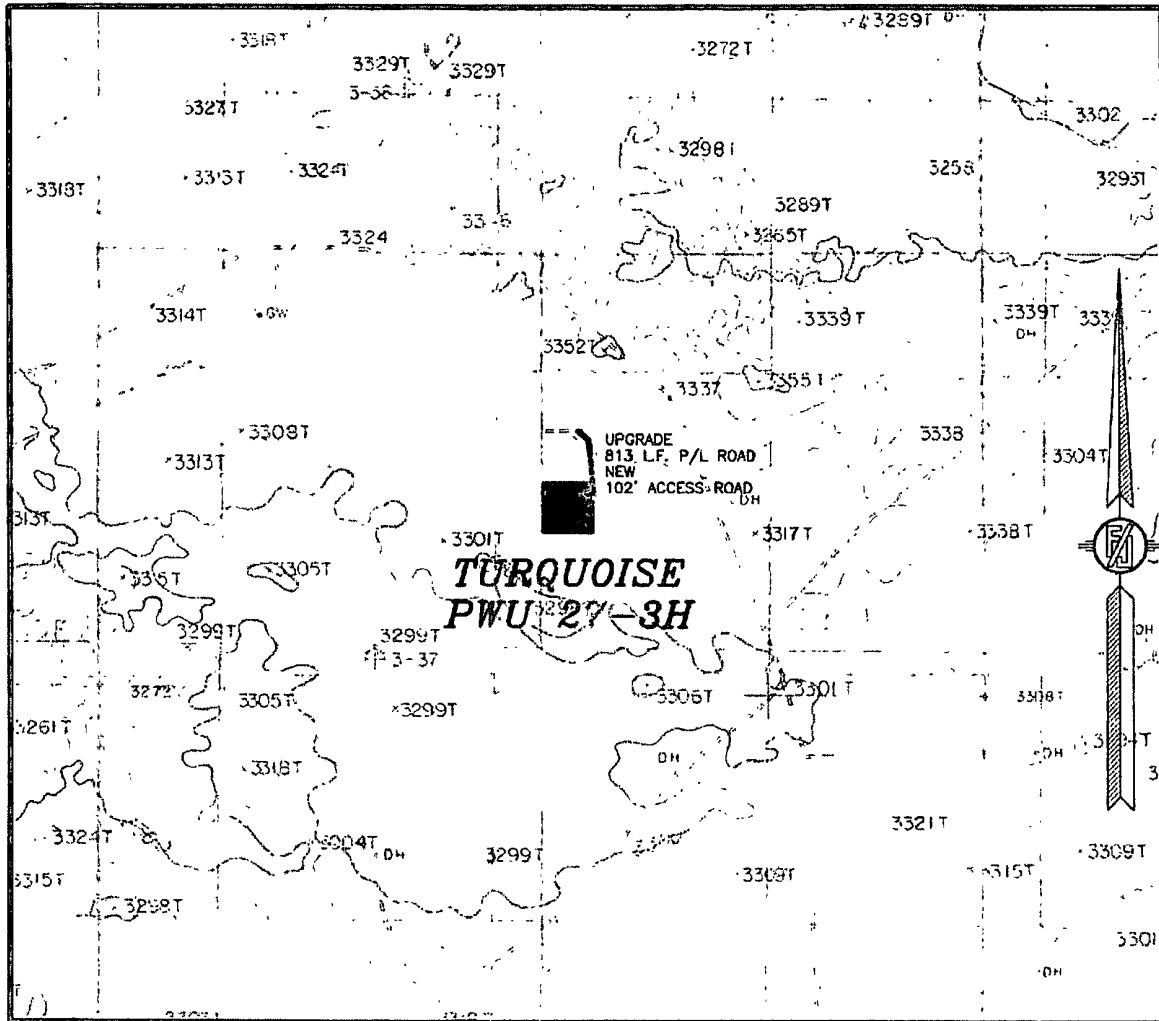
DEVON ENERGY PRODUCTION COMPANY, L.P.
TURQUOISE PWU 27-3H
LOCATED 2250 FT. FROM THE SOUTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 27, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 23, 2012

SURVEY NO. 793

MADRON SURVEYING, INC. 301 SOUTH CANAL (5/5) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
ILLINOIS CAMP NE

NOT TO SCALE

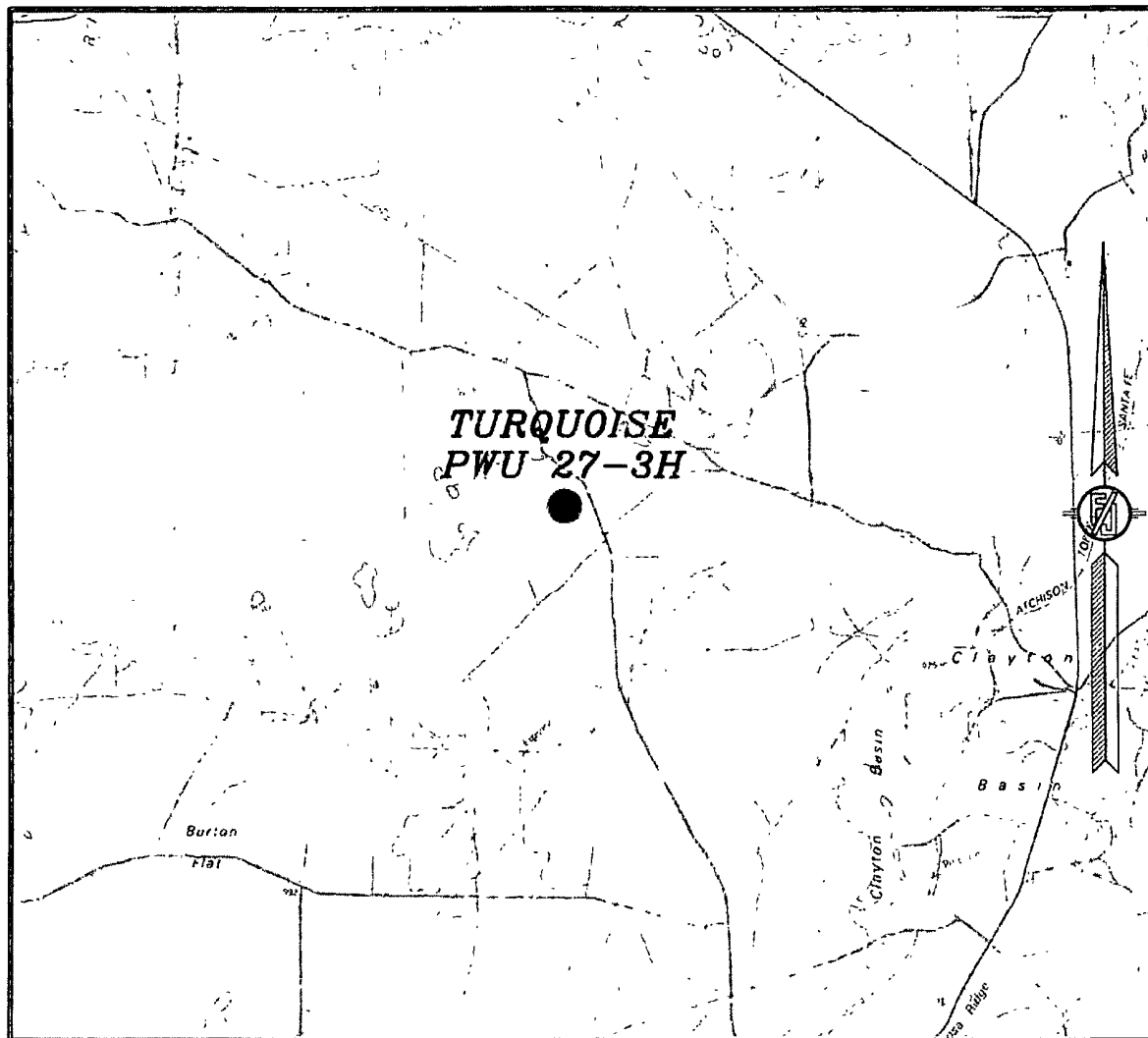
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EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 23, 2012

SURVEY NO. 793

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
TURQUOISE PWU 27-3H

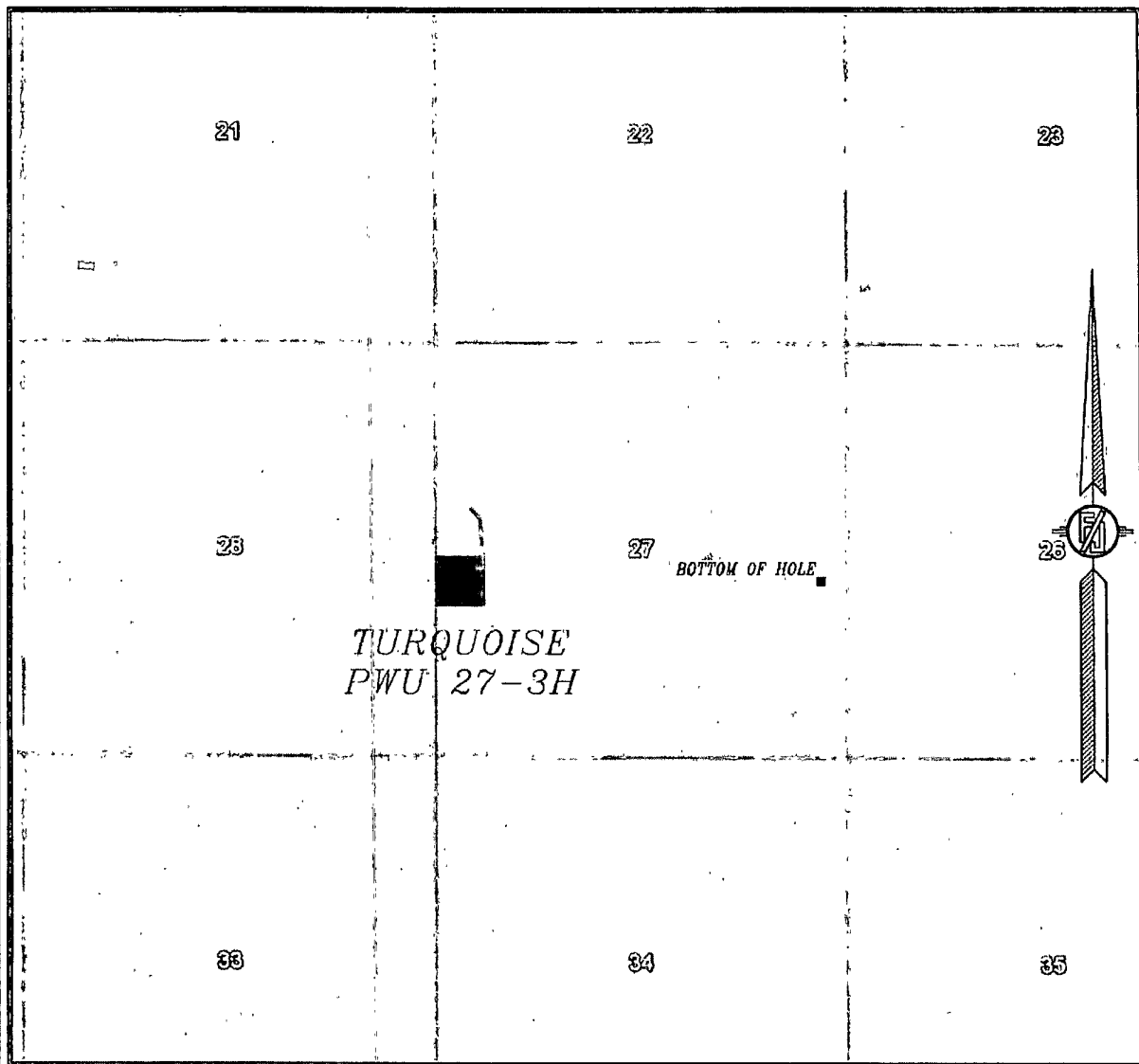
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FEBRUARY 23, 2012

SURVEY NO. 793

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAY 2011

DEVON ENERGY PRODUCTION COMPANY, L.P.
TURQUOISE PWU 27-3H

LOCATED 2250 FT. FROM THE SOUTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 27, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SURVEY NO. 793

FEBRUARY 23, 2012

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

Devon Energy Corporation

HALLIBURTON | Sperry Drilling



Project: Eddy County, NM (NAD 83)
 Site: Turquoise PWU 27
 Well: Turquoise PWU 27 3H
 Wellbore: Wellbore #1
 Plan: Plan #2
 Rig: Cactus 126

SURFACE LOCATION

US State Plane 1983
 New Mexico Eastern Zone
 Elevation: GL 3312'+ KB 25' @ 3337.00ft (Cactus 126)
 Northing Easting Latitude Longitude
 593262.84 622335.90 32° 37' 50.352 N 104° 4' 12.798 W

SECTION DETAILS

CASING DETAILS

TVD	MD	Name
300.00	300.00	Surface Csg
3400.00	3400.00	Intermediate Csg
8145.00	12401.23	Production Csg

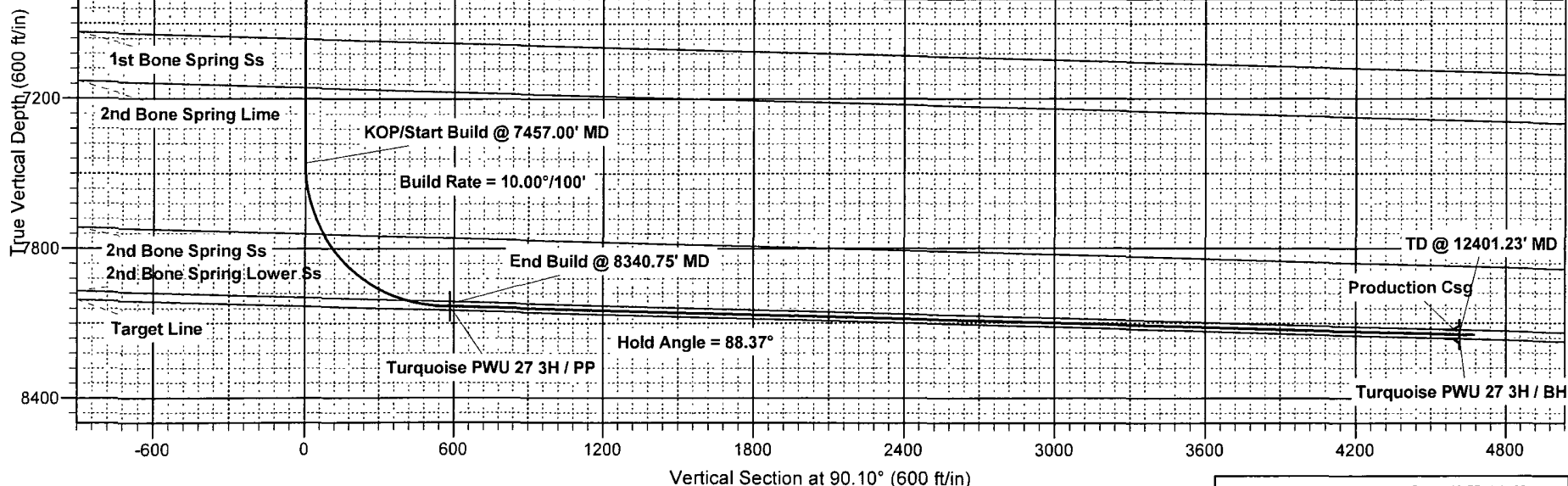
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7457.00	0.00	0.00	7457.00	0.00	0.00	0.00	0.00	0.00	KOP/Start Build
8057.00	60.00	90.02	7953.20	-0.10	286.48	10.00	90.02	286.48	
8340.75	88.37	90.10	8029.73	-0.40	556.71	10.00	0.17	556.71	End Build
12401.23	88.37	90.10	8145.00	-7.55	4615.55	0.00	151.13	4615.56	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Turquoise PWU 27 3H / PP	8030.00	-0.43	585.07	593262.41	622920.97	32° 37' 50.334 N	104° 4' 5.956 W
Turquoise PWU 27 3H / BHL	8145.00	-7.55	4615.55	593255.29	626951.45	32° 37' 50.161 N	104° 3' 18.824 W

To convert a Magnetic Direction to a Grid Direction, Add 7.68°

Magnetic Model: BGGM2012 Date: 02-Jul-12
 Azimuths to Grid North



Created By Irma Lecumberry Date 13 55, July 02 2012



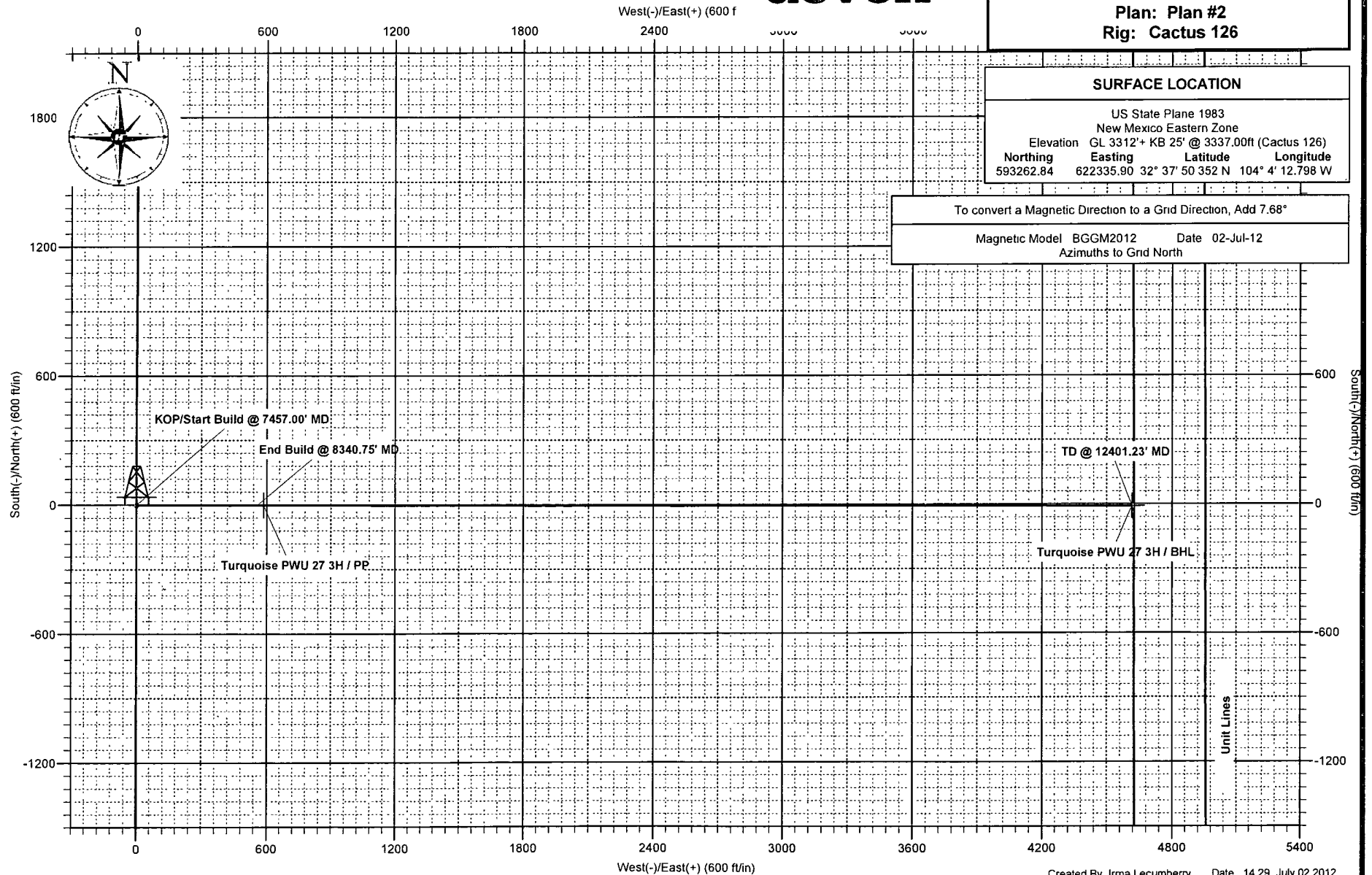
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 New Mexico Eastern Zone
 Elevation GL 3312' + KB 25' @ 3337.00ft (Cactus 126)
 Northing 593262.84 Easting 622335.90 Latitude 32° 37' 50.352 N Longitude 104° 4' 12.798 W

To convert a Magnetic Direction to a Grid Direction, Add 7.68°

Magnetic Model BGGM2012 Date 02-Jul-12
 Azimuths to Grid North



Devon Energy Corporation

Eddy County, NM (NAD 83)

Turquoise PWU 27

Turquoise PWU 27 3H

Wellbore #1

Plan: Plan #2

Sperry Drilling Services Proposal Report

02 July, 2012

Well Coordinates 593,262 84 N, 622,335 90 E (32° 37' 50 35" N, 104° 04' 12 80" W)
Ground Level 3,312 00 ft

Local Coordinate Origin	Centered on Well Turquoise PWU 27 3H
Viewing Datum	GL 3312'+ KB 25' @ 3337 00ft (Cactus 126)
TVDs to System	N
North Reference	Gnd
Unit System	API - US Survey Feet

Version 2003 16 Build 431

HALLIBURTON

Plan Report for Turquoise PWU 27 3H - Plan #2

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
300 00	0 00	0 00	300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Surface Csg										
375 00	0 00	0 00	375 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Salado										
1,250 00	0 00	0 00	1,250 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Tansil Dolomite										
1,390 00	0 00	0 00	1,390 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Yates										
1,725 00	0 00	0 00	1,725 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Seven Rivers										
2,155 00	0 00	0 00	2,155 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Queen										
2,830 00	0 00	0 00	2,830 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
San Andres										
3,400 00	0 00	0 00	3,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Intermediate Csg										
3,430 00	0 00	0 00	3,430 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Delaware										
5,190 00	0 00	0 00	5,190 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Cutoff Dolomite										
5,245 00	0 00	0 00	5,245 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Bone Spring Lm										
6,960 00	0 00	0 00	6,960 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1st Bone Spring Ss										
7,155 00	0 00	0 00	7,155 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2nd Bone Spring Lime										
7,457 00	0 00	0 00	7,457 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP/Start Build @ 7457.00' MD										
7,457 01	0 00	90 02	7,457 01	0 00	0 00	0 00	0 00	0 00	0 00	90 02
Build Rate = 10.00°/100'										
7,500 00	4 30	90 02	7,499 96	0 00	1 61	1 61	10 00	10 00	0 00	90 02
7,600 00	14 30	90 02	7,598 52	-0 01	17 75	17 75	10 00	10 00	0 00	0 00
7,700 00	24 30	90 02	7,692 78	-0 02	50 76	50 76	10 00	10 00	0 00	0 00
7,755 48	29 85	90 02	7,742 16	-0 03	76 00	76 00	10 00	10 00	0 00	0 00
2nd Bone Spring Ss										
7,800 00	34 30	90 02	7,779 88	-0 03	99 64	99 64	10 00	10 00	0 00	0 00
7,900 00	44 30	90 02	7,857 16	-0 06	162 90	162 90	10 00	10 00	0 00	0 00
8,000 00	54 30	90 02	7,922 29	-0 08	238 61	238 61	10 00	10 00	0 00	0 00
8,057 00	60 00	90 02	7,953 20	-0 10	286 48	286 48	10 00	10 00	0 00	0 00
8,100 00	64 30	90 03	7,973 28	-0 12	324 49	324 49	10 00	10 00	0 03	0 17
8,193 21	73 62	90 06	8,006 71	-0 19	411 39	411 39	10 00	10 00	0 03	0 16
2nd Bone Spring Lower Ss										
8,200 00	74 30	90 06	8,008 58	-0 20	417 92	417 91	10 00	10 00	0 03	0 15
8,300 00	84 30	90 09	8,027 13	-0 33	516 05	516 05	10 00	10 00	0 03	0 15
8,340 75	88 37	90 10	8,029 73	-0 40	556 71	556 71	10 00	10 00	0 03	0 15
End Build @ 8340.75' MD - Hold Angle = 88.37°										
8,400 00	88 37	90 10	8,031 41	-0 50	615 94	615 94	0 00	0 00	0 00	30 09
8,500 00	88 37	90 10	8,034 24	-0 67	715 90	715 90	0 00	0 00	0 00	151 13
8,600 00	88 37	90 10	8,037 08	-0 85	815 86	815 86	0 00	0 00	0 00	151 13
8,700 00	88 37	90 10	8,039 92	-1 02	915 81	915 82	0 00	0 00	0 00	151 13
8,800 00	88 37	90 10	8,042 75	-1 20	1,015 77	1,015 77	0 00	0 00	0 00	151 13
8,900 00	88 37	90 10	8,045 59	-1 37	1,115 73	1,115 73	0 00	0 00	0 00	151 13
9,000 00	88 37	90 10	8,048 43	-1 55	1,215 69	1,215 69	0 00	0 00	0 00	151 13
9,100 00	88 37	90 10	8,051 26	-1 72	1,315 65	1,315 65	0 00	0 00	0 00	151 13
9,200 00	88 37	90 10	8,054 10	-1 90	1,415 61	1,415 61	0 00	0 00	0 00	151 13

Plan Report for Turquoise PWU 27 3H - Plan #2

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
9,300.00	88.37	90.10	8,056.94	-2.07	1,515.57	1,515.57	0.00	0.00	0.00	151.13
9,400.00	88.37	90.10	8,059.77	-2.25	1,615.53	1,615.53	0.00	0.00	0.00	151.13
9,500.00	88.37	90.10	8,062.61	-2.42	1,715.49	1,715.49	0.00	0.00	0.00	151.13
9,600.00	88.37	90.10	8,065.45	-2.60	1,815.45	1,815.45	0.00	0.00	0.00	151.13
9,700.00	88.37	90.10	8,068.29	-2.78	1,915.41	1,915.41	0.00	0.00	0.00	151.13
9,800.00	88.37	90.10	8,071.13	-2.95	2,015.37	2,015.37	0.00	0.00	0.00	151.13
9,900.00	88.37	90.10	8,073.96	-3.13	2,115.33	2,115.33	0.00	0.00	0.00	151.13
10,000.00	88.37	90.10	8,076.80	-3.30	2,215.29	2,215.29	0.00	0.00	0.00	151.13
10,100.00	88.37	90.10	8,079.64	-3.48	2,315.25	2,315.25	0.00	0.00	0.00	151.13
10,200.00	88.37	90.10	8,082.48	-3.65	2,415.21	2,415.21	0.00	0.00	0.00	151.13
10,300.00	88.37	90.10	8,085.32	-3.83	2,515.17	2,515.17	0.00	0.00	0.00	151.13
10,400.00	88.37	90.10	8,088.16	-4.01	2,615.13	2,615.13	0.00	0.00	0.00	151.13
10,500.00	88.37	90.10	8,090.99	-4.18	2,715.09	2,715.09	0.00	0.00	0.00	151.13
10,600.00	88.37	90.10	8,093.83	-4.36	2,815.05	2,815.05	0.00	0.00	0.00	151.13
10,700.00	88.37	90.10	8,096.67	-4.54	2,915.01	2,915.01	0.00	0.00	0.00	151.13
10,800.00	88.37	90.10	8,099.51	-4.71	3,014.97	3,014.97	0.00	0.00	0.00	151.13
10,900.00	88.37	90.10	8,102.35	-4.89	3,114.93	3,114.93	0.00	0.00	0.00	151.13
11,000.00	88.37	90.10	8,105.19	-5.07	3,214.88	3,214.89	0.00	0.00	0.00	151.13
11,100.00	88.37	90.10	8,108.03	-5.24	3,314.84	3,314.85	0.00	0.00	0.00	151.13
11,200.00	88.37	90.10	8,110.87	-5.42	3,414.80	3,414.81	0.00	0.00	0.00	151.13
11,300.00	88.37	90.10	8,113.71	-5.60	3,514.76	3,514.77	0.00	0.00	0.00	151.13
11,400.00	88.37	90.10	8,116.55	-5.77	3,614.72	3,614.73	0.00	0.00	0.00	151.13
11,500.00	88.37	90.10	8,119.39	-5.95	3,714.68	3,714.69	0.00	0.00	0.00	151.13
11,600.00	88.37	90.10	8,122.23	-6.13	3,814.64	3,814.65	0.00	0.00	0.00	151.13
11,700.00	88.37	90.10	8,125.07	-6.30	3,914.60	3,914.61	0.00	0.00	0.00	151.13
11,800.00	88.37	90.10	8,127.92	-6.48	4,014.56	4,014.57	0.00	0.00	0.00	151.13
11,900.00	88.37	90.10	8,130.76	-6.66	4,114.52	4,114.53	0.00	0.00	0.00	151.13
12,000.00	88.37	90.10	8,133.60	-6.84	4,214.48	4,214.49	0.00	0.00	0.00	151.13
12,100.00	88.37	90.10	8,136.44	-7.01	4,314.44	4,314.44	0.00	0.00	0.00	151.13
12,200.00	88.37	90.10	8,139.28	-7.19	4,414.40	4,414.40	0.00	0.00	0.00	151.13
12,300.00	88.37	90.10	8,142.12	-7.37	4,514.36	4,514.36	0.00	0.00	0.00	151.13
12,400.00	88.37	90.10	8,144.96	-7.55	4,614.32	4,614.32	0.00	0.00	0.00	0.00
12,401.23	88.37	90.10	8,145.00	-7.55	4,615.55	4,615.55	0.00	0.00	0.00	0.00

TD @ 12401.23' MD - Production Csg

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
7,457.00	7,457.00	0.00	0.00	KOP/Start Build @ 7457.00' MD
7,457.01	7,457.01	0.00	0.00	Build Rate = 10.00°/100'
8,340.75	8,029.73	-0.10	286.48	End Build @ 8340.75' MD
8,340.75	8,029.73	-0.40	556.71	Hold Angle = 88.37°
12,401.23	8,145.00	-0.40	556.71	TD @ 12401.23' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	90.10	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,401.23	Plan #2	MWD

Plan Report for Turquoise PWU 27 3H - Plan #2

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
300 00	300 00	Surface Csg	13-3/8	17-1/2
3,400 00	3,400 00	Intermediate Csg	9-5/8	12-1/4
12,401 23	8,145 00	Production Csg	5-1/2	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	8,030 00	Target Line		1 63	90 10
375 00	375 00	Salado		1 63	90 10
1,250 00	1,250 00	Tansil Dolomite		1 63	90 10
1,390 00	1,390 00	Yates		1 63	90 10
1,725 00	1,725 00	Seven Rivers		1 63	90 10
2,155 00	2,155 00	Queen		1 63	90 10
2,830 00	2,830 00	San Andres		1 63	90 10
3,430 00	3,430 00	Delaware		1 63	90 10
5,190 00	5,190 00	Cutoff Dolomite		1 63	90 10
5,245 00	5,245 00	Bone Spring Lm		1 63	90 10
6,960 00	6,960 00	1st Bone Spring Ss		1 63	90 10
7,155 00	7,155 00	2nd Bone Spring Lime		1 63	90 10
7,755 48	7,740 00	2nd Bone Spring Ss		1 63	90 10
8,193 21	7,995 00	2nd Bone Spring Lower Ss		1 63	90 10

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Turquoise PWU 27 3H / BHL	8,145 00	-7 55	4,615 55	Point
Turquoise PWU 27 3H / PP	8,030 00	-0 43	585 07	Point

**North Reference Sheet for Turquoise PWU 27 - Turquoise PWU 27 3H - Wellbore
#1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL 3312' + KB 25' @ 3337 00ft (Cactus 126). Northing and Easting are relative to Turquoise PWU 27 3H.

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980.

Projection method is Transverse Mercator (Gauss-Kruger).

Central Meridian is -104 33°, Longitude Origin 0° 0' 0 000 E°, Latitude Origin 0° 0' 0 000 N°.

False Easting 541,337 50ft, False Northing 0 00ft, Scale Reduction 0.99991660.

Grid Coordinates of Well: 593,262 84 ft N, 622,335 90 ft E.

Geographical Coordinates of Well: 32° 37' 50 35" N, 104° 04' 12 80" W.

Grid Convergence at Surface is 0 14°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,401 23ft.

the Bottom Hole Displacement is 4,615 55ft in the Direction of 90 09° (Grid).

Magnetic Convergence at surface is -7 68° (2 July 2012, BGGM2012).

