District I
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Phone (575) 393-6161 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 Road, 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

HOBBS OCD

JUL 0 6 2012

RECEIVED

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised August 1, 2011

Permit

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

[1] Operator Name and Address	[2] OGRID Number
DEVON ENERGY PRODUCTION COMPANY, L.P. 333 W. SHERIDAN, OKLAHOMA CITY, OK. 73102	6137
	[3] API Number 30-025-40676

[4] Property Code	[5] Property Name	[6] Well No.
39319	IRONHOUSE 19 STATE COM	1H

[7] Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
N	19	18S	35E		200	S	1800	W	LEA

[8] Pool Information

WC-025-G06 S183518A; ~~UNDESIGNATED~~ BONE SPRING	97930

Additional Well Information

[9] Work Type	[10] Well Type	[11] Cable/Rotary	[12] Lease Type	[13] Ground Level Elevation
N	0	R	S	3951.6'
[14] Multiple	**[15] Proposed Depth**	**[16] Formation**	**[17] Contractor**	**[18] Spud Date**
No	TVD: 9870' MD: 14375'	Bone Spring	H & P	
Depth to Ground water 200'	Distance from nearest fresh water well 0.5 miles		Distance to nearest surface water 5 miles	

[19] Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	17 ½"	13 3/8"	48#	1825	1435	Surface
	12 1/4"	9 5/8"	40#	3200	1015	Surface
	8 3/4"	5 1/2"	17#	9100	2800	2700'
	8 3/4"	5 1/2"	17#	14375		

Casing/Cement Program: Additional Comments

See attached Drilling Plan, Horizontal Plan & BOP

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
13 5/8"Triple Ram 2FZ35-35	3,000#	3,000#	Shaffer

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐. Closed Loop.

Printed name: Barry W. Hunt

Title. Permit Agent

E-mail Address: specialtpermitting@gmail.com

Date: 07/05/12 Phone (575) 361-4078

OIL CONSERVATION DIVISION

Approved By:

Title: PETROLEUM ENGINEER

Approved Date: Expiration Date:

JUL 0 6 2014

Conditions of Approval Attached

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HOBBS OCD
JUL 06 2012
RECEIVED

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-40676	97930	WC-025-G06518351 8A; ~~UNDESIGNATED~~ BONE SPRING

Property Code	Property Name	Well Number
39319	IRONHOUSE 19 STATE COM	1H

OGRID No	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, LP	3951.6'

Surface Location

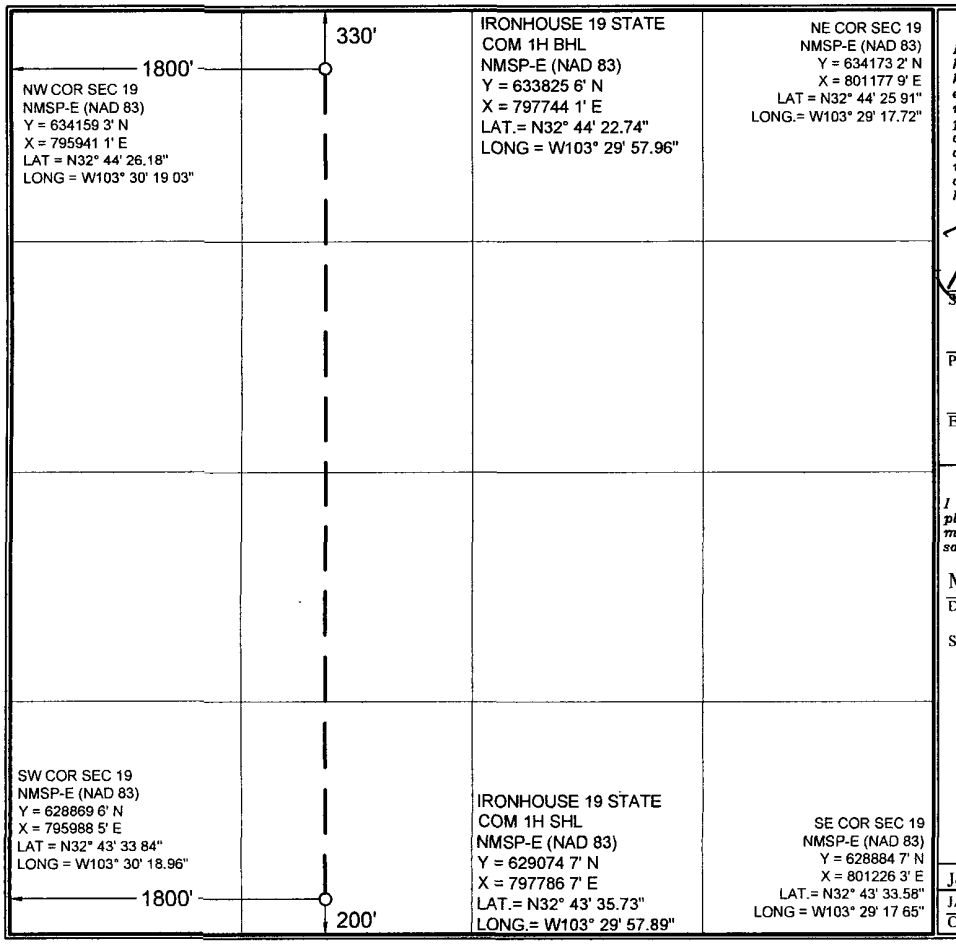
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	19	18 S	35 E		200	SOUTH	1800	WEST	LEA

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
C	19	18 S	35 E		330	NORTH	1800	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidated Code	Order No
160			

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.



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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Barry W. Hunt 7/5/12
Signature Date

Barry W. Hunt
Print Name

E-mail Address

SURVEYORS 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.

MAY 15, 2012
Date of Survey

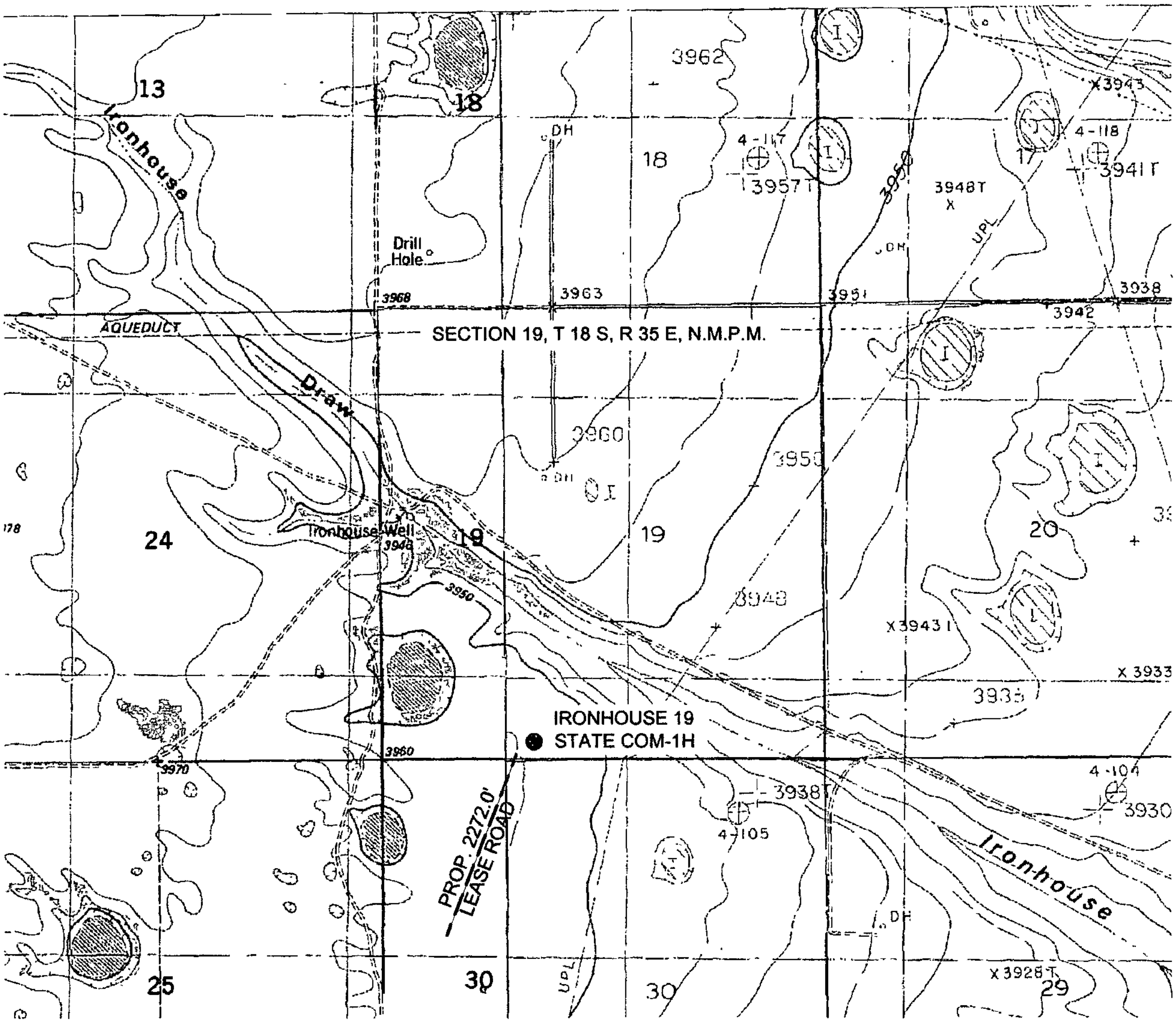
Signature and Seal of Professional Surveyor

JAMES E. TOMPKINS NEW MEXICO 14729 REGISTERED PROFESSIONAL LAND SURVEYOR

Job No.: WTC48541

JAMES E TOMPKINS 14729
Certificate Number

LOCATION VERIFICATION MAP



SCALE 1" = 2000'

SECTION 19, T 18 S, R 35 E, N.M.P.M.

COUNTY: LEA STATE: NM

DESCRIPTION. 200' FSL & 1800' FWL

OPERATOR. DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 19 STATE COM-1H

N
W E
S

DRIVING DIRECTIONS:

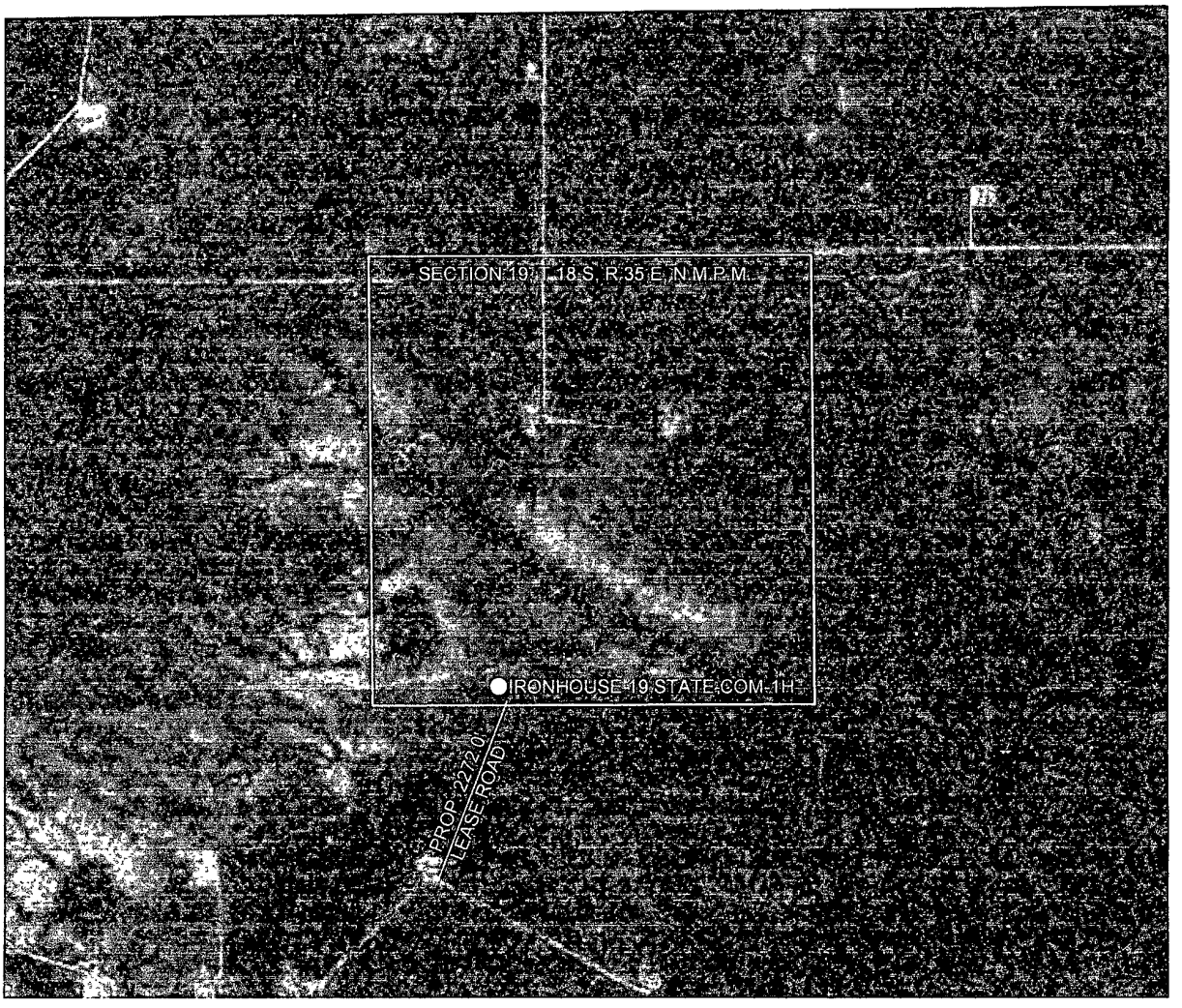
FROM THE JCT. OF HWY'S 529 AND 62-180 ABOUT 12 MILES WEST OF HOBBS NM, GO WEST ON 529 FOR 8 1 MILES TO VAN NOY ROAD ON YOUR RIGHT. GO NORTH ON VAN NOY ROAD 0 4 MI., THE EAST 0 5 MI. THEN NORTH 0.6 MI , THEN EAST 0.2 MI., THEN NORTHEAST 0.7 MI. TO THE PROPOSED LEASE ROAD LEFT AND THE LOCATION FLAG ± 2400 FEET NORTH-NORTHEAST.

WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S W 1st STREET
ANDREWS, TEXAS 79714
(432) 523-2181

devon

JOB No WTC48541

AERIAL MAP



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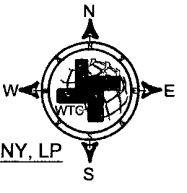

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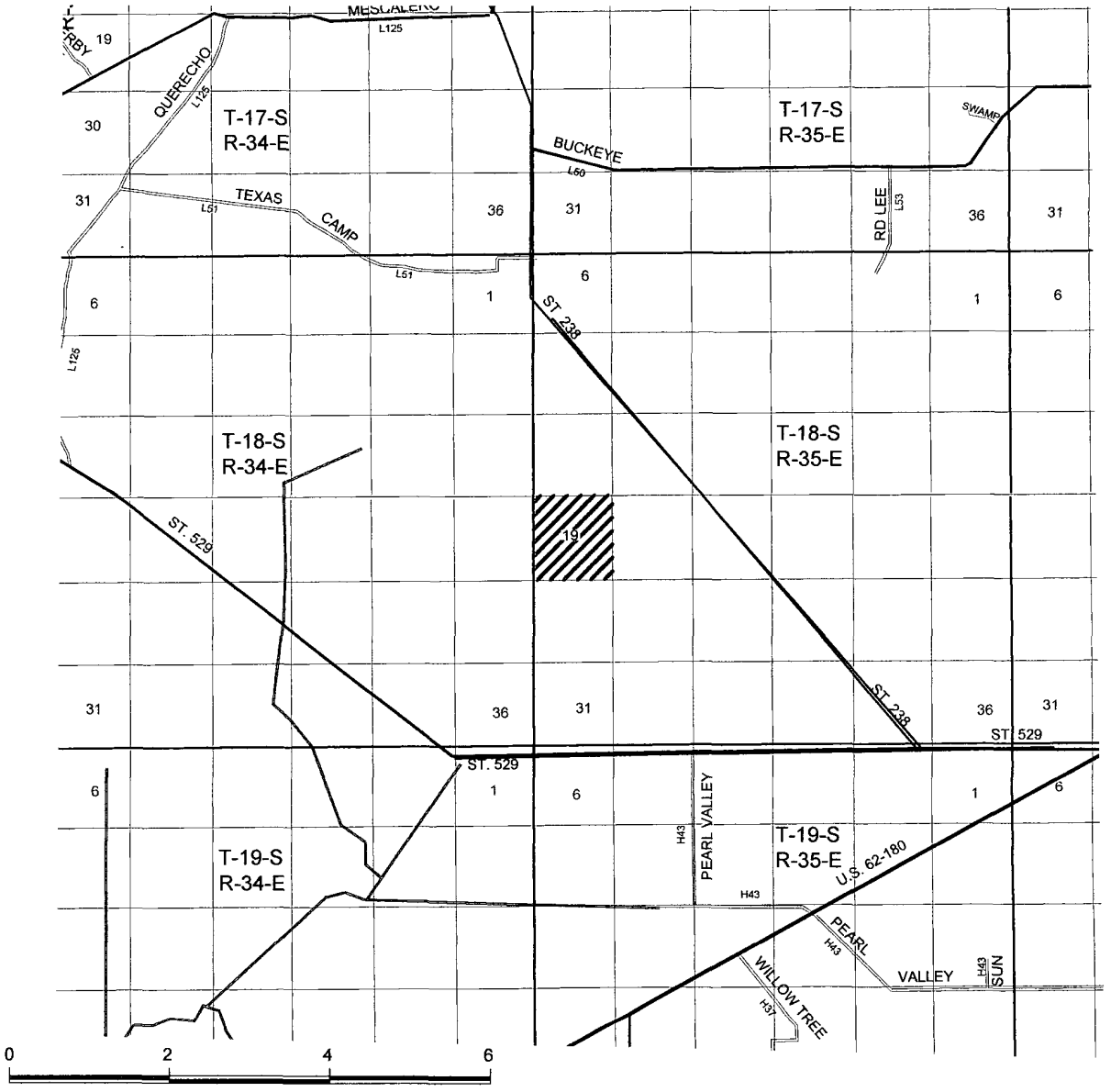
devon

JOB No WTC48541

VICINITY MAP



GRAPHIC SCALE OF MILES 1" = 2 MILE

SECTION 19, T 18 S, R 35 E, N.M.P.M.

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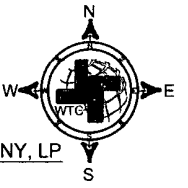
DESCRIPTION: 200' FSL & 1800' FWL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 19 STATE COM-1H



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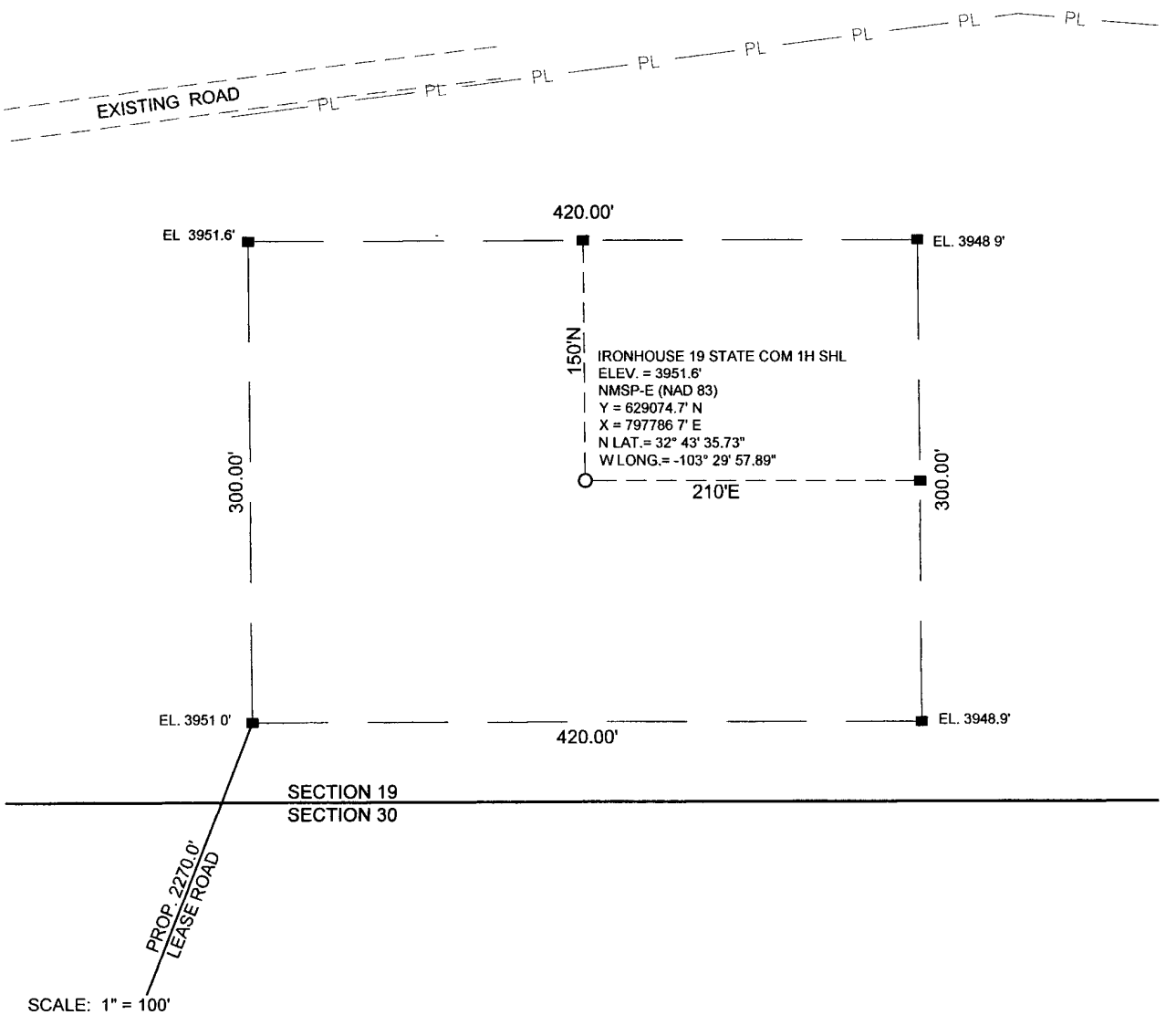
SITE LOCATION



SCALE: 1" = 100'

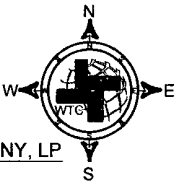
SECTION 19, T 18 S, R 35 E, N M.P.M

COUNTY. LEA STATE: NM

DESCRIPTION: 200' FSL & 1800' FWL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 19 STATE COM-1H



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API Number	Pool Code	Pool Name
		UNDESIGNATED BONE SPRING

Property Code	Property Name	Well Number
	IRONHOUSE 19 STATE COM	1H

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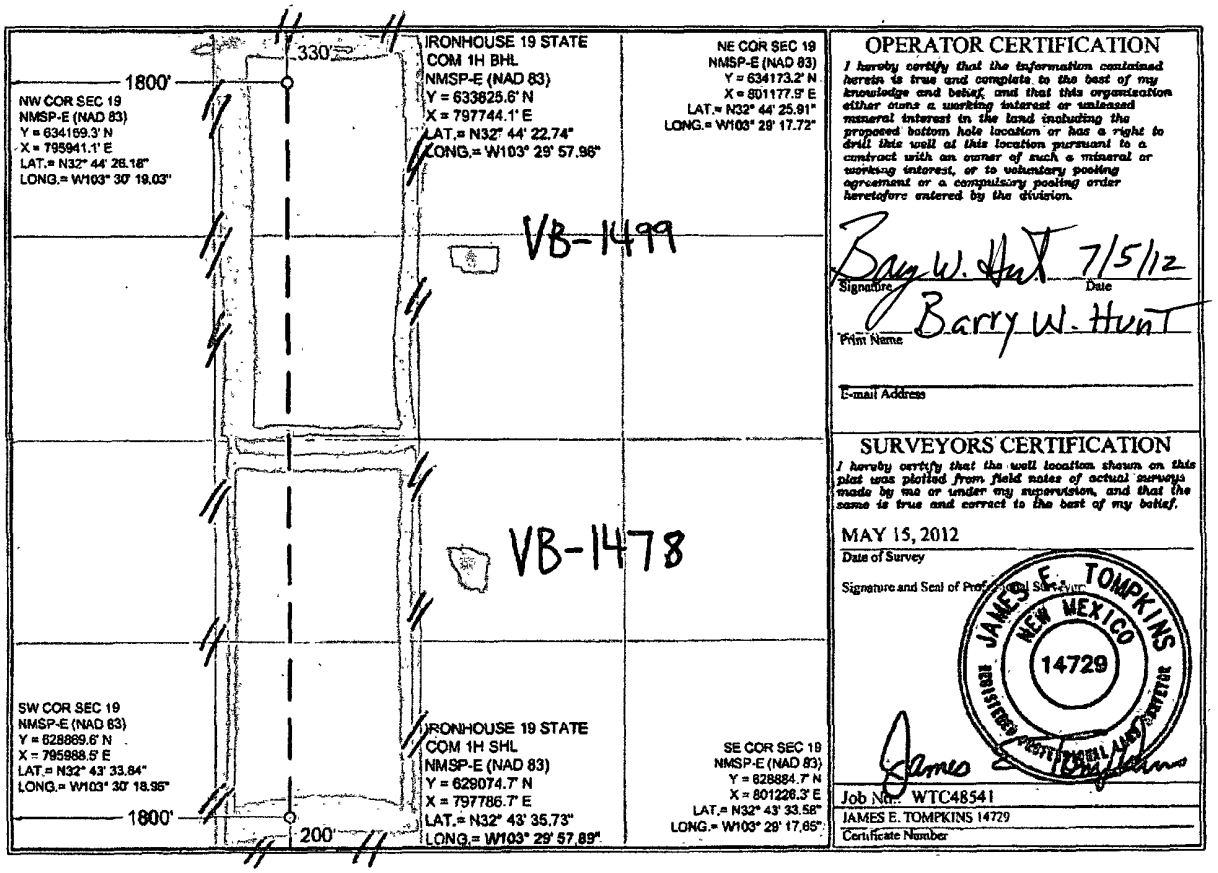

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Barry W. Hunt 7/5/12
Signature Date

Barry W. Hunt
Print Name

E-mail Address

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MAY 15, 2012
Date of Survey

Signature and Seal of Professional Surveyor

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL LAND SURVEYOR

James E. Tompkins

Job No. WTC48541
JAMES E. TOMPKINS 14729
Certificate Number

GEOLOGIC PROGNOSIS

WELL NAME: Ironhouse 19 State Com 1H API#: 30-025-

SURFACE LOCATION SL 1800 FWL & 200 FSL 19-18S-34E

BOTTOM HOLE LOCATION BHL 1800 FWL & 330 FNL 19-18s-35e (0 degree azimuth from surface location and a 4.5 degree updip lateral)

PLANNED TD: PRIMARY OBJECTIVE: 2nd BONE SPRING SAND

KB: 3972 GL. 3952 MUD: CUT BRINE (confirm on location) BIT: CASING:

RIG: RIG CONTACT:

PRODUCING FM : Bone Spring POOL NAME: airstrip

ESTIMATED BHP/BHT: 4600 psi 130degF

GEOLOGISTS: ZACH POLAND AND STEVE BURNS

office: 405-228-8849/ 405-228-4346 cell (after hours/weekends): 405-323-1411/ 405-301-4852 home:

email. zack.poland@dvn.com/ stephen.burns@dvn.com mailing address: Devon Energy, 20 N Broadway, Oklahoma City, OK 73102-8260

REFERENCE WELLS

WELL	LOCATION
Mesa Pet- Mesa_Merritt State #1	19-18S-35E

KNOWN OR POTENTIAL HAZARDS/REMARKS.

No known hazards.

Pilot Hole

GEOLOGIC MARKERS

KB: 3972	PROGNOSIS		MUDLOG			E-LOG			
FORMATION / CASING	MD	subsea	MD	subsea	hi/lo	MD	subsea	hi/lo	NOTES
QUATERNARY	20	3952							
RUSTLER DOL	1789	2183							
SALADO SALT	1960	2012							
Base of Salt	3090	882							
YATES SS	3254	718							
QUEEN SS.	4456	-484							
GRAYBURG	4720	-748							
CHERRY CANYON	5940	-1968							
BRYSHY CANYON	7200	-3228							
1ST BONE SPRING LM.	7378	-3406							
1ST BONE SPRING SS	8840	-4868							
2ND BONE SPRING LM	8900	-4928							
2ND BONE SPRING SS	9300	-5328							
BONE SPRING SAND TARGET	9870	-5898							Primary Pay Target OIL
Pilot hole TD	10900	-6928							

MUDLOGGING PROGRAM

Ironhouse 19 State Com 1H– APD DRILLING PLAN
KKS 5-28-12

Casing Program

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17-1/2"	0 – 1,825	13-3/8"	0 – 1,825	48#	STC	H-40
12-1/4"	1,825 – 3,200	9-5/8"	0 – 3,200	40#	LTC	J-55
8-3/4"	3,200– 9,100	5-1/2"	0 – 9,100	17#	LTC	HCP-110
8-3/4"	9,100 – 14,375	5-1/2"	9,100– 14,375	17#	BTC	HCP-110

Max TVD in lateral: 7,870'

Pilot Hole will be drilled to 10,900' and plugged back. Pilot hole plug back cement specifications are under "**Pilot Hole Plug Back"** in the cementing section.

Mud Program:

Depth	Mud Wt.	Visc.	Fluid Loss	Type System
0 – 1,825	8.4 – 9.0	30 – 34	N/C	FW
1,825 – 3,200	9.6 – 10.0	28 – 32	N/C	Brine
3,200 – 14,375	8.6 – 9.0	28 – 32	N/C-12	FW

Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as a 3M system prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Cementing Program

13-3/8 Surface Casing

FLUID SPECIFICATIONS

Spacer — 20.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	2036	/	1.97	= 1035 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 1% bwoc Sodium Metasilicate + 5% bwoc MPA-5 + 101.3% Fresh Water
Tail Slurry	534	/	1.34	= 400 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.2% Fresh Water

Displacement — 280.3 bbls Mud @ 9 ppg

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	12.80	14.80
Slurry Yield (cf/sack)	1.97	1.34
Amount of Mix Water (gps)	10.56	6.34
Estimated Pumping Time - 70 BC (HH:MM)	3:30	2:30
COMPRESSIVE STRENGTH		
72 hrs @ 80 ° F (psi)		2700
7 hrs @ 93 ° F (psi)		500
12 hrs @ 93 ° F (psi)	350	1000
17 hrs @ 93 ° F (psi)	500	
24 hrs @ 93 ° F (psi)	750	1600

ACTUAL CEMENT VOLUMES MAY VARY BASED ON FLUID CALIPER.

9-5/8 Intermediate Casing

FLUID SPECIFICATIONS

Spacer — 20.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	1239	/	1.73	= 715 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 1% bwoc Sodium Metasilicate + 89.7% Fresh Water
Tail Slurry	413	/	1.38	= 300 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.5% Fresh Water

Displacement — 239.6 bbls Mud @ 10 ppg

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	12.60	13.80
Slurry Yield (cf/sack)	1.73	1.38
Amount of Mix Water (gps)	8.82	6.44
Estimated Pumping Time - 70 BC (HH:MM)	3:30	2:30
COMPRESSIVE STRENGTH		
12 hrs @ 90 ° F (psi)	275	
24 hrs @ 90 ° F (psi)	875	
72 hrs @ 90 ° F (psi)	1600	
8 hrs @ 112 ° F (psi)		500
12 hrs @ 112 ° F (psi)		1400
24 hrs @ 112 ° F (psi)		2400

ACTUAL CEMENT VOLUMES MAY VARY BASED ON CALIPER.

5-1/2 Production Casing-Single Stage

FLUID SPECIFICATIONS

Spacer	50.0 bbls Fresh Water @ 8.34 ppg
Spacer	1,500.0 gals Mud Clean II @ 8.45 ppg
Spacer	10.0 bbls Fresh Water @ 8.34 ppg
Spacer	40.0 bbls SealBond @ 8.75 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
1st Lead Slurry	1798	/	2.3	= 780 sacks (50:50) Poz (Fly Ash):Class H Cement + 0.5% bwoc FL-52 + 0.3% bwoc ASA-301 + 10% bwoc Bentonite + 0.1% bwoc R-21 + 130.7% Fresh Water
Lead Slurry	1415	/	2	= 710 sacks (35:65) Poz (Fly Ash):Class H Cement + 3% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.7% bwoc FL-52 + 6% bwoc Bentonite + 105.4% Fresh Water
Tail Slurry	1672	/	1.28	= 1310 sacks (50:50) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.5% bwoc FL-52 + 0.4% bwoc Sodium Metasilicate + 57.2% Fresh Water
Displacement				333.3 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2	SLURRY NO.3
Slurry Weight (ppg)	11.90	12.50	14.20
Slurry Yield (cf/sack)	2.30	2.00	1.28
Amount of Mix Water (gps)	13.16	10.39	5.76
Estimated Pumping Time - 70 BC (HH:MM)	4:00	5:00	3:30
Free Water (mls) @ ° F @ 90 ° Angle			0.0
Fluid Loss (cc/30min) at 1000 psi and ° F			50.0
COMPRESSIVE STRENGTH			
12 hrs @ 130 ° F (psi)	150		
24 hrs @ 130 ° F (psi)	250		
72 hrs @ 130 ° F (psi)	350		
12 hrs @ 140 ° F (psi)		175	
24 hrs @ 140 ° F (psi)		250	
72 hrs @ 140 ° F (psi)		700	
12 hrs @ 150 ° F (psi)			250
24 hrs @ 150 ° F (psi)			1500
72 hrs @ 150 ° F (psi)			2000

ACTUAL CEMENT VOLUMES MAY VARY BASED ON CALIPER

Pilot Hole Plug Back

FLUID SPECIFICATIONS

Spacer = 15.0 bbls Mud Clean II

PLUG NO.	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
1	803	/	1.18	= 680 sacks Class H Cement + 0.2% bwoc R-3 + 46.4% Fresh Water

CEMENT PROPERTIES

	PLUG NO.1
Slurry Weight (ppg)	15.60
Slurry Yield (cf/sack)	1.18
Amount of Mix Water (gps)	5.22
Estimated Pumping Time - 70 BC (HH:MM)	2:15
COMPRESSIVE STRENGTH	
12 hrs @ 143 ° F (psi)	4850
24 hrs @ 143 ° F (psi)	7100

PLUG GEOMETRY

	PLUG TOP		PLUG BOTTOM	
1	9297 ft	to	10900 ft	with 8.75 inch Open Hole PDSqT = 144 ° F PDST = 167.2 ° F

5-1/2 Production Casing cont.

STAGE NO. 2

Spacer				20.0 bbls Fresh Water @ 8.34 ppg
Lead Slurry	1592	/	2.88	= 555 sacks Class C Cement ÷ 1.5% bwoc R-3 ÷ 0.125 lbs/sack Cello Flake ÷ 3% bwoc Sodium Metasilicate ÷ 156.9% Fresh Water
Tail Slurry	206	/	1.37	= 150 sacks (60:40) Poz (Fly Ash):Class C Cement ÷ 5% bwow Sodium Chloride ÷ 0.125 lbs/sack Cello Flake ÷ 4% bwoc MPA-5 ÷ 65.3% Fresh Water

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Displacement			151.1 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	11.40	13.80
Slurry Yield (cf/sack)	2.88	1.37
Amount of Mix Water (gps)	17.69	6.42
Estimated Pumping Time - 70 BC (HH:MM)	3:45	2:30
Free Water (mls) @ ° F @ 90 ° Angle		
Fluid Loss (cc/30min) at 1000 psi and ° F		
COMPRESSIVE STRENGTH		
12 hrs @ 112 ° F (psi)	130	
24 hrs @ 112 ° F (psi)	300	
12 hrs @ 125 ° F (psi)		900
24 hrs @ 125 ° F (psi)		1800
72 hrs @ 125 ° F (psi)		2500

CEMENT VOLUMES MAY VARY BASED ON CALIPER.

TOC for All Strings:

Surface:	0’
Intermediate:	0’
Production:	2,700’

Devon Energy Corporation

HALLIBURTON | Sperry Drilling

Project: Lea County, NM (NAD 83)
Site: Ironhouse
Well: Ironhouse 19 State Com 1H
Wellbore: Wellbore #1
Plan: Plan #1
Rig: H&P 223

SURFACE LOCATION

US State Plane 1983
New Mexico Eastern Zone
Elevation: GL 3951 6' + KB 25' @ 3976.60ft (H&P 223)

Northing	Easting	Latitude	Longitude
629074.70	797786.70	32° 43' 35.731 N	103° 29' 57 894 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9297.04	0.00	0.00	9297.04	0 00	0.00	0.00	0.00	0 00	KOP/Start Build
10197.04	90.00	359.49	9870.00	572.93	-5.14	10.00	359.49	572.96	End Build
14375.18	90.00	359.49	9870.00	4750.90	-42.60	0.00	0.00	4751.09	TD

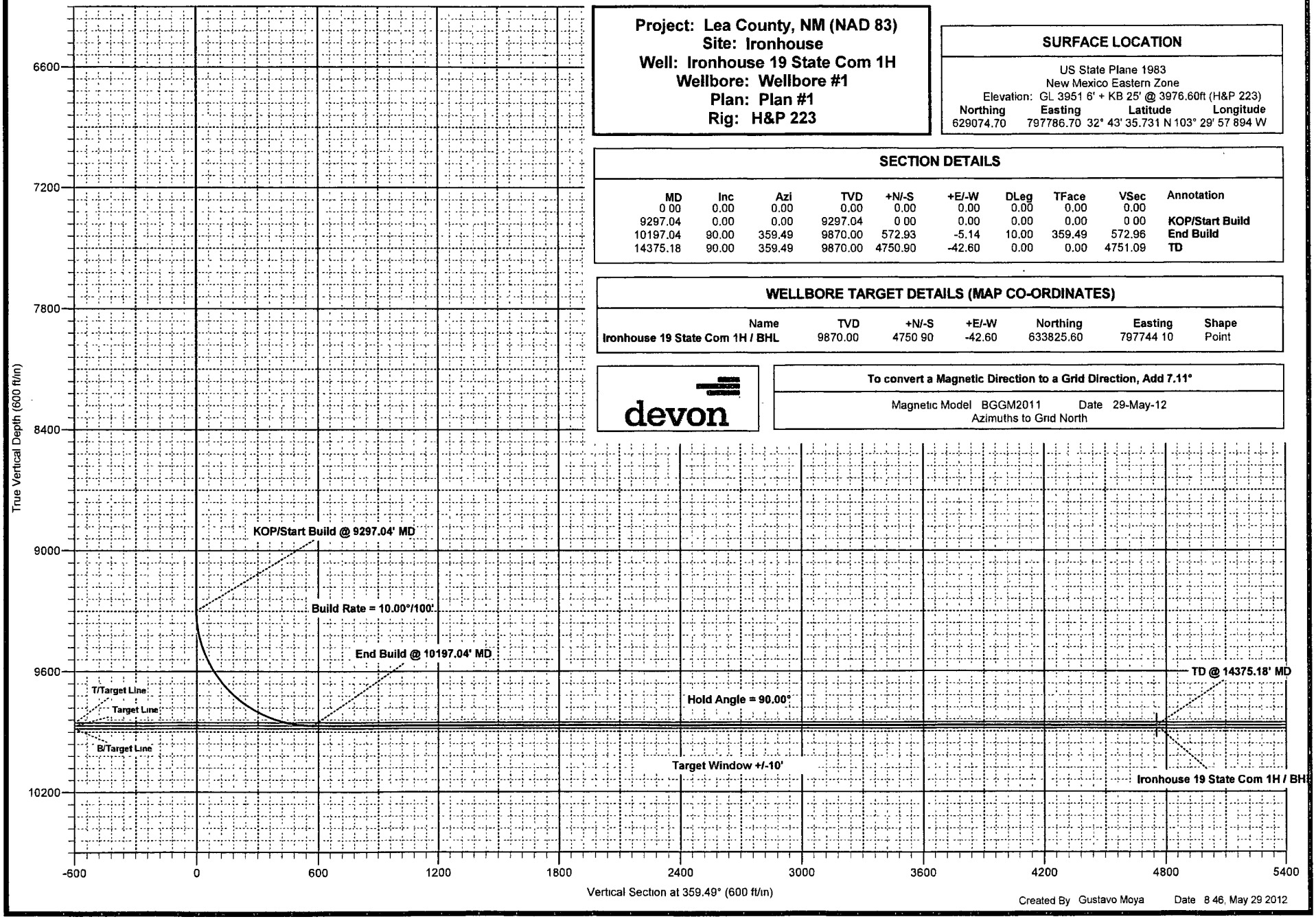
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Ironhouse 19 State Com 1H / BHL	9870.00	4750 90	-42.60	633825.60	797744 10	Point

devon

To convert a Magnetic Direction to a Grid Direction, Add 7.11°

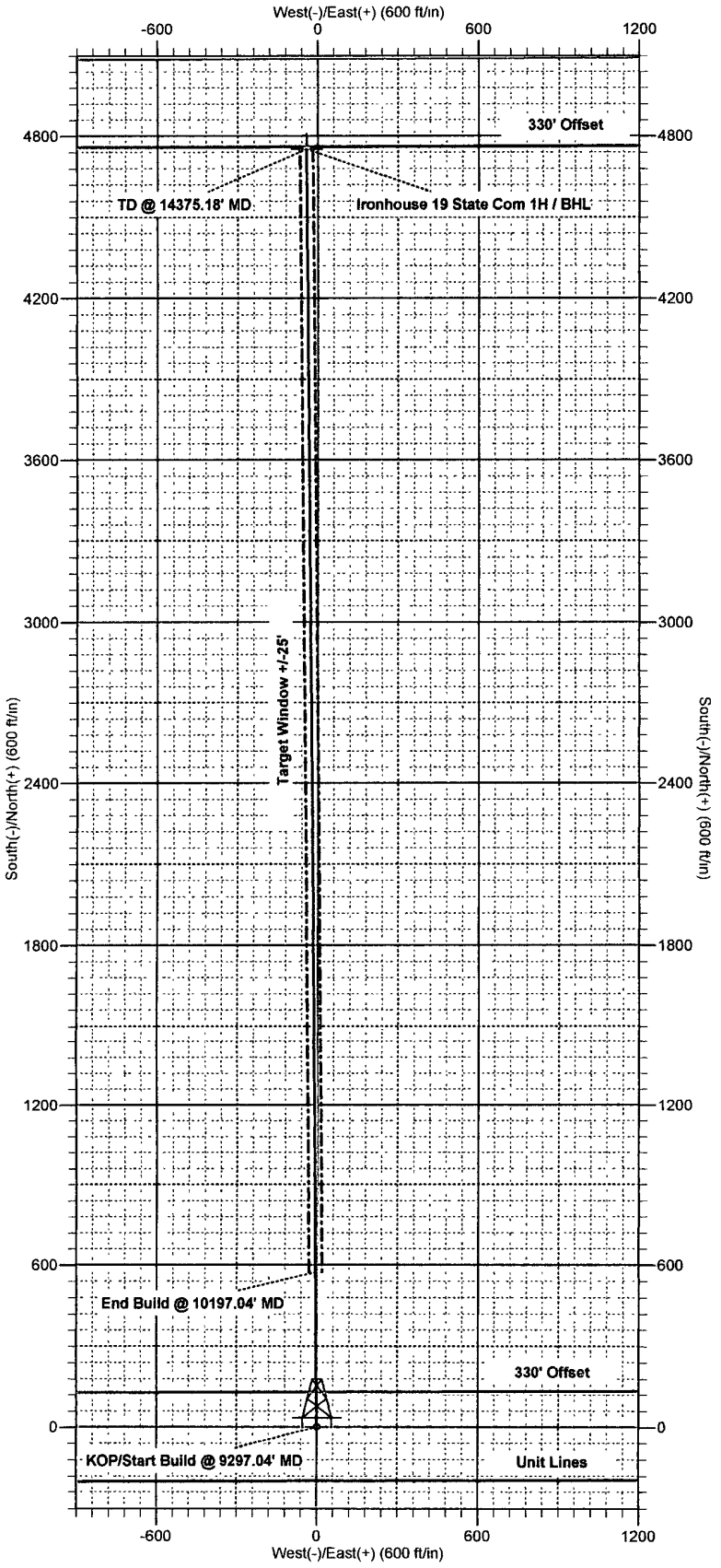
Magnetic Model BGGM2011 Date 29-May-12
Azimuths to Grid North



Created By Gustavo Moya Date 8 46, May 29 2012

Devon Energy Corporation

HALLIBURTON | Sperry Drilling



Project: Lea County, NM (NAD 83)
Site: Ironhouse
Well: Ironhouse 19 State Com 1H
Wellbore: Wellbore #1
Plan: Plan #1
Rig: H&P 223

SURFACE LOCATION

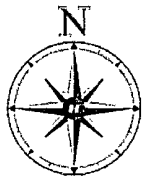
US State Plane 1983
New Mexico Eastern Zone
Elevation. GL 3951.6' + KB 25' @ 3976 60ft (H&P 223)

Northing	Easting	Latitude	Longitude
629074.70	797786.70	32° 43' 35.731 N	103° 29' 57.894 W

To convert a Magnetic Direction to a Grid Direction, Add 7.11°

Magnetic Model BGGM2011 Date 29-May-12
Azimuths to Gnd North

devon



Created By Gustavo Moya Date 8 39, May 29 2012

Devon Energy Corporation

Lea County, NM (NAD 83)
Ironhouse
Ironhouse 19 State Com 1H

Wellbore #1

Plan: Plan #1

Sperry Drilling Services

Proposal Report

29 May, 2012

Well Coordinates: 629,074 70 N, 797,786.70 E (32° 43' 35 73" N, 103° 29' 57 89" W)
Ground Level: 3,951 60 ft

Local Coordinate Origin:	Centered on Well Ironhouse 19 State Com 1H
Viewing Datum	*GL 3951 6' + KB 25' @ 3976 60ft (H&P 223)*
TVDs to System.	N
North Reference	Grid
Unit System	API - US Survey Feet

Version 2003.16 Build: 431

HALLIBURTON

Plan Report for Ironhouse 19 State Com 1H - Plan #1

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
100 00	0 00	0.00	100 00	0.00	0 00	0.00	0 00	0.00	0 00	0 00
200 00	0 00	0 00	200.00	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
400.00	0.00	0 00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00
500.00	0 00	0 00	500.00	0 00	0 00	0 00	0 00	0.00	0.00	0.00
600 00	0 00	0 00	600.00	0 00	0.00	0 00	0 00	0 00	0 00	0.00
700.00	0 00	0 00	700.00	0.00	0 00	0 00	0.00	0.00	0.00	0 00
800 00	0.00	0 00	800 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
900 00	0 00	0 00	900.00	0 00	0.00	0 00	0 00	0 00	0.00	0 00
1,000 00	0 00	0 00	1,000 00	0 00	0.00	0 00	0 00	0.00	0 00	0 00
1,100.00	0 00	0 00	1,100 00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
1,200.00	0 00	0.00	1,200.00	0 00	0.00	0.00	0.00	0 00	0 00	0 00
1,300 00	0 00	0 00	1,300 00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
1,400 00	0 00	0.00	1,400 00	0.00	0.00	0 00	0 00	0.00	0 00	0 00
1,500.00	0 00	0 00	1,500.00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,600 00	0 00	0.00	1,600.00	0.00	0.00	0 00	0 00	0 00	0.00	0 00
1,700 00	0 00	0 00	1,700 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00
1,800 00	0.00	0.00	1,800 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00
1,900 00	0 00	0 00	1,900 00	0 00	0 00	0.00	0 00	0.00	0 00	0 00
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0.00	0 00	0.00	0 00	0 00
2,100 00	0 00	0 00	2,100 00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0.00	0 00	0 00	0 00	0 00
2,300.00	0.00	0 00	2,300 00	0.00	0.00	0.00	0 00	0.00	0.00	0 00
2,400 00	0 00	0 00	2,400 00	0.00	0.00	0 00	0 00	0 00	0 00	0.00
2,500.00	0.00	0 00	2,500.00	0.00	0.00	0.00	0 00	0 00	0.00	0 00
2,600.00	0 00	0.00	2,600 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
2,700.00	0 00	0 00	2,700.00	0.00	0.00	0.00	0 00	0.00	0 00	0 00
2,800.00	0 00	0.00	2,800.00	0.00	0.00	0.00	0 00	0 00	0 00	0 00
2,900 00	0.00	0.00	2,900.00	0.00	0 00	0 00	0 00	0.00	0 00	0 00
3,000 00	0.00	0 00	3,000 00	0 00	0 00	0 00	0.00	0 00	0 00	0.00
3,100 00	0.00	0 00	3,100 00	0 00	0.00	0 00	0 00	0.00	0.00	0 00
3,200 00	0 00	0 00	3,200.00	0 00	0.00	0 00	0.00	0 00	0.00	0 00
3,300 00	0 00	0 00	3,300 00	0 00	0 00	0 00	0 00	0.00	0.00	0 00
3,400.00	0 00	0 00	3,400 00	0 00	0.00	0 00	0 00	0 00	0 00	0.00
3,500 00	0 00	0 00	3,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,600 00	0.00	0 00	3,600 00	0 00	0.00	0.00	0.00	0 00	0 00	0.00
3,700.00	0.00	0 00	3,700 00	0.00	0.00	0.00	0 00	0.00	0 00	0.00
3,800 00	0 00	0 00	3,800 00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
3,900 00	0 00	0 00	3,900 00	0 00	0.00	0 00	0 00	0 00	0 00	0 00
4,000.00	0 00	0 00	4,000 00	0 00	0.00	0 00	0 00	0.00	0 00	0 00
4,100.00	0 00	0 00	4,100.00	0.00	0 00	0.00	0 00	0 00	0 00	0 00
4,200 00	0 00	0 00	4,200 00	0 00	0 00	0 00	0.00	0 00	0 00	0.00
4,300 00	0 00	0.00	4,300.00	0.00	0.00	0 00	0 00	0 00	0 00	0 00
4,400 00	0.00	0.00	4,400.00	0 00	0 00	0 00	0 00	0.00	0 00	0 00
4,500 00	0 00	0 00	4,500 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00
4,600 00	0.00	0 00	4,600 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00
4,700 00	0.00	0 00	4,700.00	0 00	0.00	0 00	0.00	0.00	0 00	0.00
4,800.00	0.00	0.00	4,800.00	0 00	0.00	0 00	0 00	0 00	0 00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0 00	0.00	0 00	0.00	0.00
5,000.00	0 00	0 00	5,000.00	0.00	0 00	0 00	0 00	0.00	0 00	0 00
5,100.00	0 00	0.00	5,100.00	0 00	0.00	0 00	0 00	0.00	0 00	0.00
5,200 00	0 00	0 00	5,200.00	0 00	0 00	0 00	0 00	0.00	0 00	0.00
5,300.00	0.00	0 00	5,300.00	0 00	0.00	0 00	0 00	0 00	0 00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500 00	0 00	0 00	5,500.00	0.00	0 00	0 00	0 00	0 00	0.00	0.00
5,600 00	0 00	0 00	5,600.00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
5,700 00	0 00	0.00	5,700.00	0.00	0 00	0 00	0 00	0.00	0 00	0 00
5,800 00	0.00	0.00	5,800.00	0.00	0 00	0 00	0 00	0.00	0 00	0.00

Plan Report for Ironhouse 19 State Com 1H - Plan #1

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 (°)
5,900 00	0 00	0 00	5,900 00	0.00	0 00	0 00	0.00	0.00	0.00	0 00
6,000.00	0 00	0.00	6,000.00	0 00	0.00	0 00	0 00	0 00	0.00	0.00
6,100 00	0.00	0 00	6,100.00	0 00	0.00	0.00	0 00	0 00	0 00	0 00
6,200 00	0.00	0 00	6,200 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
6,300 00	0 00	0.00	6,300 00	0 00	0.00	0.00	0 00	0.00	0.00	0 00
6,400 00	0.00	0.00	6,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00
6,500 00	0 00	0 00	6,500 00	0.00	0 00	0 00	0.00	0 00	0.00	0 00
6,600.00	0.00	0.00	6,600 00	0.00	0 00	0 00	0.00	0.00	0.00	0 00
6,700 00	0 00	0.00	6,700.00	0 00	0.00	0.00	0 00	0.00	0.00	0.00
6,800.00	0 00	0 00	6,800 00	0.00	0.00	0.00	0 00	0 00	0 00	0.00
6,900.00	0.00	0.00	6,900.00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
7,000.00	0.00	0.00	7,000.00	0.00	0 00	0 00	0 00	0 00	0.00	0 00
7,100 00	0.00	0 00	7,100 00	0.00	0.00	0 00	0.00	0 00	0.00	0 00
7,200 00	0 00	0.00	7,200.00	0 00	0.00	0.00	0 00	0 00	0.00	0 00
7,300.00	0 00	0.00	7,300.00	0 00	0.00	0.00	0 00	0 00	0 00	0.00
7,400 00	0 00	0 00	7,400 00	0 00	0 00	0 00	0.00	0.00	0 00	0 00
7,500.00	0 00	0 00	7,500 00	0.00	0 00	0.00	0.00	0 00	0 00	0.00
7,600 00	0 00	0 00	7,600.00	0 00	0 00	0 00	0 00	0 00	0.00	0 00
7,700.00	0.00	0 00	7,700.00	0.00	0.00	0.00	0.00	0 00	0 00	0 00
7,800.00	0.00	0 00	7,800.00	0.00	0.00	0.00	0 00	0.00	0 00	0 00
7,900.00	0 00	0.00	7,900 00	0 00	0.00	0.00	0 00	0.00	0 00	0 00
8,000.00	0 00	0 00	8,000 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00
8,100.00	0.00	0 00	8,100 00	0 00	0 00	0 00	0.00	0 00	0.00	0 00
8,200 00	0.00	0 00	8,200 00	0.00	0 00	0 00	0 00	0 00	0.00	0.00
8,300.00	0.00	0 00	8,300.00	0.00	0 00	0.00	0 00	0.00	0 00	0 00
8,400.00	0 00	0.00	8,400.00	0 00	0.00	0.00	0 00	0 00	0.00	0 00
8,500 00	0.00	0 00	8,500 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00
8,600.00	0 00	0.00	8,600 00	0.00	0.00	0 00	0 00	0 00	0.00	0 00
8,700 00	0.00	0 00	8,700.00	0 00	0 00	0 00	0 00	0.00	0.00	0 00
8,800 00	0 00	0 00	8,800.00	0 00	0.00	0.00	0 00	0 00	0 00	0.00
8,900.00	0.00	0.00	8,900.00	0 00	0 00	0.00	0 00	0 00	0.00	0.00
9,000 00	0.00	0 00	9,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
9,100 00	0 00	0 00	9,100 00	0.00	0 00	0 00	0.00	0 00	0.00	0 00
9,200.00	0 00	0 00	9,200.00	0.00	0.00	0 00	0.00	0 00	0 00	0 00
9,297 04	0 00	0.00	9,297.04	0 00	0.00	0.00	0 00	0 00	0 00	0 00
KOP/Start Build @ 9297.04' MD - Build Rate = 10.00°/100'										
9,300 00	0.30	359 49	9,300 00	0 01	0 00	0 01	10 00	10.00	0.00	359.49
9,350.00	5.30	359 49	9,349 92	2 45	-0.02	2.45	10 00	10 00	0 00	0 00
9,400 00	10 30	359 49	9,399.45	9 23	-0 08	9.23	10.00	10.00	0.00	0 00
9,450.00	15 30	359 49	9,448.19	20 30	-0.18	20 30	10.00	10.00	0.00	0 00
9,500 00	20 30	359 49	9,495.78	35.57	-0 32	35 57	10.00	10.00	0 00	0 00
9,550 00	25 30	359.49	9,541 86	54.94	-0.49	54.94	10 00	10.00	0 00	0.00
9,600 00	30 30	359 49	9,586.08	78.24	-0 70	78 25	10.00	10 00	0 00	0 00
9,650.00	35.30	359.49	9,628 10	105 32	-0.94	105 32	10 00	10.00	0 00	0 00
9,700 00	40 30	359.49	9,667 59	135.95	-1 22	135.95	10 00	10 00	0 00	0.00
9,750.00	45.30	359 49	9,704.27	169 91	-1 52	169 91	10.00	10 00	0 00	0 00
9,800 00	50 30	359.49	9,737 85	206 93	-1.86	206 94	10 00	10 00	0.00	0 00
9,850.00	55 30	359.49	9,768 07	246 74	-2 21	246 75	10 00	10 00	0 00	0 00
9,900 00	60.30	359 49	9,794 71	289.03	-2 59	289 04	10.00	10 00	0 00	0 00
9,950 00	65 30	359.49	9,817.56	333.49	-2 99	333.50	10.00	10 00	0.00	0 00
10,000 00	70 30	359.49	9,836 45	379 76	-3.41	379 78	10 00	10 00	0.00	0 00
10,050 00	75 30	359 49	9,851 24	427 51	-3.83	427 52	10 00	10.00	0 00	0 00
10,065.65	76.86	359 49	9,855 00	442 70	-3 97	442 71	10.00	10 00	0.00	0 00
T/Target Line										
10,100 00	80 30	359.49	9,861.80	476 36	-4 27	476 38	10.00	10 00	0.00	0 00
10,150 00	85.30	359 49	9,868.07	525.95	-4 72	525 97	10 00	10 00	0.00	0 00
10,197.04	90 00	359 49	9,870 00	572 93	-5 14	572 96	10.00	10 00	0 00	0 00
End Build @ 10197.04' MD - Hold Angle = 90.00° - Target Line										
10,200 00	90 00	359.49	9,870 00	575 89	-5 16	575.92	0.00	0 00	0.00	0.00

Plan Report for Ironhouse 19 State Com 1H - Plan #1

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 (°)
10,300.00	90 00	359 49	9,870.00	675 89	-6.06	675.92	0 00	0.00	0 00	0 00
10,400 00	90 00	359 49	9,870.00	775.88	-6.96	775.92	0.00	0.00	0.00	0 00
10,500 00	90 00	359 49	9,870.00	875.88	-7 85	875 92	0.00	0.00	0 00	0 00
10,600 00	90.00	359.49	9,870.00	975.88	-8.75	975 92	0.00	0.00	0.00	0 00
10,700 00	90 00	359.49	9,870 00	1,075 87	-9.65	1,075.92	0.00	0 00	0.00	0 00
10,800.00	90 00	359.49	9,870 00	1,175.87	-10.54	1,175 92	0.00	0.00	0.00	0.00
10,900.00	90.00	359 49	9,870 00	1,275.86	-11.44	1,275 92	0.00	0 00	0 00	0.00
11,000 00	90.00	359 49	9,870.00	1,375 86	-12.34	1,375.92	0.00	0.00	0 00	0.00
11,100.00	90.00	359 49	9,870.00	1,475 86	-13.23	1,475 92	0.00	0 00	0 00	0 00
11,200 00	90.00	359.49	9,870 00	1,575 85	-14.13	1,575 92	0.00	0 00	0 00	0 00
11,300.00	90 00	359 49	9,870.00	1,675.85	-15 03	1,675 92	0 00	0.00	0.00	0 00
11,400 00	90 00	359 49	9,870 00	1,775 84	-15 92	1,775.92	0.00	0.00	0 00	0 00
11,500.00	90 00	359 49	9,870.00	1,875 84	-16 82	1,875.92	0.00	0 00	0 00	0 00
11,600 00	90.00	359 49	9,870.00	1,975 84	-17.72	1,975.92	0 00	0 00	0 00	0 00
11,700 00	90 00	359 49	9,870.00	2,075 83	-18 61	2,075.92	0 00	0 00	0 00	0 00
11,800.00	90 00	359.49	9,870 00	2,175 83	-19 51	2,175.92	0.00	0 00	0 00	0 00
11,900 00	90 00	359 49	9,870.00	2,275 82	-20 41	2,275.92	0 00	0 00	0 00	0.00
12,000 00	90.00	359 49	9,870 00	2,375.82	-21.30	2,375 92	0.00	0 00	0 00	0 00
12,100.00	90.00	359 49	9,870 00	2,475.82	-22.20	2,475 92	0.00	0 00	0 00	0 00
12,200.00	90 00	359 49	9,870 00	2,575.81	-23.10	2,575 92	0 00	0 00	0 00	0.00
12,300.00	90.00	359 49	9,870 00	2,675.81	-23.99	2,675 92	0.00	0 00	0 00	0.00
12,400.00	90.00	359.49	9,870 00	2,775.80	-24.89	2,775 92	0 00	0.00	0 00	0 00
12,500.00	90 00	359 49	9,870 00	2,875.80	-25.79	2,875 92	0.00	0.00	0 00	0 00
12,600.00	90 00	359.49	9,870 00	2,975.80	-26 68	2,975 92	0 00	0 00	0 00	0 00
12,700 00	90 00	359 49	9,870.00	3,075.79	-27.58	3,075 92	0 00	0.00	0.00	0.00
12,800 00	90 00	359 49	9,870.00	3,175 79	-28 48	3,175 92	0 00	0 00	0 00	0.00
12,900 00	90 00	359 49	9,870.00	3,275 78	-29 37	3,275.92	0.00	0 00	0 00	0 00
13,000 00	90.00	359.49	9,870.00	3,375 78	-30.27	3,375 92	0 00	0 00	0 00	0.00
13,100 00	90.00	359 49	9,870 00	3,475.78	-31 17	3,475 92	0 00	0.00	0.00	0 00
13,200.00	90.00	359 49	9,870.00	3,575.77	-32.06	3,575.92	0.00	0.00	0.00	0.00
13,300 00	90 00	359.49	9,870 00	3,675.77	-32 96	3,675.92	0 00	0 00	0 00	0 00
13,400 00	90 00	359.49	9,870 00	3,775 76	-33 86	3,775 92	0 00	0.00	0.00	0 00
13,500.00	90 00	359.49	9,870 00	3,875.76	-34.75	3,875 92	0 00	0 00	0 00	0 00
13,600 00	90 00	359.49	9,870 00	3,975 76	-35 65	3,975 92	0 00	0 00	0 00	0.00
13,700 00	90 00	359.49	9,870 00	4,075 75	-36.55	4,075 92	0 00	0 00	0 00	0.00
13,800 00	90.00	359 49	9,870.00	4,175.75	-37 44	4,175.92	0 00	0 00	0 00	0.00
13,900 00	90.00	359.49	9,870.00	4,275.74	-38 34	4,275 92	0 00	0.00	0.00	0 00
14,000 00	90.00	359.49	9,870 00	4,375 74	-39.24	4,375.92	0 00	0 00	0.00	0.00
14,100 00	90.00	359 49	9,870 00	4,475.74	-40.13	4,475.92	0 00	0 00	0 00	0.00
14,200 00	90.00	359.49	9,870 00	4,575.73	-41 03	4,575.92	0.00	0 00	0.00	0 00
14,300 00	90 00	359.49	9,870 00	4,675.73	-41 93	4,675 92	0 00	0 00	0 00	0.00
14,375 18	90 00	359 49	9,870 00	4,750 90	-42 60	4,751 09	0 00	0 00	0 00	0.00
TD @ 14375.18' MD - Ironhouse 19 State Com 1H / BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
9,297 04	9,297 04	0 00	0 00	KOP/Start Build @ 9297.04' MD
9,297 04	9,297 04	0.00	0 00	Build Rate = 10.00°/100'
10,197.04	9,870 00	572.93	-5 14	End Build @ 10197.04' MD
10,197.04	9,870 00	572.93	-5 14	Hold Angle = 90 00°
14,375 18	9,870.00	4,750.90	-42.60	TD @ 14375 18' MD

Plan Report for Ironhouse 19 State Com 1H - Plan #1

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	359.49	Slot	0 00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	14,375.18	Plan #1	MWD

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	9,885 00	B/Target Line		0.00	359.49
10,065.65	9,855.00	T/Target Line		0 00	359 49
10,197.04	9,870.00	Target Line		0.00	359.49

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Ironhouse 19 State Com 1H / BHL	9,870 00	4,750.90	-42.60	Point

North Reference Sheet for Ironhouse - Ironhouse 19 State Com 1H - Wellbore #1

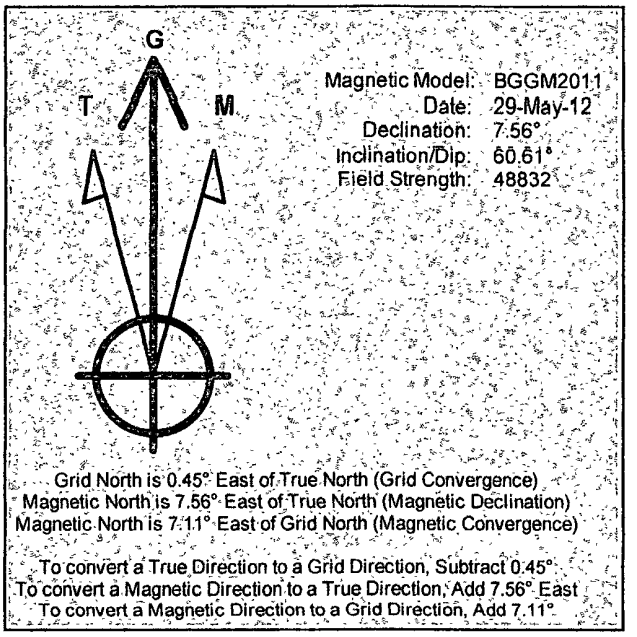
All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference
Vertical Depths are relative to GL 3951.6' + KB 25' @ 3976.60ft (H&P 223). Northing and Easting are relative to Ironhouse 19 State Com 1H
Coordinate System is US State Plane 1983, New Mexico 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 99998440

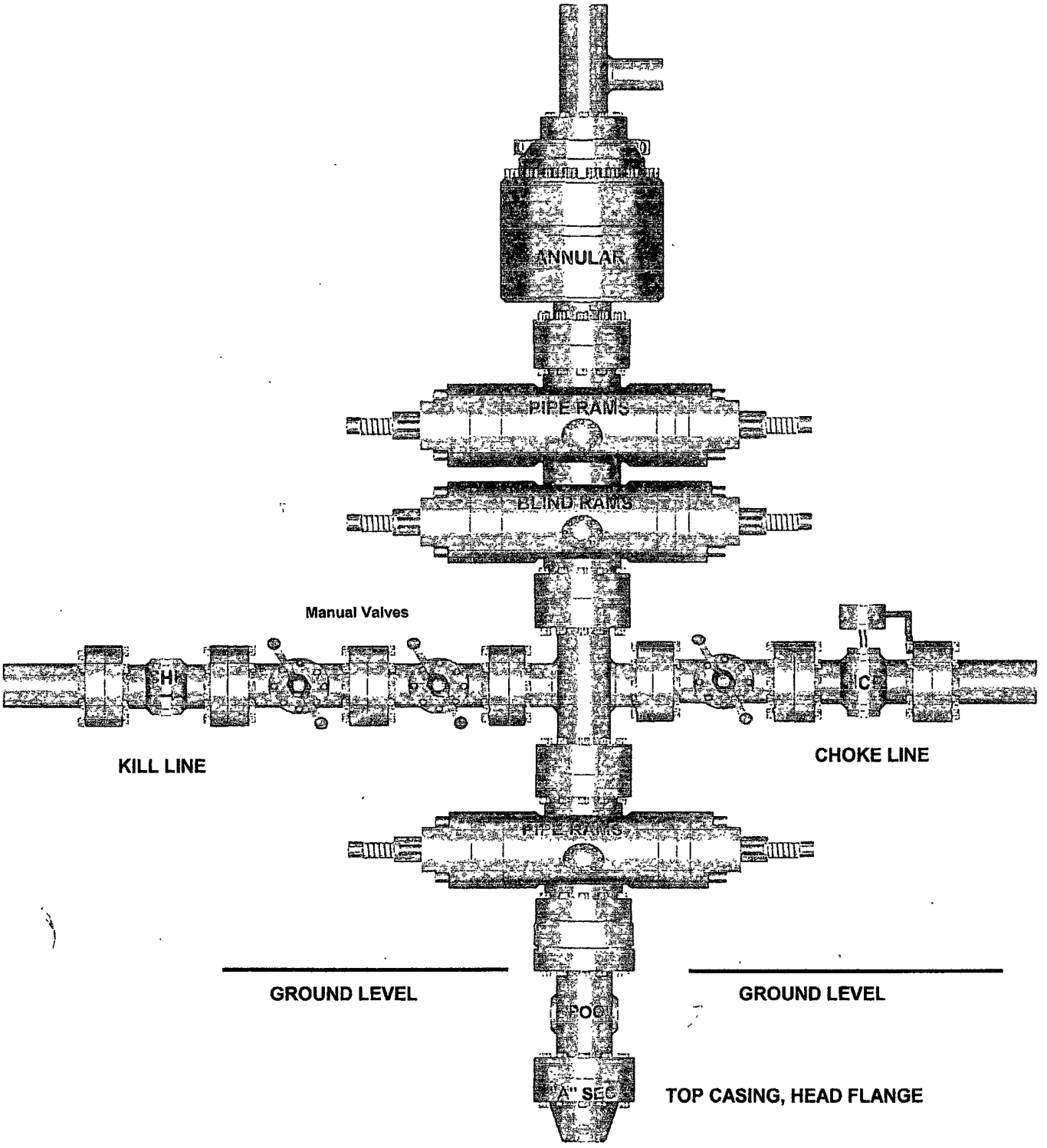
Grid Coordinates of Well 629,074.70 ft N, 797,786.70 ft E
Geographical Coordinates of Well: 32° 43' 35.73" N, 103° 29' 57 89" W
Grid Convergence at Surface is 0 45°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,375.18ft
the Bottom Hole Displacement is 4,751.09ft in the Direction of 359.49° (Grid).

Magnetic Convergence at surface is. -7.11° (29 May 2012, , BGGM2011)



13-5/8" x 3,000 psi BOP Stack



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13-5/8" 3M BOPE & Closed Loop Equipment Schematic