

District I
1625 N French Dr, Hobbs, NM 88240
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 OGD
State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised August 1, 2011

SEP 07 2012

Oil Conservation Division

1220 South St. Francis Dr.

RECEIVED

Santa Fe, NM 87505

Permit

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

¹ Operator Name and Address DEVON ENERGY PRODUCTION COMPANY, L.P. 333 W. SHERIDAN, OKLAHOMA CITY, OK. 73102		² OGRID Number 6137
³ Property Code 39267		⁴ API Number 30-025-40748
⁵ Property Name IRONHOUSE 20 STATE COM		⁶ Well No 2H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
A	20	18S	35E		500	N	200	E	LEA

⁸ Pool Information

WC-025-B-06 S183518A; UNDESIGNATED BONE SPRING	97930
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Additional Well Information

⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 3925.3'
¹⁴ Multiple No	¹⁵ Proposed Depth TVD: 9332' MD: 13763'	¹⁶ Formation Bone Spring	¹⁷ Contractor H & P	¹⁸ Spud Date
Depth to Ground water 80'		Distance from nearest fresh water well 1.5 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 1/2"	13 3/8"	54.5#	1825	1565	Surface
	12 1/4"	9 5/8"	40#	3200	860	Surface
	8 3/4"	5 1/2"	17#	8600	2485	2650'
	8 3/4"	5 1/2"	17#	13763		

Casing/Cement Program: Additional Comments

See attached Drilling Plan, Horizontal Plan & BOP	Permit Expires 2 Years From Approval Date Unless Drilling Unsuccessful
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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: 09/05/12

Phone (575) 361-4078

OIL CONSERVATION DIVISION

Approved By.

Title:

Petroleum Engineer

Approved Date:

Expiration Date:

SEP 12 2012

Conditions of Approval Attached

SEP 12 2012

HOBBS OCD

SEP 07 2012

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DISTRICT IV
1270 E. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3400 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
RECEIVED
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 30-025-40748	Pool Code 97930	Pool Name WC-025183518A UNDESIGNATED BONE SPRING
Property Code 39267	Property Name IRONHOUSE 20 STATE COM	
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, LP	
		Well Number 2H
		Elevation 3925.3'

Surface Location

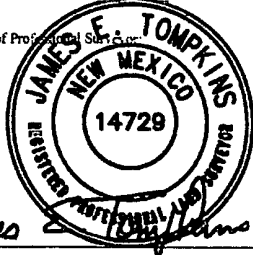
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	20	18 S	35 E		500	NORTH	200	EAST	LEA

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
D	20	18 S	35 E		400	NORTH	330	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.

330' 400' IRONHOUSE 20 STATE COM 2H BHL NMSP-E (NAD 83) Y = 633850.8 X = 804228.6 LAT. = N32° 44' 22.48" LONG. = W103° 28' 42.04" NW COR SEC 20 NMSP-E (NAD 83) Y = 634173.2' N X = 801177.9' E LAT. = N32° 44' 25.91" LONG. = W103° 29' 17.72" SW COR SEC 20 NMSP-E (NAD 83) Y = 628884.7' N X = 801228.3' E LAT. = N32° 43' 33.56" LONG. = W103° 29' 17.65"	500' IRONHOUSE 20 STATE COM 2H SHL NMSP-E (NAD 83) Y = 633687.0' N X = 806269.6' E LAT. = N32° 44' 20.69" LONG. = W103° 28' 15.16" NE COR SEC 20 NMSP-E (NAD 83) Y = 634188.7' N X = 806464.7' E LAT. = N32° 44' 25.84" LONG. = W103° 28' 15.83" SE COR SEC 20 NMSP-E (NAD 83) Y = 628897.5' N X = 806521.0' E LAT. = N32° 43' 33.29" LONG. = W103° 28' 15.67"	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. <i>Barry W. Hunt</i> 9/5/12 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:  Job No. WTC48541 JAMES E. TOMPKINS 14729 Certificate Number
---	--	---

DISTRICT I
1025 N. French Dr., Hobbs, NM 87401
Phone: (505) 396-4161 Fax: (505) 392-4720

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State of New Mexico
Energy, Minerals & Natural Resources Department
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Form C-102
Revised August 1, 2011
Submit one copy to appropriate
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name UNDESIGNATED BONE SPRING
Property Code	Property Name IRONHOUSE 20 STATE COM.	Well Number 2H
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, LP	Elevation 3925.3'

Surface Location

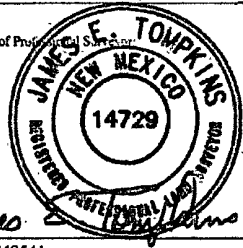
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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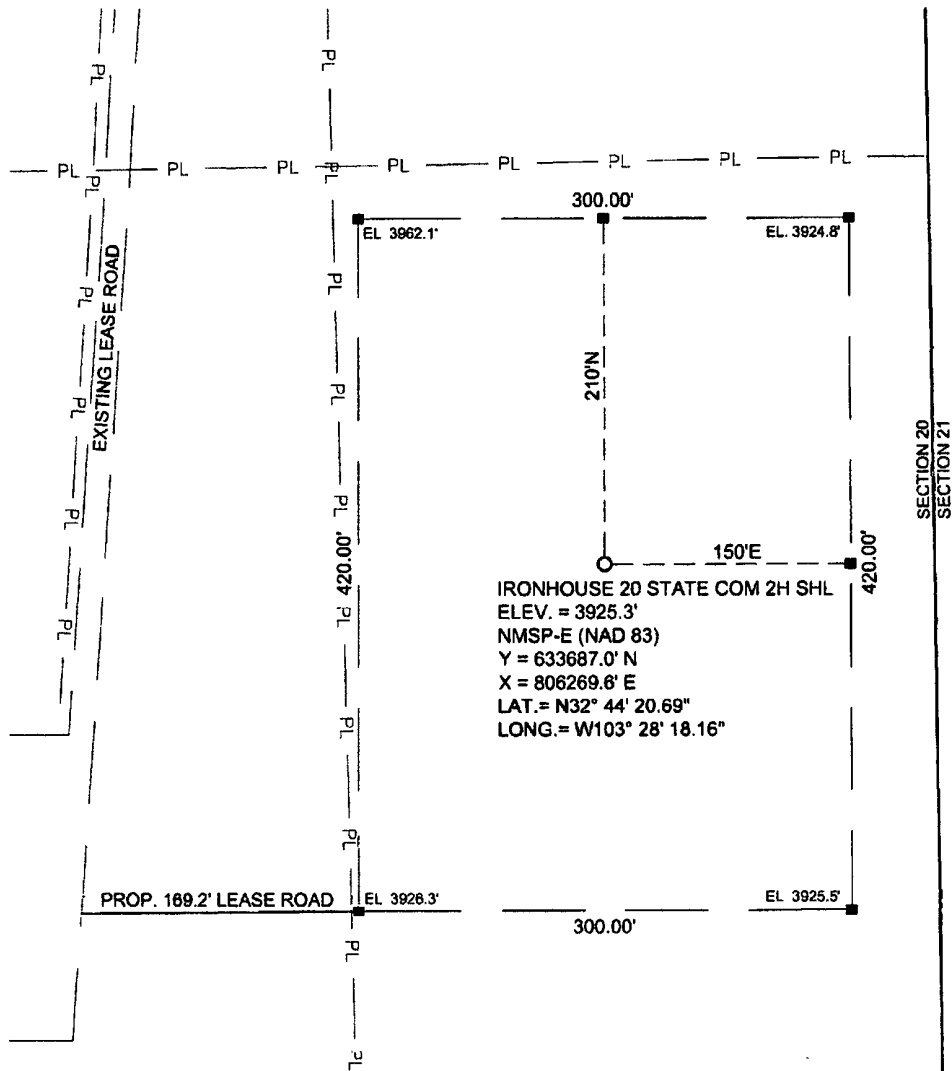
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D	20	18 S	35 E		400	NORTH	330	WEST	LEA

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.

IRONHOUSE 20 STATE 2H BHL NAD 83 Y = 633850.8 X = 804228.6 LAT = N32° 44' 22.48" LONG = W103° 28' 42.04" NW COR SEC 20 NAD 83 Y = 634173.2' N X = 801177.9' E LAT = N32° 44' 25.91" LONG = W103° 28' 17.72" VB-1381		IRONHOUSE 20 STATE 2H SHL NAD 83 Y = 633687.7' N X = 806265.9' E LAT = N32° 44' 20.69" LONG = W103° 28' 18.16" NE COR SEC 20 NAD 83 Y = 634188.7' N X = 806484.7' E LAT = N32° 44' 25.64" LONG = W103° 28' 15.83" VB-1374		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 undivided 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. Signature _____ Date _____ Print Name _____ E-mail Address _____
SW COR SEC 20 NAD 83 Y = 628884.7' N X = 801226.3' E LAT = N32° 43' 33.58" LONG = W103° 28' 17.85"		SE COR SEC 20 NAD 83 Y = 628897.5' N X = 806621.0' E LAT = N32° 43' 33.25" LONG = W103° 28' 15.67"		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 Job No. WTC48541 JAMES E. TOMPKINS 14729 Certificate Number _____

SITE LOCATION



SCALE: 1" = 100'

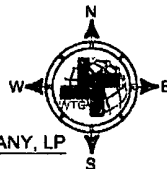
SECTION 20, T 18 S, R 35 E, N.M.P.M.

COUNTY: LEA STATE: NM

DESCRIPTION: 500' FNL & 200' FEL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 20 STATE COM-2H



DRIVING DIRECTIONS:

FROM THE JCT. OF HWY'S 529 AND 238 ABOUT 14 MILES WEST OF HOBBS, NM., GO NORTHWEST ON 238 ABOUT 4.0 MILES TO A LEASE ROAD LEFT. GO WEST ON THE LEASE ROAD 0.4 MILE TO A LEASE ROAD LEFT GO SOUTH 0.15 MI. TO THE PROPOSED LEASE ROAD LEFT AND THE LOCATION FLAG IS ± 350 FEET NORTHEAST.



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

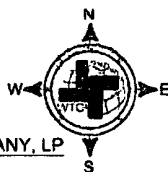
devon

JOB No.: WTC48541

Topographic map of Section 20, T 18 S, R 35 E, N.M.P.M. The map shows the Ironhouse 20 State Com-2H and a proposed 169.2' lease road. Key features include:

- Section 20, T 18 S, R 35 E, N.M.P.M.** (Section 20, Township 18 South, Range 35 East, New Mexico Public Lands)
- Ironhouse 20 State Com-2H** (Ironhouse 20 State Com-2H)
- PROP. 169.2' LEASE ROAD** (Proposed 169.2' Lease Road)
- AQUEDUCT** (Aqueduct)
- UPL** (Upper Level)
- Ironhouse** (Ironhouse)
- Spot Elevations:** 3962, 3963, 3951, 3948, 3947, 3946, 3945, 3944, 3943, 3942, 3941, 3940, 3939, 3938, 3937, 3936, 3935, 3934, 3933, 3932, 3931, 3930, 3929, 3928, 3927, 3926, 3925, 3924, 3923, 3922, 3921, 3920, 3919, 3918, 3917, 3916, 3915, 3914, 3913, 3912, 3911, 3910, 3909, 3908, 3907, 3906, 3905, 3904, 3903, 3902, 3901, 3900, 3899, 3898, 3897, 3896, 3895, 3894, 3893, 3892, 3891, 3890, 3889, 3888, 3887, 3886, 3885, 3884, 3883, 3882, 3881, 3880, 3879, 3878, 3877, 3876, 3875, 3874, 3873, 3872, 3871, 3870, 3869, 3868, 3867, 3866, 3865, 3864, 3863, 3862, 3861, 3860, 3859, 3858, 3857, 3856, 3855, 3854, 3853, 3852, 3851, 3850, 3849, 3848, 3847, 3846, 3845, 3844, 3843, 3842, 3841, 3840, 3839, 3838, 3837, 3836, 3835, 3834, 3833, 3832, 3831, 3830, 3829, 3828, 3827, 3826, 3825, 3824, 3823, 3822, 3821, 3820, 3819, 3818, 3817, 3816, 3815, 3814, 3813, 3812, 3811, 3810, 3809, 3808, 3807, 3806, 3805, 3804, 3803, 3802, 3801, 3800, 3799, 3798, 3797, 3796, 3795, 3794, 3793, 3792, 3791, 3790, 3789, 3788, 3787, 3786, 3785, 3784, 3783, 3782, 3781, 3780, 3779, 3778, 3777, 3776, 3775, 3774, 3773, 3772, 3771, 3770, 3769, 3768, 3767, 3766, 3765, 3764, 3763, 3762, 3761, 3760, 3759, 3758, 3757, 3756, 3755, 3754, 3753, 3752, 3751, 3750, 3749, 3748, 3747, 3746, 3745, 3744, 3743, 3742, 3741, 3740, 3739, 3738, 3737, 3736, 3735, 3734, 3733, 3732, 3731, 3730, 3729, 3728, 3727, 3726, 3725, 3724, 3723, 3722, 3721, 3720, 3719, 3718, 3717, 3716, 3715, 3714, 3713, 3712, 3711, 3710, 3709, 3708, 3707, 3706, 3705, 3704, 3703, 3702, 3701, 3700, 3699, 3698, 3697, 3696, 3695, 3694, 3693, 3692, 3691, 3690, 3689, 3688, 3687, 3686, 3685, 3684, 3683, 3682, 3681, 3680, 3679, 3678, 3677, 3676, 3675, 3674, 3673, 3672, 3671, 3670, 3669, 3668, 3667, 3666, 3665, 3664, 3663, 3662, 3661, 3660, 3659, 3658, 3657, 3656, 3655, 3654, 3653, 3652, 3651, 3650, 3649, 3648, 3647, 3646, 3645, 3644, 3643, 3642, 3641, 3640, 3639, 3638, 3637, 3636, 3635, 3634, 3633, 3632, 3631, 3630, 3629, 3628, 3627, 3626, 3625, 3624, 3623, 3622, 3621, 3620, 3619, 3618, 3617, 3616, 3615, 3614, 3613, 3612, 3611, 3610, 3609, 3608, 3607, 3606, 3605, 3604, 3603, 3602, 3601, 3600, 3599, 3598, 3597, 3596, 3595, 3594, 3593, 3592, 3591, 3590, 3589, 3588, 3587, 3586, 3585, 3584, 3583, 3582, 3581, 3580, 3579, 3578, 3577, 3576, 3575, 3574, 3573, 3572, 3571, 3570, 3569, 3568, 3567, 3566, 3565, 3564, 3563, 3562, 3561, 3560, 3559, 3558, 3557, 3556, 3555, 3554, 3553, 3552, 3551, 3550, 3549, 3548, 3547, 3546, 3545, 3544, 3543, 3542, 3541, 3540, 3539, 3538, 3537, 3536, 3535, 3534, 3533, 3532, 3531, 3530, 3529, 3528, 3527, 3526, 3525, 3524, 3523, 3522, 3521, 3520, 3519, 3518, 3517, 3516, 3515, 3514, 3513, 3512, 3511, 3510, 3509, 3508, 3507, 3506, 3505, 3504, 3503, 3502, 3501, 3500, 3499, 3498, 3497, 3496, 3495, 3494, 3493, 3492, 3491, 3490, 3489, 3488, 3487, 3486, 3485, 3484, 3483, 3482, 3481, 3480, 3479, 3478, 3477, 3476, 3475, 3474, 3473, 3472, 3471, 3470, 3469, 3468, 3467, 3466, 3465, 3464, 3463, 3462, 3461, 3460, 3459, 3458, 3457, 3456, 3455, 3454, 3453, 3452, 3451, 3450, 3449, 3448, 3447, 3446, 3445, 3444, 3443, 3442, 3441, 3440, 3439, 3438, 3437, 3436, 3435, 3434, 3433, 3432, 3431, 3430, 3429, 3428, 3427, 3426, 3425, 3424, 3423, 3422, 3421, 3420, 3419, 3418, 3417, 3416, 3415, 3414, 3413, 3412, 3411, 3410, 3409, 3408, 3407, 3406, 3405, 3404, 3403, 3402, 3401, 3400, 3399, 3398, 3397, 3396, 3395, 3394, 3393, 3392, 3391, 3390, 3389, 3388, 3387, 3386, 3385, 3384, 3383, 3382, 3381, 3380, 3379, 3378, 3377, 3376, 3375, 3374, 3373, 3372, 3371, 3370, 3369, 3368, 3367, 3366, 3365, 3364, 3363, 3362, 3361, 3360, 3359, 3358, 3357, 3356, 3355, 3354, 3353, 3352, 3351, 3350, 3349, 3348, 3347, 3346, 3345, 3344, 3343, 3342, 3341, 3340, 3339, 3338, 3337, 3336, 3335, 3334, 3333, 3332, 3331, 3330, 3329, 3328, 3327, 3326, 3325, 3324, 3323,

WELL NAME: IRONHOUSE 20 STATE COM-2H



FROM THE JCT. OF HWY'S 529 AND 238 ABOUT 14 MILES WEST OF HOBBS, NM., GO NORTHWEST ON 238 ABOUT 4.0 MILES TO A LEASE ROAD LEFT. GO WEST ON THE LEASE ROAD 0.4 MILE TO A LEASE ROAD LEFT. GO SOUTH 0.15 MI. TO THE PROPOSED LEASE ROAD LEFT AND THE LOCATION FLAG IS ± 350 FEET NORTHEAST.

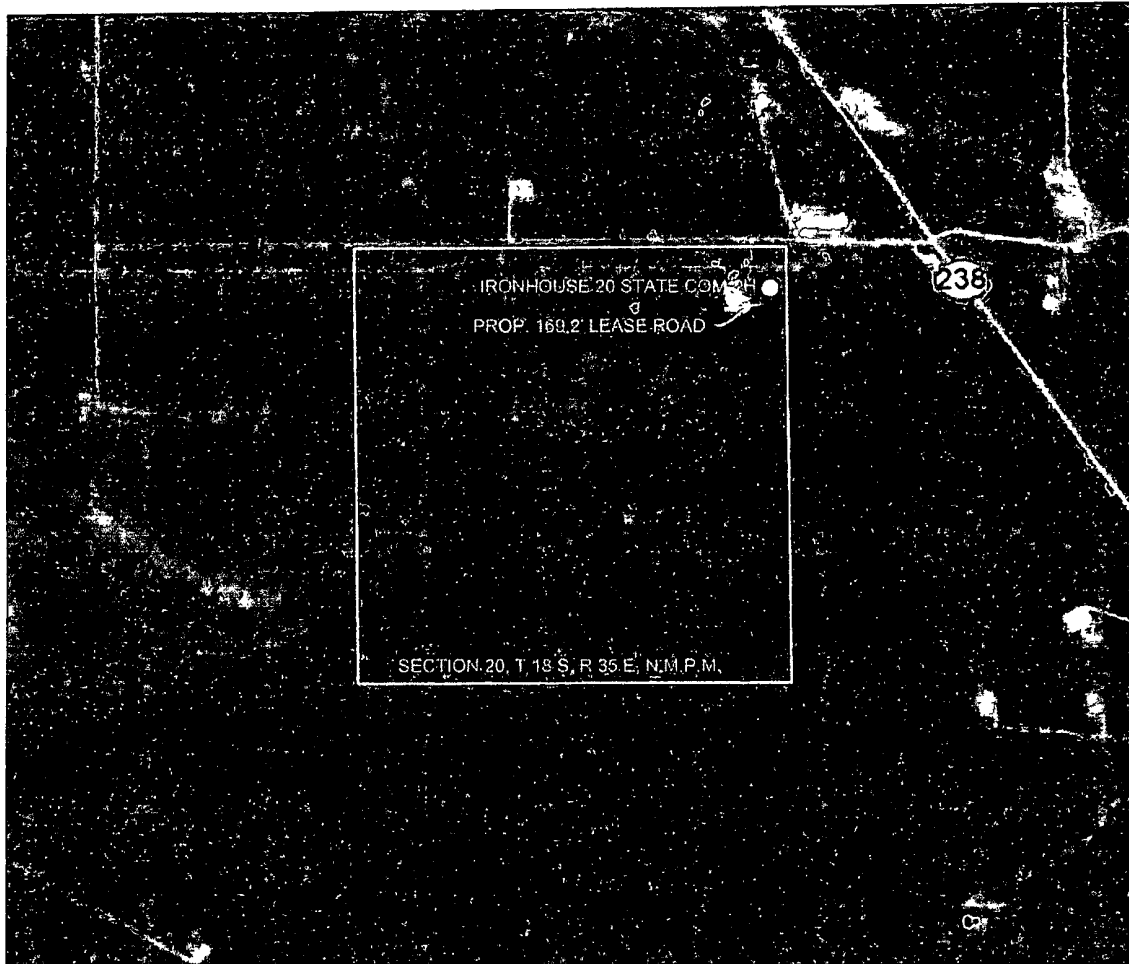


WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S.W. 1st STREET
ANDREWS, TEXAS 79714
(432) 523-2181



JOB No.: WTC48541

AERIAL MAP



SCALE: 1" = 2000'

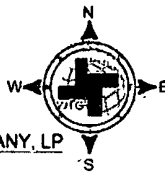
SECTION 20, T 18 S, R 35 E, N.M.P.M.

COUNTY: LEA STATE: NM

DESCRIPTION: 500' FNL & 200' FEL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 20 STATE COM-2H



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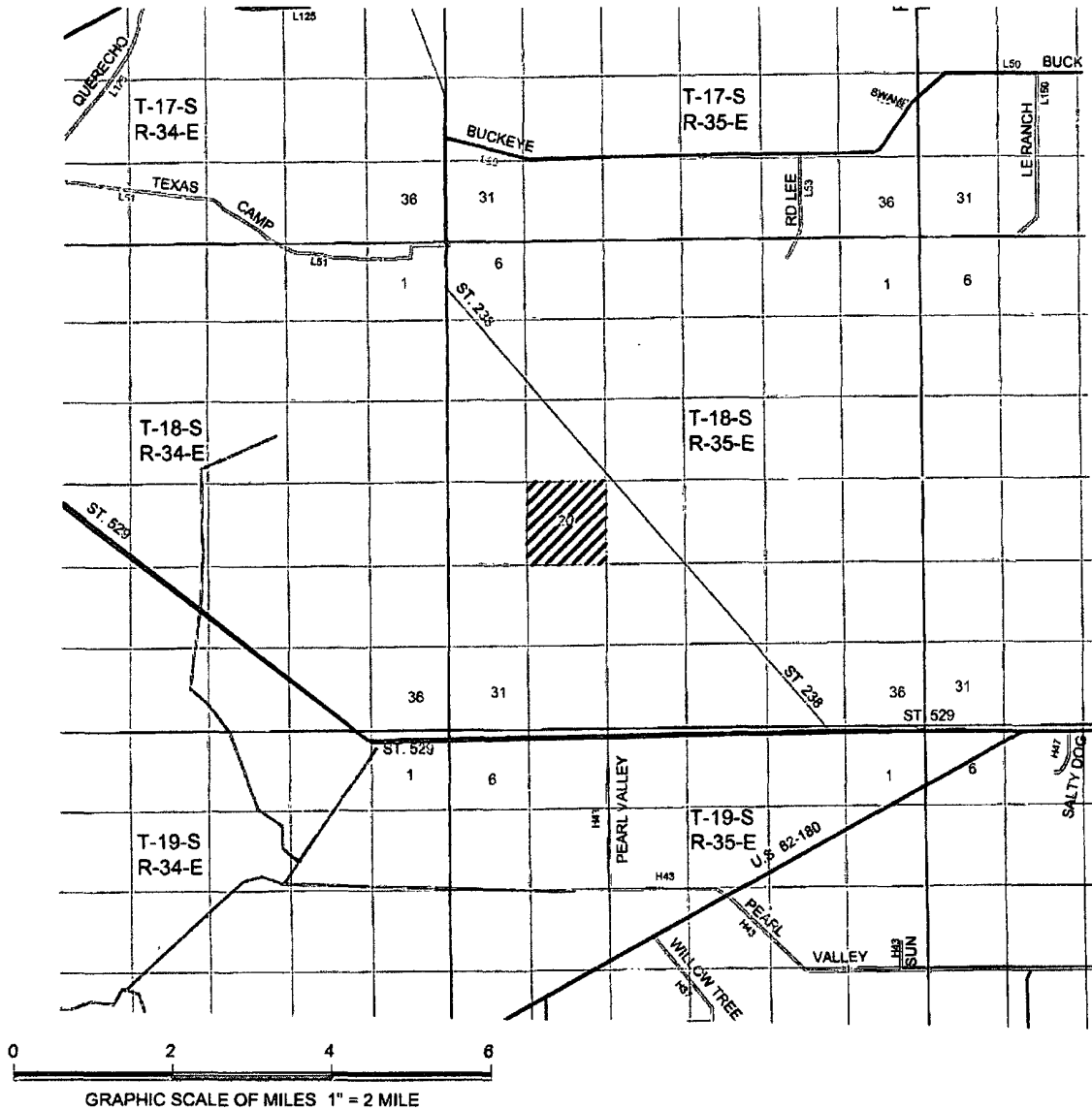
WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S.W. 1st STREET
ANDREWS, TEXAS 79714
(432) 523-2181



JOB No.: WTC48541

IRONHOUSE 20 STATE COM-2H PROP. 169.2' LEASE ROAD SECTION 20, T 18 S, R 35 E, N.M.P.M. SCALE: 1" = 2000'

VICINITY MAP



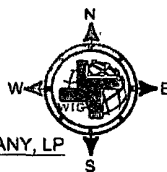
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OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP

WELL NAME: IRONHOUSE 20 STATE COM-2H



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(432) 523-2181

devon

JOB No.: WTC48541

DEVON ENERGY PRODUCTION, L. P.
DRILLING PLAN

IRONHOUSE 20 STATE COM 2H
SHL: 500 FNL & 200 FEL
BHL: 400 FNL & 330 FWL
Section 20, T. 18 S., R. 35 E.
LEA County, NM

The elevation of the unprepared ground is 3925.3' feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium.

A rotary rig will be utilized to drill the well.

Proposed total depth is: MD: 13763'. TVD: 9332'.

Estimated tops of important geologic markers:

Quaternary – Alluvium	Surface*
Rustler	1789'
Salado / Top of Salt	1960'
Base of Salt	3090'
Yates	3254'
Queen	4456'
Grayburg	4721'
Delaware	5941'
1st Bone Spring LM	6775'
1st Bone Spring Ss	8236'
2 nd Bone Spring Lime	8290'
2 nd Bone Spring SD	8698'
TVD	9332' (145 degree F)
Pilot Hole TVD	10,100'

*Water anticipated at 80 feet.

Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Yates	Oil (1399 psi)
Queen	Oil (1916 psi)
Grayburg	Oil (2030 psi)
Delaware	Oil (2555 psi)
Bone Spring	Oil (2913 psi)
TVD	Oil BHP 4013 psi

Drilling Program / Surface Use Plan
Discipline-Specific Input Form

Ironhouse 20 State 2H Drilling Plan

1. Casing and Cementing Plan Summary

The surface fresh water sands will be protected by setting 13.375" casing at 1,825' and circulating cement back to surface. The salt zones will be isolated by setting 9.625" casing at 3,200' and circulating cement to surface. The Delaware intervals will be isolated by setting 5-1/2" casing to total depth of 13,763' and circulating cement above the base of the 9-5/8" casing. All casing is new and API approved.

2. Casing Program:

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight	Collar	Grade
17.5"	0 - 1,825'	13.375"	0 - 1,825'	54.5#	STC	J-55
12.25"	1,825' - 3,200'	9.625"	0 - 3,200'	40#	LTC	J-55
8.75"	3,200' - 8,600'	5.5"	0 - 8,600'	17#	LTC	P-110HC
8.75"	8,600' - 13,763'	5.5"	8,600' - 13,763'	17#	BTC	P-110HC

3. Design Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13.375"	1.32	3.20	9.74
9.625"	2.54	2.37	4.92
5.5" LTC	2.11	2.62	1.90
5.5" BTC	1.96	2.44	6.57

Cementing Program (cement volumes based on at least 25% excess)

13-3/8" Surface **Lead:** 1160 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water, 13.5 ppg

Yield: 1.75 cf/sk

TOC @ surface

Tail: 405 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg

Yield: 1.35 cf/sk

9-5/8" Intermediate **Lead:** 580 sacks (65:35) Class C Cement:Poz (Fly Ash): + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.9 ppg

Yield: 1.85 cf/sk

TOC @ surface

Tail: 280 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg

Yield: 1.33 cf/sk

Pilot Hole **Tail:** 630 sacks Class H Cement + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 60.3% Water, 15.6 ppg

Yield: 1.19 cf/sk

TOC @ 8676 ft

Drilling Program / Surface Use Plan
Discipline-Specific Input Form

5-1/2" Production

1st Stage

Lead: 715 sacks (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.2% bwoc HR-601 + 74.1% Fresh Water, 12.5 ppg

Yield: 1.95 cf/sk

Tail: 1325 sacks (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg

Yield: 1.22 cf/sk

DV TOOL at 5000 ft

2nd Stage

Lead: 160 sacks Class C Cement + 3% bwoc Econolite + 0.125 lbs/sack Poly-E-Flake + 82.4% Fresh Water, 11.4 ppg

Yield: 2.87 cf/sk

Tail: 285 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water, 14.8 ppg

Yield: 1.33cf/sk

TOC @ 2650 ft

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	2650 ft

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

4. Pressure Control Equipment

BOP DESIGN: The BOP system used to drill the intermediate and production holes will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the prior 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.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Proposed Mud Circulation System:

Depth Range	Mud Weight	Viscosity	Fluid Loss	Type System
0 - 1,825'	8.4-9.0	28-34	NC	Fresh Water
1,825' - 3,200'	9.8-10.2	28-32	NC	Brine
3,200' - 13,763'	8.6-9.0	28-32	NC-12	Fresh Water

Drilling Program / Surface Use Plan
Discipline-Specific Input Form

The necessary mud products for weight addition and fluid loss control will be on location at all times.

6. LOGGING, CORING, AND TESTING PROGRAM:

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
- c. The open hole electrical logging program will be:
 1. Total depth to intermediate casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 2. Total Depth to Surface Compensated Neutron with Gamma Ray.
 3. No coring program is planned.
 4. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

7. Auxiliary Well Control and Monitoring Equipment:

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13.375" casing shoe until the 5.5" casing is cemented. Breathing equipment will be on location upon drilling the 13.375" shoe until total depth is reached.

8. Potential Hazards:

No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP of 4013 psi and estimated BHT 145°. No H₂S is anticipated to be encountered.

9. Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the OCD has approved the APD. Anticipated spud date will be as soon as a rig becomes available following OCD approval. Move in operations and drilling is expected to take 32 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

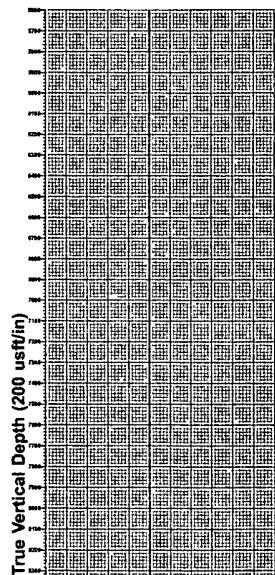
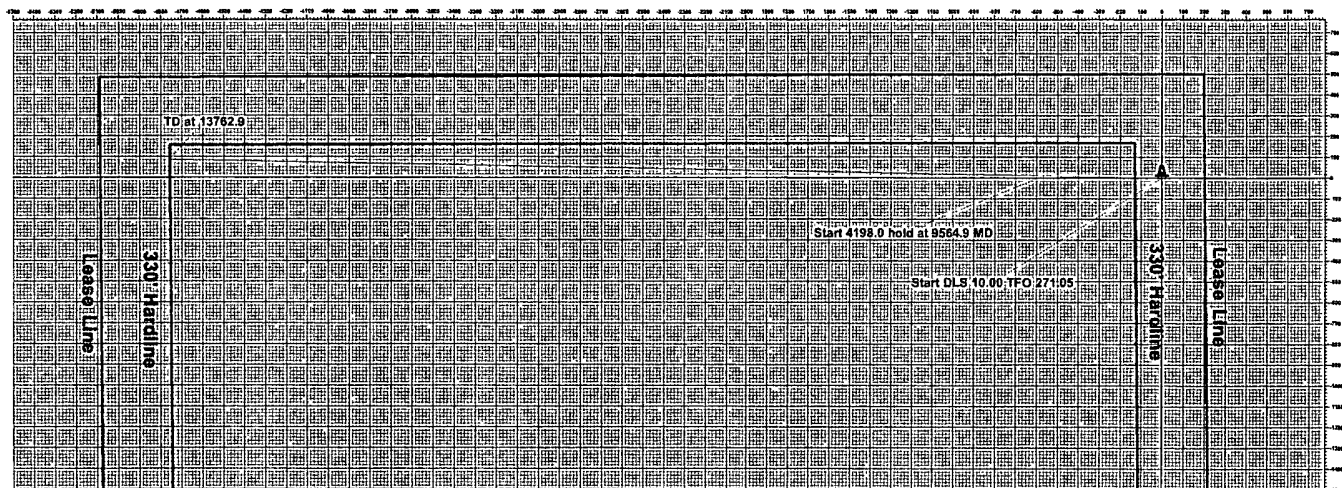


PROJECT DETAILS: Lea County (NAD83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

PATHFINDER
A Schlumberger Company

Project: Lea County (NAD83)
Site: Ironhouse 20 State
Well: #2H
Wellbore: OH
Plan: Plan #1 (#2H/OH)

West(-)/East(+) (200 usft/in)



WELL DETAILS #2H						
Ground Elevation: 3925.3						
RKB Elevation: KB = 19 @ 3944.3usft (McVay 8)						
Rig Name: McVay 8						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	633687.000	806269.600	32 739082	-103.471711	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(ironhouse 20 State #2H)	9332.0	87.0	-4758.0	633774.000	801511.600	Point

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	8876.2	0.00	0.00	8876.2	0.0	0.0	0.00	0.00	0.0	
3	9564.9	88.87	271.05	9249.0	10.3	-561.5	10.00	271.05	561.6	
4	13762.9	88.87	271.05	9332.0	87.0	-4758.0	0.00	0.00	4758.8	PBHL(ironhouse 20 State #2H)



Azimuths to Grid North
True North: -0.47°
Magnetic North: 6.97°

Magnetic Field
Strength: 48816.8snT
Dip Angle: 60.65°
Date: 8/15/2012
Model: IGRF2010

Vertical Section at 271.05° (200 usft/in)

Plan Plan #1 (#2H/OH)	
Created By: Sam Bille	Date: 14-44, August 20 2012
Checked: _____	Date: _____

Devon Energy Inc.
Wellbore Data
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Page 21



Devon Energy, Inc.

Lea County (NAD83)

Ironhouse 20 State

#2H

OH

Plan: Plan #1

PathfinderX & Y Report

20 August, 2012

PATHFINDER[®]

A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Project	Lea County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ironhouse 20 State		
Site Position:		Northing:	633,687.000 usft
From:	Map	Easting:	806,269.600 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32.739082
		Longitude:	-103.471711
		Grid Convergence:	0.47 °

Well:	#2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			usft
			Latitude:
			32.739082
			Longitude:
			-103.471711
			Ground Level:
			3,925.3 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	8/15/2012	7.43
			Dip Angle
			(°)
			60.65
			Field Strength
			(nT)
			48,817

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			271.05

Survey Tool Program	Date 8/20/2012		
From:	To:	Survey (Wellbore)	Tool Name
(usft)	(usft)		
0.0	13,762.9	Plan #1 (OH)	Pathfinder
			Description
			Pathfinder MWD



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,944.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
100.0	0.00	0.00	100.0	-3,844.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
200.0	0.00	0.00	200.0	-3,744.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
300.0	0.00	0.00	300.0	-3,644.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
400.0	0.00	0.00	400.0	-3,544.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
500.0	0.00	0.00	500.0	-3,444.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
600.0	0.00	0.00	600.0	-3,344.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
700.0	0.00	0.00	700.0	-3,244.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
800.0	0.00	0.00	800.0	-3,144.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
900.0	0.00	0.00	900.0	-3,044.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,000.0	0.00	0.00	1,000.0	-2,944.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,100.0	0.00	0.00	1,100.0	-2,844.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,200.0	0.00	0.00	1,200.0	-2,744.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,300.0	0.00	0.00	1,300.0	-2,644.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,400.0	0.00	0.00	1,400.0	-2,544.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,500.0	0.00	0.00	1,500.0	-2,444.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,600.0	0.00	0.00	1,600.0	-2,344.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,700.0	0.00	0.00	1,700.0	-2,244.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,789.0	0.00	0.00	1,789.0	-2,155.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
Rustler											
1,800.0	0.00	0.00	1,800.0	-2,144.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,900.0	0.00	0.00	1,900.0	-2,044.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1,960.0	0.00	0.00	1,960.0	-1,984.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
Salado											
2,000.0	0.00	0.00	2,000.0	-1,944.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
2,100.0	0.00	0.00	2,100.0	-1,844.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
2,200.0	0.00	0.00	2,200.0	-1,744.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60	



Pathfinder
PathfinderX & Y Report



Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
2,300.0	0.00	0.00	2,300.0	-1,644.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,400.0	0.00	0.00	2,400.0	-1,544.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,500.0	0.00	0.00	2,500.0	-1,444.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,600.0	0.00	0.00	2,600.0	-1,344.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,700.0	0.00	0.00	2,700.0	-1,244.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,800.0	0.00	0.00	2,800.0	-1,144.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
2,900.0	0.00	0.00	2,900.0	-1,044.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,000.0	0.00	0.00	3,000.0	-944.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,090.0	0.00	0.00	3,090.0	-854.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
Base Salado												
3,100.0	0.00	0.00	3,100.0	-844.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,200.0	0.00	0.00	3,200.0	-744.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,254.0	0.00	0.00	3,254.0	-690.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
Yates												
3,300.0	0.00	0.00	3,300.0	-644.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,400.0	0.00	0.00	3,400.0	-544.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,500.0	0.00	0.00	3,500.0	-444.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,600.0	0.00	0.00	3,600.0	-344.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,700.0	0.00	0.00	3,700.0	-244.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,800.0	0.00	0.00	3,800.0	-144.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
3,900.0	0.00	0.00	3,900.0	-44.3	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,000.0	0.00	0.00	4,000.0	55.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,100.0	0.00	0.00	4,100.0	155.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,200.0	0.00	0.00	4,200.0	255.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,300.0	0.00	0.00	4,300.0	355.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,400.0	0.00	0.00	4,400.0	455.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
4,456.0	0.00	0.00	4,456.0	511.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60		
Queen												



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Gnd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,500.0	0.00	0.00	4,500.0	555.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
4,600.0	0.00	0.00	4,600.0	655.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
4,700.0	0.00	0.00	4,700.0	755.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
4,800.0	0.00	0.00	4,800.0	855.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
4,900.0	0.00	0.00	4,900.0	955.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,000.0	0.00	0.00	5,000.0	1,055.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,100.0	0.00	0.00	5,100.0	1,155.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,200.0	0.00	0.00	5,200.0	1,255.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,300.0	0.00	0.00	5,300.0	1,355.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,400.0	0.00	0.00	5,400.0	1,455.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,500.0	0.00	0.00	5,500.0	1,555.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,600.0	0.00	0.00	5,600.0	1,655.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,700.0	0.00	0.00	5,700.0	1,755.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,800.0	0.00	0.00	5,800.0	1,855.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
5,900.0	0.00	0.00	5,900.0	1,955.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,000.0	0.00	0.00	6,000.0	2,055.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,100.0	0.00	0.00	6,100.0	2,155.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,200.0	0.00	0.00	6,200.0	2,255.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,300.0	0.00	0.00	6,300.0	2,355.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,400.0	0.00	0.00	6,400.0	2,455.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,500.0	0.00	0.00	6,500.0	2,555.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,600.0	0.00	0.00	6,600.0	2,655.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,700.0	0.00	0.00	6,700.0	2,755.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,775.0	0.00	0.00	6,775.0	2,830.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1st Bone Spring LM											
6,800.0	0.00	0.00	6,800.0	2,855.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
6,900.0	0.00	0.00	6,900.0	2,955.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	



Pathfinder
PathfinderX & Y Report



Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
7,000.0	0.00	0.00	7,000.0	3,055.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,100.0	0.00	0.00	7,100.0	3,155.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,200.0	0.00	0.00	7,200.0	3,255.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,300.0	0.00	0.00	7,300.0	3,355.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,400.0	0.00	0.00	7,400.0	3,455.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,500.0	0.00	0.00	7,500.0	3,555.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,600.0	0.00	0.00	7,600.0	3,655.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,700.0	0.00	0.00	7,700.0	3,755.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,800.0	0.00	0.00	7,800.0	3,855.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
7,900.0	0.00	0.00	7,900.0	3,955.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,000.0	0.00	0.00	8,000.0	4,055.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,100.0	0.00	0.00	8,100.0	4,155.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,200.0	0.00	0.00	8,200.0	4,255.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,236.0	0.00	0.00	8,236.0	4,291.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
1st Bone Spring Ss											
8,290.0	0.00	0.00	8,290.0	4,345.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
2nd Bone Spring Lime											
8,300.0	0.00	0.00	8,300.0	4,355.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,400.0	0.00	0.00	8,400.0	4,455.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,500.0	0.00	0.00	8,500.0	4,555.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,600.0	0.00	0.00	8,600.0	4,655.7	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,676.2	0.00	0.00	8,676.2	4,731.9	0.0	0.0	0.0	0.00	633,687.00	806,269.60	
8,698.0	2.18	271.05	8,698.0	4,753.7	0.0	-0.4	0.4	10.00	633,687.01	806,269.19	
2nd Bone Spring SD											
8,700.0	2.38	271.05	8,700.0	4,755.7	0.0	-0.5	0.5	10.00	633,687.01	806,269.11	
8,750.0	7.38	271.05	8,749.8	4,805.5	0.1	-4.7	4.7	10.00	633,687.09	806,264.85	
8,800.0	12.38	271.05	8,799.0	4,854.7	0.2	-13.3	13.3	10.00	633,687.24	806,256.28	



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PATHFINDER
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Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,850.0	17.38	271.05	8,847.3	4,903.0	0.5	-26.2	26.2	10.00	633,687.48	806,243.45	
8,900.0	22.38	271.05	8,894.4	4,950.1	0.8	-43.1	43.2	10.00	633,687.79	806,226.45	
8,950.0	27.38	271.05	8,939.7	4,995.4	1.2	-64.2	64.2	10.00	633,688.17	806,205.43	
9,000.0	32.38	271.05	8,983.0	5,038.7	1.6	-89.1	89.1	10.00	633,688.63	806,180.53	
9,050.0	37.38	271.05	9,024.0	5,079.7	2.2	-117.7	117.7	10.00	633,689.15	806,151.95	
9,100.0	42.38	271.05	9,062.4	5,118.1	2.7	-149.7	149.7	10.00	633,689.74	806,119.91	
9,150.0	47.38	271.05	9,097.8	5,153.5	3.4	-185.0	185.0	10.00	633,690.38	806,084.64	
9,200.0	52.38	271.05	9,130.0	5,185.7	4.1	-223.2	223.2	10.00	633,691.08	806,046.43	
9,250.0	57.38	271.05	9,158.8	5,214.5	4.8	-264.1	264.1	10.00	633,691.83	806,005.55	
9,300.0	62.38	271.05	9,183.9	5,239.6	5.6	-307.3	307.3	10.00	633,692.62	805,962.32	
9,350.0	67.38	271.05	9,205.1	5,260.8	6.4	-352.5	352.6	10.00	633,693.45	805,917.07	
9,400.0	72.38	271.05	9,222.3	5,278.0	7.3	-399.5	399.5	10.00	633,694.30	805,870.14	
9,450.0	77.38	271.05	9,235.3	5,291.0	8.2	-447.7	447.8	10.00	633,695.19	805,821.90	
9,500.0	82.38	271.05	9,244.1	5,299.8	9.1	-496.9	497.0	10.00	633,696.09	805,772.70	
9,550.0	87.38	271.05	9,248.6	5,304.3	10.0	-546.7	546.8	10.00	633,697.00	805,722.92	
9,564.9	88.87	271.05	9,249.0	5,304.7	10.3	-561.5	561.6	10.00	633,697.27	805,708.06	
9,600.0	88.87	271.05	9,249.7	5,305.4	10.9	-596.7	596.8	0.00	633,697.91	805,672.95	
9,700.0	88.87	271.05	9,251.7	5,307.4	12.7	-696.6	696.7	0.00	633,699.74	805,572.98	
9,800.0	88.87	271.05	9,253.7	5,309.4	14.6	-796.6	796.7	0.00	633,701.57	805,473.02	
9,900.0	88.87	271.05	9,255.7	5,311.4	16.4	-896.5	896.7	0.00	633,703.39	805,373.06	
10,000.0	88.87	271.05	9,257.6	5,313.3	18.2	-996.5	996.7	0.00	633,705.22	805,273.09	
10,100.0	88.87	271.05	9,259.6	5,315.3	20.0	-1,096.5	1,096.7	0.00	633,707.05	805,173.13	
10,200.0	88.87	271.05	9,261.6	5,317.3	21.9	-1,196.4	1,196.6	0.00	633,708.88	805,073.17	
10,300.0	88.87	271.05	9,263.6	5,319.3	23.7	-1,296.4	1,296.6	0.00	633,710.70	804,973.20	
10,400.0	88.87	271.05	9,265.5	5,321.2	25.5	-1,396.4	1,396.6	0.00	633,712.53	804,873.24	
10,500.0	88.87	271.05	9,267.5	5,323.2	27.4	-1,496.3	1,496.6	0.00	633,714.36	804,773.27	
10,600.0	88.87	271.05	9,269.5	5,325.2	29.2	-1,596.3	1,596.6	0.00	633,716.19	804,673.31	



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Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Well:	#2H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg. (°/100usft)	Northing (usft)	Easting (usft)	
10,700.0	88.87	271.05	9,271.5	5,327.2	31.0	-1,696.3	1,696.5	0.00	633,718.02	804,573.35	
10,800.0	88.87	271.05	9,273.5	5,329.2	32.8	-1,796.2	1,796.5	0.00	633,719.84	804,473.38	
10,900.0	88.87	271.05	9,275.4	5,331.1	34.7	-1,896.2	1,896.5	0.00	633,721.67	804,373.42	
11,000.0	88.87	271.05	9,277.4	5,333.1	36.5	-1,996.1	1,996.5	0.00	633,723.50	804,273.46	
11,100.0	88.87	271.05	9,279.4	5,335.1	38.3	-2,096.1	2,096.5	0.00	633,725.33	804,173.49	
11,200.0	88.87	271.05	9,281.4	5,337.1	40.2	-2,196.1	2,196.4	0.00	633,727.16	804,073.53	
11,300.0	88.87	271.05	9,283.3	5,339.0	42.0	-2,296.0	2,296.4	0.00	633,728.98	803,973.56	
11,400.0	88.87	271.05	9,285.3	5,341.0	43.8	-2,396.0	2,396.4	0.00	633,730.81	803,873.60	
11,500.0	88.87	271.05	9,287.3	5,343.0	45.6	-2,496.0	2,496.4	0.00	633,732.64	803,773.64	
11,600.0	88.87	271.05	9,289.3	5,345.0	47.5	-2,595.9	2,596.4	0.00	633,734.47	803,673.67	
11,700.0	88.87	271.05	9,291.2	5,346.9	49.3	-2,695.9	2,696.3	0.00	633,736.29	803,573.71	
11,800.0	88.87	271.05	9,293.2	5,348.9	51.1	-2,795.9	2,796.3	0.00	633,738.12	803,473.75	
11,900.0	88.87	271.05	9,295.2	5,350.9	53.0	-2,895.8	2,896.3	0.00	633,739.95	803,373.78	
12,000.0	88.87	271.05	9,297.2	5,352.9	54.8	-2,995.8	2,996.3	0.00	633,741.78	803,273.82	
12,100.0	88.87	271.05	9,299.1	5,354.8	56.6	-3,095.7	3,096.3	0.00	633,743.61	803,173.85	
12,200.0	88.87	271.05	9,301.1	5,356.8	58.4	-3,195.7	3,196.2	0.00	633,745.43	803,073.89	
12,300.0	88.87	271.05	9,303.1	5,358.8	60.3	-3,295.7	3,296.2	0.00	633,747.26	802,973.93	
12,400.0	88.87	271.05	9,305.1	5,360.8	62.1	-3,395.6	3,396.2	0.00	633,749.09	802,873.96	
12,500.0	88.87	271.05	9,307.0	5,362.7	63.9	-3,495.6	3,496.2	0.00	633,750.92	802,774.00	
12,600.0	88.87	271.05	9,309.0	5,364.7	65.7	-3,595.6	3,596.2	0.00	633,752.74	802,674.04	
12,700.0	88.87	271.05	9,311.0	5,366.7	67.6	-3,695.5	3,696.1	0.00	633,754.57	802,574.07	
12,800.0	88.87	271.05	9,313.0	5,368.7	69.4	-3,795.5	3,796.1	0.00	633,756.40	802,474.11	
12,900.0	88.87	271.05	9,314.9	5,370.6	71.2	-3,895.5	3,896.1	0.00	633,758.23	802,374.14	
13,000.0	88.87	271.05	9,316.9	5,372.6	73.1	-3,995.4	3,996.1	0.00	633,760.06	802,274.18	
13,100.0	88.87	271.05	9,318.9	5,374.6	74.9	-4,095.4	4,096.1	0.00	633,761.88	802,174.22	
13,200.0	88.87	271.05	9,320.9	5,376.6	76.7	-4,195.3	4,196.0	0.00	633,763.71	802,074.25	
13,300.0	88.87	271.05	9,322.9	5,378.6	78.5	-4,295.3	4,296.0	0.00	633,765.54	801,974.29	



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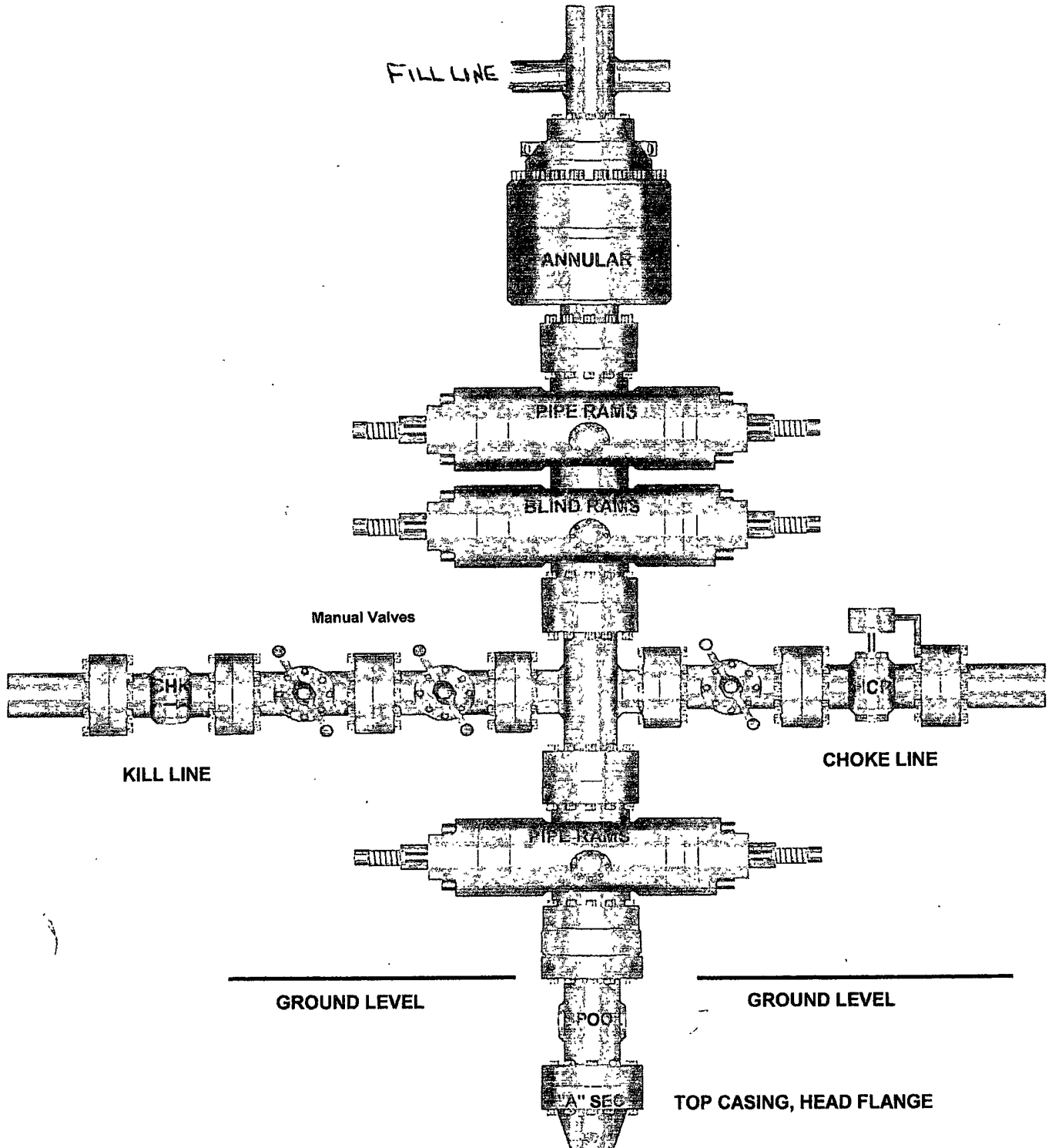
Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3944.3usft (McVay 8)
Site:	Ironhouse 20 State	MD Reference:	KB = 19 @ 3944.3usft (McVay 8)
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
13,400.0	88.87	271.05	9,324.8	5,380.5	80.4	-4,395.3	4,396.0	0.00	633,767.37	801,874.33	
13,500.0	88.87	271.05	9,326.8	5,382.5	82.2	-4,495.2	4,496.0	0.00	633,769.20	801,774.36	
13,600.0	88.87	271.05	9,328.8	5,384.5	84.0	-4,595.2	4,596.0	0.00	633,771.02	801,674.40	
13,700.0	88.87	271.05	9,330.8	5,386.5	85.9	-4,695.2	4,696.0	0.00	633,772.85	801,574.43	
13,762.9	88.87	271.05	9,332.0	5,387.7	87.0	-4,758.0	4,758.8	0.00	633,774.00	801,511.60	
PBHL(Ironhouse 20 State #2H)											

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,254.0	3,254.0	Yates				
4,456.0	4,456.0	Queen				
8,698.0	8,698.0	2nd Bone Spring SD				
1,789.0	1,789.0	Rustler				
6,775.0	6,775.0	1st Bone Spring LM				
3,090.0	3,090.0	Base Salado				
8,290.0	8,290.0	2nd Bone Spring Lime				
8,236.0	8,236.0	1st Bone Spring Ss				
1,960.0	1,960.0	Salado				

Checked By: _____	Approved By: _____	Date: _____
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13-5/8" x 3,000 psi BOP Stack



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

