

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMINM 14988
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY Contact: REBECCA DEAL E-mail: Rebecca.Deal@devn.com		6. If Indian, Allottee or Tribe Name
3a. Address 333 WEST SHERIDAN AVENUE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-228-8429	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 1 T26S R33E NWNW 200FNL 450FWL		8. Well Name and No. SEAWOLF 1-12 FED 92H
		9. API Well No. 30-025-43769
		10. Field and Pool or Exploratory Area WC-025 G-09 S253336D;U WC
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy respectfully requests an annular exception and the following changes to the original APD:

Target TVD from 12,270' to 12,624'
Production Hole Size Change from 8 3/4" to 6 3/4"
Production Casing Connect Change

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Please see attached revised Drilling Plan, Directional Plan, BOPE schematic, Production Hole Document and Annular Preventer Document.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #390977 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 11/07/2017 ()	
Name (Printed/Typed) REBECCA DEAL	Title REGULATORY COMPLIANCE PROFESSI
Signature (Electronic Submission)	Date 10/05/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By <u>Mustafa Hazer</u>	Title <u>PETROLEUM ENGINEER</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office <u>BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE</u>
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.	

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

1. Component and Preventer Compatibility Table

The table below, which covers the drilling and casing of the 10M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

6-3/4" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drillpipe	4.5"	Fixed lower 4.5" Upper 3.5-5.5" VBR	10M
HWDP	4.5"	Fixed lower 4.5" Upper 3.5-5.5" VBR	10M
Drill collars and MWD tools	4.75"	Upper 3.5-5.5" VBR	10M
Mud Motor	4.75"	Upper 3.5-5.5" VBR	10M
Production casing	5.5"	Upper 3.5-5.5" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.

2. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The pressure at which control is swapped from the annular to another compatible ram is variable, but the operator will document in the submission their operating pressure limit. The operator may chose an operating pressure less than or equal to RWP, but in no case will it exceed the RWP of the annular preventer.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

Devon Energy, Seawolf 1-12 Wells

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
 - a. SIDPP and SICP
 - b. Pit gain
 - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
 - a. SICP
 - b. Pit gain
 - c. Time
6. Regroup and identify forward plan

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General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
 - a. Perform flowcheck, if flowing:
 - b. Sound alarm (alert crew)
 - c. Stab full opening safety valve and close
 - d. Space out drill string with tool joint just beneath the upper pipe ram.
 - e. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
 - f. Confirm shut-in
 - g. Notify toolpusher/company representative
 - h. Read and record the following:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
 - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
 - a. Sound alarm (alert crew)
 - b. Stab crossover and full opening safety valve and close
 - c. Space out drill string with upset just beneath the compatible pipe ram.
 - d. Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
 - e. Confirm shut-in
 - f. Notify toolpusher/company representative
 - g. Read and record the following:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
 - h. Regroup and identify forward plan
3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
 - a. Sound alarm (alert crew)
 - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
 - c. If impossible to pick up high enough to pull the string clear of the stack:
 - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
 - e. Space out drill string with tooljoint just beneath the upper pipe ram.
 - f. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
 - g. Confirm shut-in
 - h. Notify toolpusher/company representative
 - i. Read and record the following:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
 - j. Regroup and identify forward plan

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1. Geologic Formations

TVD of target	12,624'	Pilot hole depth	N/A
MD at TD:	22,645'	Deepest expected fresh water:	746'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	976		
Top of Salt	1329		
Base of Salt	5159		
Delaware	5159		
Lower Brushy Canyon	9157		
1st BSPG Lime	9320		
1st BSPG Sand	10269		
2nd BSPG Lime	10516		
2nd BSPG Sand	10817		
3rd BSPG Lime	11278		
3rd BSPG Sand	11901		
Wolfcamp	12353		
Wolfcamp X	12379		
Wolfcamp Y	12457		
Wolfcamp 110	12533		
Wolfcamp 120	12654		
Wolfcamp 130	12749		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Seawolf 1-12 92H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	Slurry Description
5-1/2" Production	852	14.8	6.32	1.33	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake <i>H</i>

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
5-1/2" Production Casing	12,650'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
6-3/4"	13-5/8"	10M	Annular (5M)	X	50% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

Devon Energy, Seawolf 1-12 92H

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. 10,000 (10M) psi - Wellhead will be installed by wellhead representatives. - If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - Wellhead representative will install the test plug for the initial BOP test. - Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

Devon Energy, Seawolf 1-12 92H

After running the 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

13-5/8" BOP/BOPE system will have been tested to 10M rating prior to drilling out 7 5/8" casing.

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's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.

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. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
12,850'	22,645'	Oil Based Mud	9.5-12	45-65	N/C - 6

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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Devon Energy, Seawolf 1-12 92H

6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
	Resistivity
	Density
X	CBL
X	Mud log
	PEX

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7200 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

Attachments

 x Directional Plan
 Other, describe



devon

Devon Energy Corporation

Lea Co., NM
SeaWolf 1-12
Fed 92H

OH
PN2

HOBBS OCD

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Anticollision Report

14 August, 2017



NABORS



Nabors Corporate Services

Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Reference	PN2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date 8/14/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	22,645.43	PN2 (OH)	MWD+HRGM	OWSG MWD + HRGM

Summary		Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Site Name							
Offset Well - Wellbore - Design							
SeaWolf 1-12							
Fed 102H - OH - PN2		1,500.00	1,500.50	29.99	18.96	2.718	CC, ES
Fed 102H - OH - PN2		22,645.43	22,990.29	749.24	458.93	2.581	SF
Fed 81H - OH - PN1		1,500.00	1,500.00	89.97	78.94	8.156	CC, ES
Fed 81H - OH - PN1		22,645.43	22,367.83	1,312.02	1,011.06	4.359	SF
Fed 82H - OH - PN2		1,500.00	1,500.10	60.01	48.98	5.440	CC, ES
Fed 82H - OH - PN2		22,645.43	22,321.17	706.93	411.90	2.396	SF
Fed 91H - OH - PN2		1,500.00	1,500.10	119.99	108.96	10.877	CC, ES
Fed 91H - OH - PN2		22,645.43	23,263.09	1,487.70	1,206.14	5.284	SF

Offset Design		SeaWolf 1-12 - Fed 102H - OH - PN2										Offset Site Error:	0.00 ft
Survey Program:		0-MWD+HRGM										Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.00	0.00	0.50	0.50	2.00	2.00	-90.38	-0.20	-29.99	29.99				
100.00	100.00	100.50	100.50	2.00	2.00	-90.38	-0.20	-29.99	29.99	25.98	4.01	7.484	
200.00	200.00	200.50	200.50	2.06	2.06	-90.38	-0.20	-29.99	29.99	25.88	4.11	7.290	
300.00	300.00	300.50	300.50	2.17	2.17	-90.38	-0.20	-29.99	29.99	25.65	4.34	6.913	
400.00	400.00	400.50	400.50	2.33	2.33	-90.38	-0.20	-29.99	29.99	25.33	4.66	6.432	
500.00	500.00	500.50	500.50	2.53	2.53	-90.38	-0.20	-29.99	29.99	24.92	5.07	5.917	
600.00	600.00	600.50	600.50	2.77	2.77	-90.38	-0.20	-29.99	29.99	24.45	5.54	5.415	
700.00	700.00	700.50	700.50	3.03	3.03	-90.38	-0.20	-29.99	29.99	23.93	6.06	4.952	
800.00	800.00	800.50	800.50	3.31	3.31	-90.38	-0.20	-29.99	29.99	23.38	6.61	4.536	
900.00	900.00	900.50	900.50	3.60	3.60	-90.38	-0.20	-29.99	29.99	22.80	7.20	4.168	
1,000.00	1,000.00	1,000.50	1,000.50	3.90	3.90	-90.38	-0.20	-29.99	29.99	22.19	7.80	3.844	
1,100.00	1,100.00	1,100.50	1,100.50	4.21	4.21	-90.38	-0.20	-29.99	29.99	21.57	8.43	3.560	
1,200.00	1,200.00	1,200.50	1,200.50	4.53	4.53	-90.38	-0.20	-29.99	29.99	20.93	9.06	3.309	
1,300.00	1,300.00	1,300.50	1,300.50	4.85	4.86	-90.38	-0.20	-29.99	29.99	20.28	9.71	3.088	
1,400.00	1,400.00	1,400.50	1,400.50	5.18	5.19	-90.38	-0.20	-29.99	29.99	19.62	10.37	2.892	
1,500.00	1,500.00	1,500.50	1,500.50	5.52	5.52	-90.38	-0.20	-29.99	29.99	18.96	11.03	2.718	CC, ES
1,600.00	1,599.99	1,600.49	1,600.49	5.84	5.85	-173.95	-0.20	-29.99	30.86	19.16	11.70	2.638	
1,700.00	1,699.96	1,700.46	1,700.46	6.17	6.19	-174.42	-0.20	-29.99	33.46	21.10	12.36	2.707	
1,800.00	1,799.86	1,800.36	1,800.36	6.50	6.53	-175.06	-0.20	-29.99	37.81	24.78	13.03	2.902	
1,900.00	1,899.68	1,900.18	1,900.18	6.83	6.87	-175.74	-0.20	-29.99	43.89	30.19	13.70	3.204	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 102H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,000.00	1,999.37	1,999.87	1,999.87	7.17	7.22	-176.38	-0.20	-29.99	51.72	37.34	14.38	3.598	
2,100.00	2,098.90	2,100.45	2,100.45	7.51	7.56	-176.81	0.00	-29.13	60.43	45.38	15.05	4.015	
2,200.00	2,198.26	2,201.19	2,201.15	7.86	7.89	-176.95	0.61	-26.55	69.15	53.43	15.72	4.399	
2,300.00	2,297.40	2,302.09	2,301.95	8.21	8.23	-176.91	1.63	-22.24	77.88	61.49	16.39	4.752	
2,347.97	2,344.88	2,350.55	2,350.33	8.39	8.40	-176.84	2.27	-19.56	82.08	65.36	16.71	4.911	
2,400.00	2,396.34	2,403.15	2,402.82	8.57	8.58	-176.73	3.06	-16.19	86.39	69.33	17.06	5.063	
2,500.00	2,495.25	2,504.48	2,503.82	8.94	8.92	-176.41	4.91	-8.39	93.36	75.62	17.73	5.264	
2,600.00	2,594.15	2,606.01	2,604.88	9.31	9.28	-175.93	7.17	1.17	98.60	80.19	18.41	5.356	
2,700.00	2,693.06	2,706.40	2,704.66	9.68	9.63	-175.37	9.71	11.89	102.56	83.46	19.09	5.371	
2,800.00	2,791.97	2,806.32	2,803.97	10.05	9.98	-174.84	12.25	22.62	106.47	86.68	19.79	5.380	
2,900.00	2,890.87	2,906.24	2,903.28	10.43	10.33	-174.35	14.79	33.36	110.38	89.89	20.49	5.388	
3,000.00	2,989.78	3,006.16	3,002.59	10.81	10.69	-173.90	17.33	44.10	114.30	93.11	21.19	5.394	
3,100.00	3,088.69	3,106.08	3,101.90	11.19	11.05	-173.47	19.87	54.83	118.23	96.34	21.89	5.400	
3,200.00	3,187.59	3,205.99	3,201.20	11.58	11.41	-173.08	22.41	65.57	122.17	99.57	22.60	5.406	
3,300.00	3,286.50	3,305.91	3,300.51	11.96	11.77	-172.70	24.95	76.30	126.11	102.80	23.31	5.410	
3,400.00	3,385.41	3,405.83	3,399.82	12.35	12.14	-172.35	27.48	87.04	130.06	106.04	24.02	5.414	
3,500.00	3,484.31	3,505.75	3,499.13	12.74	12.50	-172.02	30.02	97.77	134.01	109.27	24.73	5.418	
3,600.00	3,583.22	3,605.67	3,598.44	13.13	12.87	-171.71	32.56	108.51	137.96	112.51	25.45	5.422	
3,700.00	3,682.13	3,705.59	3,697.75	13.52	13.24	-171.42	35.10	119.24	141.92	115.76	26.16	5.424	
3,800.00	3,781.03	3,805.51	3,797.05	13.92	13.61	-171.14	37.64	129.98	145.88	119.00	26.88	5.427	
3,900.00	3,879.94	3,905.43	3,896.36	14.31	13.98	-170.88	40.18	140.71	149.85	122.25	27.60	5.429	
4,000.00	3,978.85	4,005.35	3,995.67	14.71	14.35	-170.63	42.72	151.45	153.82	125.50	28.32	5.432	
4,100.00	4,077.75	4,105.27	4,094.98	15.10	14.72	-170.39	45.26	162.19	157.79	128.75	29.04	5.433	
4,200.00	4,176.66	4,205.18	4,194.29	15.50	15.10	-170.17	47.80	172.92	161.76	132.00	29.76	5.435	
4,300.00	4,275.57	4,305.10	4,293.59	15.90	15.47	-169.95	50.34	183.66	165.74	135.25	30.49	5.436	
4,400.00	4,374.48	4,405.02	4,392.90	16.29	15.84	-169.75	52.88	194.39	169.71	138.50	31.21	5.438	
4,500.00	4,473.38	4,504.94	4,492.21	16.69	16.22	-169.55	55.42	205.13	173.69	141.76	31.94	5.439	
4,600.00	4,572.29	4,604.86	4,591.52	17.09	16.59	-169.37	57.96	215.86	177.68	145.02	32.66	5.440	
4,700.00	4,671.20	4,704.78	4,690.83	17.49	16.97	-169.19	60.50	226.60	181.66	148.27	33.39	5.441	
4,800.00	4,770.10	4,804.70	4,790.14	17.89	17.35	-169.02	63.04	237.33	185.65	151.53	34.12	5.442	
4,900.00	4,869.01	4,904.62	4,889.44	18.29	17.72	-168.86	65.58	248.07	189.63	154.79	34.84	5.442	
5,000.00	4,967.92	5,004.54	4,988.75	18.70	18.10	-168.70	68.12	258.80	193.62	158.05	35.57	5.443	
5,100.00	5,066.82	5,104.46	5,088.06	19.10	18.48	-168.55	70.66	269.54	197.61	161.31	36.30	5.443	
5,200.00	5,165.73	5,204.38	5,187.37	19.50	18.86	-168.41	73.20	280.27	201.60	164.57	37.03	5.444	
5,300.00	5,264.64	5,304.29	5,286.68	19.90	19.24	-168.27	75.74	291.01	205.60	167.83	37.76	5.444	
5,400.00	5,363.54	5,404.21	5,385.98	20.31	19.62	-168.13	78.28	301.75	209.59	171.10	38.49	5.445	
5,500.00	5,462.45	5,504.13	5,485.29	20.71	19.99	-168.01	80.82	312.48	213.59	174.36	39.23	5.445	
5,600.00	5,561.36	5,604.05	5,584.60	21.11	20.37	-167.88	83.36	323.22	217.58	177.62	39.96	5.445	
5,700.00	5,660.26	5,703.97	5,683.91	21.52	20.75	-167.76	85.90	333.95	221.58	180.89	40.69	5.445	
5,800.00	5,759.17	5,803.89	5,783.22	21.92	21.13	-167.65	88.44	344.69	225.58	184.15	41.42	5.445	
5,900.00	5,858.08	5,903.81	5,882.53	22.33	21.52	-167.54	90.98	355.42	229.57	187.42	42.16	5.446	
6,000.00	5,956.98	6,003.73	5,981.83	22.73	21.90	-167.43	93.52	366.16	233.57	190.68	42.89	5.446	
6,100.00	6,055.89	6,103.65	6,081.14	23.14	22.28	-167.33	96.06	376.89	237.57	193.95	43.63	5.446	
6,200.00	6,154.80	6,203.57	6,180.45	23.54	22.66	-167.23	98.59	387.63	241.58	197.22	44.36	5.446	
6,300.00	6,253.70	6,303.48	6,279.76	23.95	23.04	-167.13	101.13	398.36	245.58	200.48	45.10	5.446	
6,400.00	6,352.61	6,403.40	6,379.07	24.35	23.42	-167.04	103.67	409.10	249.58	203.75	45.83	5.446	
6,500.00	6,451.52	6,503.32	6,478.37	24.76	23.80	-166.94	106.21	419.84	253.58	207.02	46.57	5.446	
6,600.00	6,550.42	6,603.24	6,577.68	25.16	24.19	-166.86	108.75	430.57	257.59	210.28	47.30	5.446	
6,700.00	6,649.33	6,703.16	6,676.99	25.57	24.57	-166.77	111.29	441.31	261.59	213.55	48.04	5.446	
6,800.00	6,748.24	6,803.08	6,776.30	25.98	24.95	-166.69	113.83	452.04	265.60	216.82	48.77	5.445	
6,900.00	6,847.15	6,903.00	6,875.61	26.38	25.33	-166.61	116.37	462.78	269.60	220.09	49.51	5.445	
7,000.00	6,946.05	7,002.92	6,974.92	26.79	25.71	-166.53	118.91	473.51	273.61	223.36	50.25	5.445	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 102H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,100.00	7,044.96	7,102.84	7,074.22	27.20	26.10	-166.45	121.45	484.25	277.61	226.63	50.98	5.445	
7,200.00	7,143.87	7,202.76	7,173.53	27.60	26.48	-166.38	123.99	494.98	281.62	229.90	51.72	5.445	
7,300.00	7,242.77	7,302.68	7,272.84	28.01	26.86	-166.31	126.53	505.72	285.63	233.17	52.46	5.445	
7,400.00	7,341.68	7,402.59	7,372.15	28.42	27.25	-166.24	129.07	516.45	289.64	236.44	53.20	5.445	
7,500.00	7,440.59	7,502.51	7,471.46	28.82	27.63	-166.17	131.61	527.19	293.64	239.71	53.94	5.444	
7,600.00	7,539.49	7,602.43	7,570.76	29.23	28.01	-166.11	134.15	537.93	297.65	242.98	54.67	5.444	
7,700.00	7,638.40	7,702.35	7,670.07	29.64	28.40	-166.04	136.69	548.66	301.66	246.25	55.41	5.444	
7,800.00	7,737.31	7,802.27	7,769.38	30.05	28.78	-165.98	139.23	559.40	305.67	249.52	56.15	5.444	
7,900.00	7,836.21	7,902.19	7,868.69	30.45	29.17	-165.92	141.77	570.13	309.68	252.79	56.89	5.444	
8,000.00	7,935.12	7,997.17	7,963.18	30.86	29.53	-165.92	144.00	579.55	314.48	256.87	57.61	5.459	
8,100.00	8,034.03	8,092.05	8,057.70	31.27	29.88	-166.01	145.86	587.44	320.84	262.52	58.32	5.502	
8,200.00	8,132.93	8,186.71	8,152.14	31.68	30.23	-166.20	147.37	593.80	328.74	269.73	59.01	5.571	
8,300.00	8,231.84	8,281.09	8,246.39	32.09	30.57	-166.47	148.51	598.62	338.18	278.50	59.68	5.666	
8,400.00	8,330.75	8,375.16	8,340.40	32.50	30.90	-166.82	149.29	601.92	349.17	288.84	60.34	5.787	
8,500.00	8,429.65	8,468.86	8,434.08	32.90	31.23	-167.22	149.71	603.71	361.71	300.73	60.98	5.932	
8,600.00	8,528.56	8,563.85	8,529.06	33.31	31.55	-167.68	149.80	604.08	375.73	314.11	61.62	6.097	
8,700.00	8,627.47	8,662.75	8,627.97	33.72	31.89	-168.14	149.80	604.08	390.16	327.83	62.33	6.260	
8,800.00	8,726.37	8,761.66	8,726.87	34.13	32.22	-168.57	149.80	604.08	404.61	341.58	63.03	6.420	
8,900.00	8,825.28	8,860.57	8,825.78	34.54	32.55	-168.97	149.80	604.08	419.08	355.35	63.73	6.576	
9,000.00	8,924.19	8,959.47	8,924.69	34.95	32.89	-169.34	149.80	604.08	433.57	369.13	64.43	6.729	
9,100.00	9,023.10	9,058.38	9,023.60	35.36	33.22	-169.69	149.80	604.08	448.07	382.93	65.14	6.879	
9,200.00	9,122.00	9,157.29	9,122.50	35.76	33.56	-170.02	149.80	604.08	462.59	396.75	65.84	7.026	
9,300.00	9,220.91	9,256.19	9,221.41	36.17	33.89	-170.32	149.80	604.08	477.13	410.57	66.55	7.169	
9,400.00	9,319.82	9,355.10	9,320.32	36.58	34.23	-170.61	149.80	604.08	491.67	424.41	67.26	7.310	
9,500.00	9,418.72	9,454.01	9,419.22	36.99	34.57	-170.88	149.80	604.08	506.23	438.26	67.97	7.448	
9,600.00	9,517.63	9,552.91	9,518.13	37.40	34.90	-171.14	149.80	604.08	520.80	452.12	68.67	7.584	
9,700.00	9,616.54	9,651.82	9,617.04	37.81	35.24	-171.38	149.80	604.08	535.38	465.99	69.38	7.716	
9,800.00	9,715.44	9,750.73	9,715.94	38.22	35.58	-171.61	149.80	604.08	549.97	479.87	70.09	7.846	
9,900.00	9,814.35	9,849.63	9,814.85	38.63	35.91	-171.83	149.80	604.08	564.56	493.76	70.80	7.973	
10,000.00	9,913.26	9,948.54	9,913.76	39.04	36.25	-172.04	149.80	604.08	579.16	507.65	71.52	8.098	
10,100.00	10,012.16	10,047.45	10,012.66	39.45	36.59	-172.24	149.80	604.08	593.77	521.55	72.23	8.221	
10,200.00	10,111.07	10,146.35	10,111.57	39.86	36.93	-172.42	149.80	604.08	608.39	535.45	72.94	8.341	
10,300.00	10,209.98	10,245.26	10,210.48	40.26	37.27	-172.60	149.80	604.08	623.01	549.36	73.65	8.459	
10,345.64	10,255.12	10,309.60	10,255.62	40.45	37.49	-172.68	149.80	604.08	629.69	555.65	74.04	8.504	
10,400.00	10,308.92	10,344.21	10,309.42	40.67	37.61	-172.78	149.80	604.08	637.39	563.03	74.36	8.571	
10,500.00	10,408.08	10,443.36	10,408.58	41.07	37.95	-172.94	149.80	604.08	650.23	575.16	75.08	8.661	
10,600.00	10,507.45	10,542.73	10,507.95	41.46	38.29	-173.07	149.80	604.08	661.36	585.57	75.79	8.727	
10,700.00	10,607.00	10,642.28	10,607.50	41.84	38.63	-173.18	149.80	604.08	670.77	594.27	76.50	8.769	
10,800.00	10,706.70	10,741.98	10,707.20	42.20	38.97	-173.27	149.80	604.08	678.45	601.25	77.20	8.788	
10,900.00	10,806.51	10,841.80	10,807.01	42.56	39.32	-173.33	149.80	604.08	684.40	606.49	77.91	8.785	
11,000.00	10,906.42	10,941.71	10,906.92	42.91	39.66	-173.38	149.80	604.08	688.62	610.01	78.61	8.760	
11,100.00	11,006.39	11,041.67	11,006.89	43.25	40.00	-173.41	149.80	604.08	691.11	611.80	79.31	8.714	
11,193.61	11,100.00	11,135.29	11,100.50	43.55	40.33	-90.02	149.80	604.08	691.87	611.92	79.95	8.653	
11,200.00	11,106.39	11,141.67	11,106.89	43.57	40.35	-90.02	149.80	604.08	691.87	611.87	80.00	8.649	
11,300.00	11,206.39	11,241.67	11,206.89	43.89	40.69	-90.02	149.80	604.08	691.87	611.19	80.68	8.575	
11,400.00	11,306.39	11,341.67	11,306.89	44.20	41.04	-90.02	149.80	604.08	691.87	610.51	81.37	8.503	
11,500.00	11,406.39	11,441.67	11,406.89	44.52	41.39	-90.02	149.80	604.08	691.87	609.82	82.05	8.432	
11,600.00	11,506.39	11,541.67	11,506.89	44.84	41.73	-90.02	149.80	604.08	691.87	609.14	82.74	8.362	
11,700.00	11,606.39	11,641.67	11,606.89	45.16	42.08	-90.02	149.80	604.08	691.87	608.45	83.42	8.294	
11,800.00	11,706.39	11,741.67	11,706.89	45.48	42.42	-90.02	149.80	604.08	691.87	607.76	84.11	8.226	
11,900.00	11,806.39	11,841.67	11,806.89	45.80	42.77	-90.02	149.80	604.08	691.87	607.08	84.79	8.159	
12,000.00	11,906.39	11,941.67	11,906.89	46.12	43.12	-90.02	149.80	604.08	691.87	606.39	85.48	8.094	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services

Anticollision Report



Company: Devon Energy Corporation
 Project: Lea Co., NM
 Reference Site: SeaWolf 1-12
 Site Error: 0.00 ft
 Reference Well: Fed 92H
 Well Error: 2.00 ft
 Reference Wellbore: OH
 Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
 TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: RyanUSA_Compass
 Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 102H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,100.00	12,006.39	12,041.67	12,006.89	46.44	43.46	-90.02	149.80	604.08	691.87	605.70	86.17	8.029	
12,145.61	12,052.00	12,087.29	12,052.50	46.58	43.62	-90.02	149.80	604.08	691.87	605.39	86.48	8.000	
12,150.00	12,056.39	12,108.33	12,056.89	46.80	43.70	89.98	149.80	604.08	691.87	605.30	86.57	7.992	
12,160.75	12,067.14	12,102.42	12,067.64	46.63	43.67	90.00	149.80	604.08	691.87	605.29	86.59	7.991	
12,200.00	12,106.30	12,141.59	12,106.80	46.75	43.81	90.20	149.80	604.08	691.88	605.02	86.85	7.966	
12,250.00	12,155.81	12,208.91	12,156.31	46.90	44.04	90.76	149.80	604.08	691.93	604.68	87.25	7.930	
12,300.00	12,204.52	12,239.81	12,205.02	47.04	44.15	91.63	149.80	604.08	692.17	604.65	87.53	7.908	
12,350.00	12,252.08	12,287.36	12,252.58	47.18	44.32	92.78	149.80	604.08	692.80	604.94	87.86	7.886	
12,400.00	12,298.11	12,333.39	12,298.61	47.31	44.48	94.13	149.80	604.08	694.08	605.90	88.18	7.871	
12,450.00	12,342.27	12,377.55	12,342.77	47.43	44.63	95.61	149.80	604.08	696.34	607.83	88.51	7.868	
12,500.00	12,384.22	12,419.50	12,384.72	47.54	44.78	97.11	149.80	604.08	699.94	611.11	88.83	7.880	
12,550.00	12,423.64	12,458.92	12,424.14	47.64	44.91	98.55	149.80	604.08	705.24	616.10	89.14	7.912	
12,600.00	12,460.23	12,498.35	12,463.56	47.73	45.05	99.98	149.72	604.08	712.61	623.14	89.47	7.965	
12,650.00	12,493.72	12,551.61	12,516.70	47.81	45.22	102.04	146.37	604.08	721.78	631.88	89.90	8.028	
12,700.00	12,523.84	12,610.78	12,575.08	47.88	45.40	104.19	136.87	604.08	732.39	642.09	90.29	8.111	
12,750.00	12,550.37	12,677.78	12,639.59	47.94	45.60	106.51	118.93	604.08	744.14	653.58	90.56	8.217	
12,800.00	12,573.11	12,755.21	12,710.94	48.00	45.81	109.03	88.99	604.08	756.64	666.03	90.61	8.351	
12,850.00	12,591.89	12,846.51	12,788.94	48.06	46.03	111.79	41.75	604.08	769.27	678.97	90.30	8.519	
12,900.00	12,606.55	12,955.69	12,870.94	48.11	46.24	114.68	-30.10	604.08	781.17	691.61	89.56	8.723	
12,950.00	12,617.00	13,086.20	12,948.93	48.18	46.43	117.42	-134.39	604.08	791.16	702.66	88.50	8.940	
13,000.00	12,623.14	13,237.82	13,007.23	48.24	46.62	119.45	-273.87	604.08	797.83	710.17	87.67	9.101	
13,042.39	12,624.95	13,377.40	13,026.90	48.30	46.86	120.13	-411.71	604.08	799.95	712.16	87.79	9.112	
13,100.00	12,625.27	13,445.54	13,026.67	48.40	47.00	120.09	-479.85	604.08	799.63	711.48	88.15	9.071	
13,200.00	12,625.84	13,545.53	13,026.05	48.60	47.25	120.01	-579.84	604.08	799.04	710.31	88.73	9.005	
13,300.00	12,626.40	13,645.52	13,025.42	48.85	47.53	119.94	-679.83	604.08	798.45	709.06	89.38	8.933	
13,400.00	12,626.96	13,745.52	13,024.80	49.14	47.86	119.87	-779.82	604.08	797.85	707.75	90.11	8.855	
13,500.00	12,627.52	13,845.51	13,024.17	49.47	48.23	119.79	-879.81	604.08	797.26	706.36	90.90	8.771	
13,600.00	12,628.09	13,945.50	13,023.55	49.85	48.64	119.72	-979.80	604.08	796.67	704.91	91.76	8.682	
13,700.00	12,628.65	14,045.49	13,022.92	50.27	49.08	119.64	-1,079.79	604.08	796.08	703.39	92.69	8.589	
13,800.00	12,629.21	14,145.49	13,022.30	50.73	49.56	119.57	-1,179.79	604.08	795.50	701.81	93.68	8.491	
13,900.00	12,629.78	14,245.48	13,021.67	51.22	50.08	119.50	-1,279.78	604.08	794.91	700.17	94.74	8.391	
14,000.00	12,630.34	14,345.47	13,021.05	51.76	50.64	119.42	-1,379.77	604.08	794.33	698.47	95.86	8.287	
14,100.00	12,630.90	14,445.47	13,020.42	52.33	51.22	119.35	-1,479.76	604.08	793.74	696.71	97.03	8.180	
14,200.00	12,631.46	14,545.46	13,019.80	52.93	51.84	119.27	-1,579.75	604.08	793.16	694.90	98.26	8.072	
14,300.00	12,632.03	14,645.45	13,019.17	53.57	52.49	119.20	-1,679.74	604.08	792.58	693.03	99.55	7.961	
14,400.00	12,632.59	14,745.44	13,018.55	54.24	53.17	119.12	-1,779.73	604.08	792.00	691.11	100.89	7.850	
14,500.00	12,633.15	14,845.44	13,017.92	54.93	53.88	119.05	-1,879.72	604.08	791.43	689.14	102.29	7.737	
14,600.00	12,633.72	14,945.43	13,017.30	55.66	54.62	118.97	-1,979.71	604.08	790.85	687.12	103.73	7.624	
14,700.00	12,634.28	15,045.42	13,016.67	56.42	55.39	118.90	-2,079.70	604.08	790.28	685.06	105.22	7.511	
14,800.00	12,634.84	15,145.42	13,016.05	57.20	56.18	118.82	-2,179.70	604.08	789.70	682.95	106.75	7.397	
14,900.00	12,635.40	15,245.41	13,015.42	58.00	57.00	118.75	-2,279.69	604.08	789.13	680.80	108.33	7.284	
15,000.00	12,635.97	15,345.40	13,014.80	58.83	57.84	118.67	-2,379.68	604.08	788.56	678.60	109.96	7.172	
15,100.00	12,636.53	15,445.40	13,014.17	59.69	58.70	118.59	-2,479.67	604.08	787.99	676.37	111.62	7.060	
15,200.00	12,637.09	15,545.39	13,013.55	60.56	59.59	118.52	-2,579.66	604.08	787.42	674.10	113.32	6.949	
15,300.00	12,637.66	15,645.38	13,012.92	61.46	60.50	118.44	-2,679.65	604.08	786.86	671.80	115.06	6.839	
15,400.00	12,638.22	15,745.37	13,012.30	62.38	61.42	118.37	-2,779.64	604.08	786.29	669.48	116.83	6.730	
15,500.00	12,638.78	15,845.37	13,011.67	63.32	62.37	118.29	-2,879.63	604.08	785.73	667.08	118.64	6.623	
15,600.00	12,639.34	15,945.36	13,011.05	64.27	63.33	118.21	-2,979.62	604.08	785.17	664.68	120.49	6.517	
15,700.00	12,639.91	16,045.35	13,010.42	65.24	64.31	118.14	-3,079.61	604.08	784.60	662.24	122.36	6.412	
15,800.00	12,640.47	16,145.35	13,009.80	66.23	65.31	118.06	-3,179.61	604.08	784.04	659.78	124.27	6.309	
15,900.00	12,641.03	16,245.34	13,009.17	67.24	66.33	117.98	-3,279.60	604.08	783.49	657.29	126.20	6.208	
16,000.00	12,641.60	16,345.33	13,008.55	68.26	67.36	117.91	-3,379.59	604.08	782.93	654.77	128.16	6.109	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services

Anticollision Report



Company: Devon Energy Corporation
 Project: Lea Co., NM
 Reference Site: SeaWolf 1-12
 Site Error: 0.00 ft
 Reference Well: Fed 92H
 Well Error: 2.00 ft
 Reference Wellbore: OH
 Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
 TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: RyanUSA_Compass
 Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 102H - OH - PN2												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM												Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
16,100.00	12,642.16	16,445.32	13,007.92	69.29	68.40	117.83	-3,479.58	604.08	782.37	652.22	130.15	6.011	
16,200.00	12,642.72	16,545.32	13,007.30	70.34	69.46	117.75	-3,579.57	604.08	781.82	649.66	132.17	5.915	
16,300.00	12,643.28	16,645.31	13,006.67	71.41	70.53	117.68	-3,679.56	604.08	781.27	647.06	134.20	5.821	
16,400.00	12,643.85	16,745.30	13,006.05	72.48	71.61	117.60	-3,779.55	604.08	780.72	644.45	136.27	5.729	
16,500.00	12,644.41	16,845.30	13,005.42	73.57	72.71	117.52	-3,879.54	604.08	780.17	641.81	138.35	5.639	
16,600.00	12,644.97	16,945.29	13,004.80	74.67	73.82	117.44	-3,979.53	604.08	779.62	639.16	140.46	5.550	
16,700.00	12,645.54	17,045.28	13,004.17	75.78	74.94	117.37	-4,079.52	604.08	779.07	636.48	142.59	5.464	
16,800.00	12,646.10	17,145.28	13,003.55	76.90	76.07	117.29	-4,179.51	604.08	778.53	633.79	144.74	5.379	
16,900.00	12,646.66	17,245.27	13,002.92	78.03	77.20	117.21	-4,279.51	604.08	777.98	631.07	146.91	5.296	
17,000.00	12,647.22	17,345.26	13,002.30	79.18	78.35	117.13	-4,379.50	604.08	777.44	628.34	149.10	5.214	
17,100.00	12,647.79	17,445.25	13,001.67	80.33	79.51	117.06	-4,479.49	604.08	776.90	625.59	151.31	5.135	
17,200.00	12,648.35	17,545.25	13,001.05	81.49	80.68	116.98	-4,579.48	604.08	776.36	622.83	153.53	5.057	
17,300.00	12,648.91	17,645.24	13,000.42	82.66	81.85	116.90	-4,679.47	604.08	775.82	620.05	155.77	4.981	
17,400.00	12,649.48	17,745.23	12,999.80	83.83	83.04	116.82	-4,779.46	604.08	775.29	617.26	158.03	4.906	
17,500.00	12,650.04	17,845.23	12,999.17	85.02	84.23	116.74	-4,879.45	604.08	774.75	614.45	160.30	4.833	
17,600.00	12,650.60	17,945.22	12,998.55	86.21	85.43	116.66	-4,979.44	604.08	774.22	611.63	162.59	4.762	
17,700.00	12,651.16	18,045.21	12,997.92	87.41	86.63	116.59	-5,079.43	604.08	773.68	608.79	164.89	4.692	
17,800.00	12,651.73	18,145.20	12,997.30	88.62	87.85	116.51	-5,179.42	604.08	773.15	605.95	167.21	4.624	
17,900.00	12,652.29	18,245.20	12,996.67	89.83	89.07	116.43	-5,279.42	604.08	772.62	603.09	169.54	4.557	
18,000.00	12,652.85	18,345.19	12,996.05	91.05	90.29	116.35	-5,379.41	604.08	772.10	600.21	171.88	4.492	
18,100.00	12,653.42	18,445.18	12,995.42	92.28	91.52	116.27	-5,479.40	604.08	771.57	597.33	174.24	4.428	
18,200.00	12,653.98	18,545.18	12,994.80	93.51	92.76	116.19	-5,579.39	604.08	771.04	594.44	176.61	4.366	
18,300.00	12,654.54	18,645.17	12,994.17	94.75	94.00	116.11	-5,679.38	604.08	770.52	591.53	178.99	4.305	
18,400.00	12,655.10	18,745.16	12,993.55	95.99	95.25	116.03	-5,779.37	604.08	770.00	588.62	181.38	4.245	
18,500.00	12,655.67	18,845.16	12,992.92	97.24	96.51	115.95	-5,879.36	604.08	769.48	585.70	183.78	4.187	
18,600.00	12,656.23	18,945.15	12,992.30	98.49	97.76	115.87	-5,979.35	604.08	768.96	582.76	186.20	4.130	
18,700.00	12,656.79	19,045.14	12,991.67	99.75	99.03	115.79	-6,079.34	604.08	768.44	579.82	188.62	4.074	
18,800.00	12,657.36	19,145.13	12,991.05	101.01	100.29	115.71	-6,179.33	604.08	767.92	576.87	191.06	4.019	
18,900.00	12,657.92	19,245.13	12,990.42	102.28	101.57	115.63	-6,279.33	604.08	767.41	573.91	193.50	3.966	
19,000.00	12,658.48	19,345.12	12,989.80	103.55	102.84	115.55	-6,379.32	604.08	766.90	570.94	195.95	3.914	
19,100.00	12,659.04	19,445.11	12,989.17	104.83	104.12	115.47	-6,479.31	604.08	766.39	567.97	198.42	3.862	
19,200.00	12,659.61	19,545.11	12,988.55	106.11	105.41	115.39	-6,579.30	604.08	765.88	564.98	200.89	3.812	
19,300.00	12,660.17	19,645.10	12,987.92	107.39	106.70	115.31	-6,679.29	604.08	765.37	561.99	203.37	3.763	
19,400.00	12,660.73	19,745.09	12,987.30	108.68	107.99	115.23	-6,779.28	604.08	764.86	559.00	205.86	3.715	
19,500.00	12,661.30	19,845.09	12,986.67	109.97	109.28	115.15	-6,879.27	604.08	764.35	555.99	208.36	3.668	
19,600.00	12,661.86	19,945.08	12,986.05	111.26	110.58	115.07	-6,979.26	604.08	763.85	552.98	210.87	3.622	
19,700.00	12,662.42	20,045.07	12,985.42	112.56	111.89	114.99	-7,079.25	604.08	763.35	549.96	213.39	3.577	
19,800.00	12,662.98	20,145.06	12,984.80	113.86	113.19	114.91	-7,179.24	604.08	762.85	546.94	215.91	3.533	
19,900.00	12,663.55	20,245.06	12,984.17	115.17	114.50	114.83	-7,279.24	604.08	762.35	543.91	218.44	3.490	
20,000.00	12,664.11	20,345.05	12,983.55	116.48	115.81	114.75	-7,379.23	604.08	761.85	540.87	220.98	3.448	
20,100.00	12,664.67	20,445.04	12,982.92	117.79	117.13	114.67	-7,479.22	604.08	761.35	537.83	223.52	3.406	
20,200.00	12,665.24	20,545.04	12,982.30	119.10	118.44	114.59	-7,579.21	604.08	760.86	534.78	226.07	3.366	
20,300.00	12,665.80	20,645.03	12,981.67	120.42	119.76	114.50	-7,679.20	604.08	760.36	531.73	228.63	3.326	
20,400.00	12,666.36	20,745.02	12,981.05	121.73	121.08	114.42	-7,779.19	604.08	759.87	528.67	231.20	3.287	
20,500.00	12,666.92	20,845.01	12,980.42	123.06	122.41	114.34	-7,879.18	604.08	759.38	525.61	233.77	3.248	
20,600.00	12,667.49	20,945.01	12,979.80	124.38	123.74	114.26	-7,979.17	604.08	758.89	522.54	236.35	3.211	
20,700.00	12,668.05	21,045.00	12,979.17	125.71	125.07	114.18	-8,079.16	604.08	758.40	519.47	238.93	3.174	
20,800.00	12,668.61	21,144.99	12,978.55	127.04	126.40	114.10	-8,179.15	604.08	757.92	516.39	241.53	3.138	
20,900.00	12,669.18	21,244.99	12,977.92	128.37	127.73	114.01	-8,279.15	604.08	757.43	513.31	244.12	3.103	
21,000.00	12,669.74	21,344.98	12,977.30	129.70	129.07	113.93	-8,379.14	604.08	756.95	510.23	246.73	3.068	
21,100.00	12,670.30	21,444.97	12,976.67	131.03	130.41	113.85	-8,479.13	604.08	756.47	507.14	249.34	3.034	
21,200.00	12,670.86	21,544.97	12,976.05	132.37	131.75	113.77	-8,579.12	604.08	755.99	504.04	251.95	3.001	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 102H - OH - PN2												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM												Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
21,300.00	12,671.43	21,644.96	12,975.42	133.71	133.09	113.68	-8,679.11	604.08	755.51	500.94	254.57	2.968	
21,400.00	12,671.99	21,744.95	12,974.80	135.05	134.43	113.60	-8,779.10	604.08	755.04	497.84	257.20	2.936	
21,500.00	12,672.55	21,844.94	12,974.17	136.40	135.78	113.52	-8,879.09	604.08	754.56	494.74	259.83	2.904	
21,600.00	12,673.12	21,944.94	12,973.55	137.74	137.13	113.44	-8,979.08	604.08	754.09	491.63	262.46	2.873	
21,700.00	12,673.68	22,044.93	12,972.92	139.09	138.48	113.35	-9,079.07	604.08	753.62	488.51	265.10	2.843	
21,800.00	12,674.24	22,144.92	12,972.30	140.44	139.83	113.27	-9,179.06	604.08	753.15	485.40	267.75	2.813	
21,900.00	12,674.80	22,244.92	12,971.67	141.79	141.18	113.19	-9,279.06	604.08	752.68	482.28	270.40	2.784	
22,000.00	12,675.37	22,344.91	12,971.05	143.14	142.54	113.10	-9,379.05	604.08	752.21	479.15	273.06	2.755	
22,100.00	12,675.93	22,444.90	12,970.42	144.49	143.89	113.02	-9,479.04	604.08	751.75	476.03	275.72	2.727	
22,200.00	12,676.49	22,544.89	12,969.80	145.85	145.25	112.94	-9,579.03	604.08	751.28	472.90	278.38	2.699	
22,300.00	12,677.06	22,644.89	12,969.17	147.20	146.61	112.85	-9,679.02	604.08	750.82	469.77	281.05	2.671	
22,400.00	12,677.62	22,744.88	12,968.55	148.56	147.97	112.77	-9,779.01	604.08	750.36	466.63	283.73	2.645	
22,500.00	12,678.18	22,844.87	12,967.92	149.92	149.33	112.69	-9,879.00	604.08	749.90	463.49	286.41	2.618	
22,600.00	12,678.74	22,944.87	12,967.30	151.28	150.69	112.60	-9,978.99	604.08	749.44	460.35	289.09	2.592	
22,645.43	12,679.00	22,990.29	12,967.02	151.90	151.31	112.56	-10,024.42	604.08	749.24	458.93	290.31	2.581 SF	



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 81H - OH - PN1											Offset Site Error: 0.00 ft		
Survey Program: 0-MWD+HRGM											Offset Well Error: 2.00 ft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
0.00	0.00	0.00	0.00	2.00	2.00	-90.44	-0.69	-89.97	89.97				
100.00	100.00	100.00	100.00	2.00	2.00	-90.44	-0.69	-89.97	89.97	85.97	4.01	22.452	
200.00	200.00	200.00	200.00	2.06	2.06	-90.44	-0.69	-89.97	89.97	85.86	4.11	21.871	
300.00	300.00	300.00	300.00	2.17	2.17	-90.44	-0.69	-89.97	89.97	85.64	4.34	20.743	
400.00	400.00	400.00	400.00	2.33	2.33	-90.44	-0.69	-89.97	89.97	85.31	4.66	19.299	
500.00	500.00	500.00	500.00	2.53	2.53	-90.44	-0.69	-89.97	89.97	84.91	5.07	17.754	
600.00	600.00	600.00	600.00	2.77	2.77	-90.44	-0.69	-89.97	89.97	84.44	5.54	16.250	
700.00	700.00	700.00	700.00	3.03	3.03	-90.44	-0.69	-89.97	89.97	83.92	6.05	14.860	
800.00	800.00	800.00	800.00	3.31	3.31	-90.44	-0.69	-89.97	89.97	83.36	6.61	13.612	
900.00	900.00	900.00	900.00	3.60	3.60	-90.44	-0.69	-89.97	89.97	82.78	7.19	12.507	
1,000.00	1,000.00	1,000.00	1,000.00	3.90	3.90	-90.44	-0.69	-89.97	89.97	82.17	7.80	11.535	
1,100.00	1,100.00	1,100.00	1,100.00	4.21	4.21	-90.44	-0.69	-89.97	89.97	81.55	8.42	10.681	
1,200.00	1,200.00	1,200.00	1,200.00	4.53	4.53	-90.44	-0.69	-89.97	89.97	80.91	9.06	9.930	
1,300.00	1,300.00	1,300.00	1,300.00	4.85	4.85	-90.44	-0.69	-89.97	89.97	80.26	9.71	9.267	
1,400.00	1,400.00	1,400.00	1,400.00	5.18	5.18	-90.44	-0.69	-89.97	89.97	79.61	10.37	8.679	
1,500.00	1,500.00	1,500.00	1,500.00	5.52	5.52	-90.44	-0.69	-89.97	89.97	78.94	11.03	8.156 CC, ES	
1,600.00	1,599.99	1,600.01	1,599.99	5.84	5.85	-173.90	-0.69	-89.97	90.84	79.15	11.70	7.767	
1,700.00	1,699.96	1,700.04	1,699.96	6.17	6.19	-174.06	-0.69	-89.97	93.44	81.09	12.36	7.561	
1,800.00	1,799.86	1,800.14	1,799.86	6.50	6.53	-174.32	-0.69	-89.97	97.78	84.76	13.03	7.506	
1,900.00	1,899.68	1,900.32	1,899.68	6.83	6.87	-174.65	-0.69	-89.97	103.86	90.16	13.70	7.581	
2,000.00	1,999.37	2,000.63	1,999.37	7.17	7.22	-175.02	-0.69	-89.97	111.67	97.30	14.38	7.767	
2,100.00	2,098.90	2,101.10	2,098.90	7.51	7.56	-175.40	-0.69	-89.97	121.23	106.16	15.06	8.049	
2,200.00	2,198.26	2,201.74	2,198.26	7.86	7.91	-175.79	-0.69	-89.97	132.51	116.76	15.75	8.415	
2,300.00	2,297.40	2,302.60	2,297.40	8.21	8.26	-176.16	-0.69	-89.97	145.53	129.10	16.44	8.854	
2,347.97	2,344.88	2,344.88	2,344.88	8.39	8.41	-176.33	-0.69	-89.97	152.39	135.65	16.75	9.099	
2,400.00	2,396.34	2,403.66	2,396.34	8.57	8.62	-176.50	-0.69	-89.97	160.05	142.92	17.13	9.343	
2,500.00	2,495.25	2,495.25	2,495.25	8.94	8.93	-176.80	-0.69	-89.97	174.77	156.98	17.79	9.822	
2,600.00	2,594.15	2,597.36	2,597.35	9.31	9.28	-177.07	-0.69	-89.14	188.70	170.21	18.49	10.207	
2,700.00	2,693.06	2,700.10	2,700.06	9.68	9.63	-177.34	-0.69	-86.48	200.86	181.69	19.17	10.475	
2,800.00	2,791.97	2,800.89	2,800.76	10.05	9.97	-177.61	-0.69	-82.41	211.60	191.74	19.86	10.654	
2,900.00	2,890.87	2,900.32	2,900.11	10.43	10.30	-177.84	-0.69	-78.26	222.21	201.66	20.55	10.815	
3,000.00	2,989.78	3,000.25	2,999.45	10.81	10.64	-178.06	-0.69	-74.12	232.82	211.58	21.24	10.963	
3,100.00	3,088.69	3,100.82	3,098.80	11.19	10.99	-178.26	-0.69	-69.97	243.44	221.51	21.93	11.099	
3,200.00	3,187.59	3,201.39	3,198.14	11.58	11.33	-178.44	-0.69	-65.83	254.06	231.43	22.63	11.226	
3,300.00	3,286.50	3,301.96	3,297.49	11.96	11.68	-178.61	-0.69	-61.68	264.68	241.35	23.33	11.344	
3,400.00	3,385.41	3,402.53	3,396.83	12.35	12.02	-178.76	-0.69	-57.54	275.30	251.27	24.03	11.455	
3,500.00	3,484.31	3,503.09	3,496.18	12.74	12.37	-178.90	-0.69	-53.39	285.93	261.19	24.74	11.559	
3,600.00	3,583.22	3,603.66	3,595.52	13.13	12.72	-179.03	-0.69	-49.25	296.56	271.11	25.44	11.656	
3,700.00	3,682.13	3,704.23	3,694.87	13.52	13.07	-179.16	-0.69	-45.10	307.19	281.04	26.15	11.747	
3,800.00	3,781.03	3,804.80	3,794.21	13.92	13.42	-179.27	-0.69	-40.96	317.82	290.96	26.86	11.833	
3,900.00	3,879.94	3,905.37	3,893.56	14.31	13.77	-179.38	-0.69	-36.82	328.45	300.88	27.57	11.913	
4,000.00	3,978.85	4,005.94	3,992.90	14.71	14.13	-179.48	-0.69	-32.67	339.08	310.80	28.28	11.990	
4,100.00	4,077.75	4,106.51	4,092.25	15.10	14.48	-179.57	-0.69	-28.53	349.72	320.72	28.99	12.062	
4,200.00	4,176.66	4,192.93	4,191.59	15.50	14.78	-179.66	-0.69	-24.38	360.35	330.69	29.66	12.150	
4,300.00	4,275.57	4,291.58	4,290.17	15.90	15.13	-179.74	-0.69	-20.28	371.00	340.63	30.36	12.218	
4,400.00	4,374.48	4,384.81	4,383.35	16.29	15.46	-179.80	-0.69	-17.35	382.65	351.60	31.05	12.325	
4,500.00	4,473.38	4,477.66	4,476.18	16.69	15.78	-179.83	-0.69	-15.94	395.89	364.17	31.72	12.481	
4,600.00	4,572.29	4,573.77	4,572.29	17.09	16.12	-179.84	-0.69	-15.79	410.48	378.07	32.41	12.665	
4,700.00	4,671.20	4,672.67	4,671.20	17.49	16.47	-179.85	-0.69	-15.79	425.23	392.11	33.12	12.839	
4,800.00	4,770.10	4,771.58	4,770.10	17.89	16.81	-179.85	-0.69	-15.79	439.98	406.14	33.83	13.005	
4,900.00	4,869.01	4,870.49	4,869.01	18.29	17.16	-179.86	-0.69	-15.79	454.72	420.18	34.54	13.163	
5,000.00	4,967.92	4,969.39	4,967.92	18.70	17.51	-179.86	-0.69	-15.79	469.47	434.21	35.26	13.316	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 81H - OH - PN1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
5,100.00	5,066.82	5,066.30	5,066.82	19.10	17.86	-179.86	-0.69	-15.79	484.21	448.24	35.97	13.462	
5,200.00	5,165.73	5,167.21	5,165.73	19.50	18.21	-179.87	-0.69	-15.79	498.96	462.28	36.68	13.602	
5,300.00	5,264.64	5,266.11	5,264.64	19.90	18.56	-179.87	-0.69	-15.79	513.71	476.31	37.40	13.736	
5,400.00	5,363.54	5,365.02	5,363.54	20.31	18.91	-179.88	-0.69	-15.79	528.45	490.34	38.11	13.866	
5,500.00	5,462.45	5,463.93	5,462.45	20.71	19.26	-179.88	-0.69	-15.79	543.20	504.37	38.83	13.990	
5,600.00	5,561.36	5,562.83	5,561.36	21.11	19.61	-179.88	-0.69	-15.79	557.94	518.40	39.54	14.110	
5,700.00	5,660.26	5,661.74	5,660.26	21.52	19.96	-179.89	-0.69	-15.79	572.69	532.43	40.26	14.225	
5,800.00	5,759.17	5,760.65	5,759.17	21.92	20.31	-179.89	-0.69	-15.79	587.44	546.46	40.97	14.337	
5,900.00	5,858.08	5,859.55	5,858.08	22.33	20.66	-179.89	-0.69	-15.79	602.18	560.49	41.69	14.444	
6,000.00	5,956.98	5,958.46	5,956.98	22.73	21.01	-179.89	-0.69	-15.79	616.93	574.52	42.41	14.548	
6,100.00	6,055.89	6,057.37	6,055.89	23.14	21.36	-179.90	-0.69	-15.79	631.67	588.55	43.12	14.648	
6,200.00	6,154.80	6,156.28	6,154.80	23.54	21.71	-179.90	-0.69	-15.79	646.42	602.58	43.84	14.744	
6,300.00	6,253.70	6,255.18	6,253.70	23.95	22.06	-179.90	-0.69	-15.79	661.17	616.61	44.56	14.838	
6,400.00	6,352.61	6,354.09	6,352.61	24.35	22.41	-179.90	-0.69	-15.79	675.91	630.63	45.28	14.928	
6,500.00	6,451.52	6,453.00	6,451.52	24.76	22.77	-179.91	-0.69	-15.79	690.66	644.66	45.99	15.016	
6,600.00	6,550.42	6,551.90	6,550.42	25.16	23.12	-179.91	-0.69	-15.79	705.40	658.69	46.71	15.101	
6,700.00	6,649.33	6,650.81	6,649.33	25.57	23.47	-179.91	-0.69	-15.79	720.15	672.72	47.43	15.183	
6,800.00	6,748.24	6,749.72	6,748.24	25.98	23.82	-179.91	-0.69	-15.79	734.90	686.74	48.15	15.262	
6,900.00	6,847.15	6,848.62	6,847.15	26.38	24.17	-179.91	-0.69	-15.79	749.64	700.77	48.87	15.340	
7,000.00	6,946.05	6,947.53	6,946.05	26.79	24.52	-179.91	-0.69	-15.79	764.39	714.80	49.59	15.415	
7,100.00	7,044.96	7,046.44	7,044.96	27.20	24.87	-179.92	-0.69	-15.79	779.13	728.83	50.31	15.487	
7,200.00	7,143.87	7,145.34	7,143.87	27.60	25.23	-179.92	-0.69	-15.79	793.88	742.85	51.03	15.558	
7,300.00	7,242.77	7,244.25	7,242.77	28.01	25.58	-179.92	-0.69	-15.79	808.63	756.88	51.75	15.626	
7,400.00	7,341.68	7,343.16	7,341.68	28.42	25.93	-179.92	-0.69	-15.79	823.37	770.90	52.47	15.693	
7,500.00	7,440.59	7,442.06	7,440.59	28.82	26.28	-179.92	-0.69	-15.79	838.12	784.93	53.19	15.758	
7,600.00	7,539.49	7,540.97	7,539.49	29.23	26.63	-179.92	-0.69	-15.79	852.86	798.96	53.91	15.821	
7,700.00	7,638.40	7,639.88	7,638.40	29.64	26.99	-179.92	-0.69	-15.79	867.61	812.98	54.63	15.882	
7,800.00	7,737.31	7,738.78	7,737.31	30.05	27.34	-179.93	-0.69	-15.79	882.36	827.01	55.35	15.942	
7,900.00	7,836.21	7,837.69	7,836.21	30.45	27.69	-179.93	-0.69	-15.79	897.10	841.03	56.07	16.000	
8,000.00	7,935.12	7,936.60	7,935.12	30.86	28.04	-179.93	-0.69	-15.79	911.85	855.06	56.79	16.056	
8,100.00	8,034.03	8,035.50	8,034.03	31.27	28.40	-179.93	-0.69	-15.79	926.59	869.08	57.51	16.111	
8,200.00	8,132.93	8,134.41	8,132.93	31.68	28.75	-179.93	-0.69	-15.79	941.34	883.11	58.23	16.165	
8,300.00	8,231.84	8,233.32	8,231.84	32.09	29.10	-179.93	-0.69	-15.79	956.08	897.13	58.95	16.217	
8,400.00	8,330.75	8,332.23	8,330.75	32.50	29.45	-179.93	-0.69	-15.79	970.83	911.16	59.68	16.268	
8,500.00	8,429.65	8,431.13	8,429.65	32.90	29.81	-179.93	-0.69	-15.79	985.58	925.18	60.40	16.318	
8,600.00	8,528.56	8,530.04	8,528.56	33.31	30.16	-179.93	-0.69	-15.79	1,000.32	939.20	61.12	16.367	
8,700.00	8,627.47	8,628.95	8,627.47	33.72	30.51	-179.94	-0.69	-15.79	1,015.07	953.23	61.84	16.414	
8,800.00	8,726.37	8,727.85	8,726.37	34.13	30.86	-179.94	-0.69	-15.79	1,029.81	967.25	62.56	16.460	
8,900.00	8,825.28	8,826.76	8,825.28	34.54	31.22	-179.94	-0.69	-15.79	1,044.56	981.28	63.29	16.506	
9,000.00	8,924.19	8,925.67	8,924.19	34.95	31.57	-179.94	-0.69	-15.79	1,059.31	995.30	64.01	16.550	
9,100.00	9,023.10	9,024.57	9,023.10	35.36	31.92	-179.94	-0.69	-15.79	1,074.05	1,009.32	64.73	16.593	
9,200.00	9,122.00	9,123.48	9,122.00	35.76	32.27	-179.94	-0.69	-15.79	1,088.80	1,023.35	65.45	16.635	
9,300.00	9,220.91	9,222.39	9,220.91	36.17	32.63	-179.94	-0.69	-15.79	1,103.54	1,037.37	66.18	16.676	
9,400.00	9,319.82	9,321.29	9,319.82	36.58	32.98	-179.94	-0.69	-15.79	1,118.29	1,051.39	66.90	16.716	
9,500.00	9,418.72	9,420.20	9,418.72	36.99	33.33	-179.94	-0.69	-15.79	1,133.04	1,065.42	67.62	16.756	
9,600.00	9,517.63	9,519.11	9,517.63	37.40	33.69	-179.94	-0.69	-15.79	1,147.78	1,079.44	68.34	16.794	
9,700.00	9,616.54	9,618.01	9,616.54	37.81	34.04	-179.94	-0.69	-15.79	1,162.53	1,093.46	69.07	16.832	
9,800.00	9,715.44	9,716.92	9,715.44	38.22	34.39	-179.94	-0.69	-15.79	1,177.27	1,107.48	69.79	16.869	
9,900.00	9,814.35	9,815.83	9,814.35	38.63	34.75	-179.95	-0.69	-15.79	1,192.02	1,121.51	70.51	16.905	
10,000.00	9,913.26	9,914.73	9,913.26	39.04	35.10	-179.95	-0.69	-15.79	1,206.77	1,135.53	71.24	16.940	
10,100.00	10,012.16	10,013.64	10,012.16	39.45	35.45	-179.95	-0.69	-15.79	1,221.51	1,149.55	71.96	16.975	
10,200.00	10,111.07	10,112.55	10,111.07	39.86	35.80	-179.95	-0.69	-15.79	1,236.26	1,163.57	72.68	17.009	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 81H - OH - PN1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,300.00	10,209.98	10,211.45	10,209.98	40.26	36.16	-179.95	-0.69	-15.79	1,251.00	1,177.60	73.41	17.042	
10,345.64	10,255.12	10,256.60	10,255.12	40.45	36.32	-179.95	-0.69	-15.79	1,257.73	1,184.00	73.74	17.057	
10,400.00	10,308.92	10,310.40	10,308.92	40.87	36.51	-179.95	-0.69	-15.79	1,265.50	1,191.36	74.13	17.071	
10,500.00	10,408.08	10,409.56	10,408.08	41.07	36.87	-179.95	-0.69	-15.79	1,278.44	1,203.58	74.85	17.079	
10,600.00	10,507.45	10,508.92	10,507.45	41.46	37.22	-179.95	-0.69	-15.79	1,289.65	1,214.07	75.57	17.065	
10,700.00	10,607.00	10,608.47	10,607.00	41.84	37.58	-179.95	-0.69	-15.79	1,299.12	1,222.83	76.29	17.028	
10,800.00	10,706.70	10,708.17	10,706.70	42.20	37.93	-179.95	-0.69	-15.79	1,306.85	1,229.85	77.01	16.970	
10,900.00	10,806.51	10,807.99	10,806.51	42.56	38.29	-179.95	-0.69	-15.79	1,312.85	1,235.13	77.72	16.892	
11,000.00	10,906.42	10,907.90	10,906.42	42.91	38.65	-179.95	-0.69	-15.79	1,317.10	1,238.67	78.43	16.793	
11,100.00	11,006.39	11,007.87	11,006.39	43.25	39.00	-179.95	-0.69	-15.79	1,319.60	1,240.47	79.14	16.674	
11,193.61	11,100.00	11,101.48	11,100.00	43.55	39.34	-96.55	-0.69	-15.79	1,320.37	1,240.58	79.79	16.547	
11,200.00	11,106.39	11,107.86	11,106.39	43.57	39.36	-96.55	-0.69	-15.79	1,320.37	1,240.53	79.84	16.538	
11,300.00	11,206.39	11,207.86	11,206.39	43.89	39.72	-96.55	-0.69	-15.79	1,320.37	1,239.84	80.53	16.396	
11,400.00	11,306.39	11,307.86	11,306.39	44.20	40.08	-96.55	-0.69	-15.79	1,320.37	1,239.15	81.22	16.257	
11,500.00	11,406.39	11,407.86	11,406.39	44.52	40.43	-96.55	-0.69	-15.79	1,320.37	1,238.46	81.91	16.119	
11,600.00	11,506.39	11,507.86	11,506.39	44.84	40.79	-96.55	-0.69	-15.79	1,320.37	1,237.77	82.60	15.984	
11,700.00	11,606.39	11,607.86	11,606.39	45.16	41.15	-96.55	-0.69	-15.79	1,320.37	1,237.07	83.30	15.851	
11,800.00	11,706.39	11,707.86	11,706.39	45.48	41.50	-96.55	-0.69	-15.79	1,320.37	1,236.38	83.99	15.720	
11,900.00	11,806.39	11,807.86	11,806.39	45.80	41.86	-96.55	-0.69	-15.79	1,320.37	1,235.69	84.68	15.592	
12,000.00	11,906.39	11,907.86	11,906.39	46.12	42.22	-96.55	-0.69	-15.79	1,320.37	1,234.99	85.38	15.465	
12,100.00	12,006.39	12,007.86	12,006.39	46.44	42.58	-96.55	-0.69	-15.79	1,320.37	1,234.30	86.07	15.340	
12,145.61	12,052.00	12,046.17	12,044.68	46.58	42.71	-96.58	-1.36	-15.79	1,320.47	1,234.13	86.34	15.294	
12,150.00	12,056.39	12,050.00	12,048.51	46.60	42.72	83.41	-1.56	-15.79	1,320.49	1,234.12	86.37	15.289	
12,200.00	12,106.30	12,089.08	12,087.42	46.75	42.85	83.32	-5.03	-15.79	1,320.71	1,234.08	86.62	15.247	
12,250.00	12,155.81	12,128.47	12,126.32	46.90	42.98	83.28	-11.22	-15.79	1,320.82	1,233.94	86.87	15.204	
12,300.00	12,204.52	12,167.84	12,164.68	47.04	43.10	83.28	-20.05	-15.79	1,320.82	1,233.70	87.12	15.162	
12,350.00	12,252.08	12,207.23	12,202.36	47.18	43.22	83.32	-31.50	-15.79	1,320.72	1,233.36	87.35	15.119	
12,400.00	12,298.11	12,246.67	12,239.21	47.31	43.34	83.40	-45.53	-15.79	1,320.51	1,232.92	87.58	15.078	
12,450.00	12,342.27	12,286.21	12,275.09	47.43	43.45	83.53	-62.11	-15.79	1,320.19	1,232.39	87.80	15.036	
12,500.00	12,384.22	12,325.87	12,309.86	47.54	43.56	83.69	-81.19	-15.79	1,319.79	1,231.76	88.02	14.994	
12,550.00	12,423.64	12,365.70	12,343.36	47.64	43.67	83.90	-102.72	-15.79	1,319.29	1,231.05	88.24	14.951	
12,600.00	12,460.23	12,405.74	12,375.44	47.73	43.78	84.14	-126.66	-15.79	1,318.73	1,230.27	88.45	14.908	
12,650.00	12,493.72	12,446.03	12,405.97	47.81	43.88	84.42	-152.95	-15.79	1,318.10	1,229.42	88.67	14.865	
12,700.00	12,523.84	12,486.62	12,434.76	47.88	43.99	84.74	-181.53	-15.79	1,317.42	1,228.53	88.89	14.821	
12,750.00	12,550.37	12,527.54	12,461.68	47.94	44.10	85.09	-212.35	-15.79	1,316.71	1,227.60	89.11	14.775	
12,800.00	12,573.11	12,568.85	12,486.56	48.00	44.21	85.47	-245.32	-15.79	1,315.99	1,226.64	89.34	14.729	
12,850.00	12,591.89	12,610.61	12,509.21	48.06	44.32	85.88	-280.38	-15.79	1,315.27	1,225.69	89.58	14.683	
12,900.00	12,606.55	12,652.85	12,529.48	48.11	44.43	86.32	-317.44	-15.79	1,314.57	1,224.75	89.82	14.636	
12,950.00	12,617.00	12,695.65	12,547.17	48.18	44.54	86.79	-356.40	-15.79	1,313.91	1,223.85	90.06	14.589	
13,000.00	12,623.14	12,739.07	12,562.10	48.24	44.65	87.28	-397.16	-15.79	1,313.31	1,223.00	90.31	14.542	
13,042.39	12,624.95	12,776.41	12,572.43	48.30	44.74	87.70	-433.03	-15.79	1,312.86	1,222.33	90.53	14.503	
13,100.00	12,625.27	12,828.51	12,582.91	48.40	44.87	88.15	-484.05	-15.79	1,312.44	1,221.63	90.82	14.452	
13,200.00	12,625.84	12,922.41	12,590.00	48.60	45.10	88.43	-577.58	-15.79	1,312.23	1,220.92	91.31	14.371	
13,300.00	12,626.40	13,022.41	12,590.65	48.85	45.37	88.44	-677.57	-15.79	1,312.23	1,220.36	91.87	14.284	
13,400.00	12,626.96	13,122.41	12,591.31	49.14	45.68	88.44	-777.57	-15.79	1,312.23	1,219.72	92.51	14.185	
13,500.00	12,627.52	13,222.41	12,591.96	49.47	46.04	88.45	-877.57	-15.79	1,312.22	1,218.99	93.23	14.075	
13,600.00	12,628.09	13,322.41	12,592.62	49.85	46.43	88.45	-977.57	-15.79	1,312.22	1,218.18	94.04	13.954	
13,700.00	12,628.65	13,422.41	12,593.28	50.27	46.86	88.46	-1,077.56	-15.79	1,312.22	1,217.30	94.92	13.824	
13,800.00	12,629.21	13,522.41	12,593.93	50.73	47.34	88.46	-1,177.56	-15.79	1,312.22	1,216.33	95.89	13.685	
13,900.00	12,629.78	13,622.41	12,594.59	51.22	47.85	88.46	-1,277.56	-15.79	1,312.21	1,215.29	96.93	13.538	
14,000.00	12,630.34	13,722.41	12,595.24	51.76	48.40	88.47	-1,377.56	-15.79	1,312.21	1,214.17	98.04	13.385	
14,100.00	12,630.90	13,822.41	12,595.90	52.33	48.98	88.47	-1,477.56	-15.79	1,312.21	1,212.99	99.22	13.225	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 81H - OH - PN1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,200.00	12,631.46	13,922.41	12,596.56	52.93	49.60	88.48	-1,577.55	-15.79	1,312.21	1,211.74	100.47	13.060	
14,300.00	12,632.03	14,022.41	12,597.21	53.57	50.26	88.48	-1,677.55	-15.79	1,312.20	1,210.42	101.79	12.892	
14,400.00	12,632.59	14,122.41	12,597.87	54.24	50.94	88.48	-1,777.55	-15.79	1,312.20	1,209.04	103.17	12.719	
14,500.00	12,633.15	14,222.41	12,598.52	54.93	51.66	88.49	-1,877.55	-15.79	1,312.20	1,207.59	104.61	12.544	
14,600.00	12,633.72	14,322.41	12,599.18	55.66	52.40	88.49	-1,977.55	-15.79	1,312.20	1,206.09	106.10	12.367	
14,700.00	12,634.28	14,422.41	12,599.83	56.42	53.18	88.50	-2,077.54	-15.79	1,312.19	1,204.54	107.66	12.189	
14,800.00	12,634.84	14,522.41	12,600.49	57.20	53.98	88.50	-2,177.54	-15.79	1,312.19	1,202.93	109.26	12.009	
14,900.00	12,635.40	14,622.41	12,601.15	58.00	54.80	88.50	-2,277.54	-15.79	1,312.19	1,201.27	110.92	11.830	
15,000.00	12,635.97	14,722.41	12,601.80	58.83	55.66	88.51	-2,377.54	-15.79	1,312.19	1,199.56	112.63	11.651	
15,100.00	12,636.53	14,822.41	12,602.46	59.69	56.53	88.51	-2,477.53	-15.79	1,312.19	1,197.81	114.38	11.472	
15,200.00	12,637.09	14,922.41	12,603.11	60.56	57.43	88.52	-2,577.53	-15.79	1,312.18	1,196.01	116.18	11.295	
15,300.00	12,637.66	15,022.41	12,603.77	61.46	58.35	88.52	-2,677.53	-15.79	1,312.18	1,194.16	118.02	11.119	
15,400.00	12,638.22	15,122.41	12,604.43	62.38	59.28	88.52	-2,777.53	-15.79	1,312.18	1,192.28	119.90	10.944	
15,500.00	12,638.78	15,222.40	12,605.08	63.32	60.24	88.53	-2,877.53	-15.79	1,312.18	1,190.36	121.81	10.772	
15,600.00	12,639.34	15,322.40	12,605.74	64.27	61.22	88.53	-2,977.52	-15.79	1,312.17	1,188.40	123.77	10.602	
15,700.00	12,639.91	15,422.40	12,606.39	65.24	62.22	88.54	-3,077.52	-15.79	1,312.17	1,186.41	125.76	10.434	
15,800.00	12,640.47	15,522.40	12,607.05	66.23	63.23	88.54	-3,177.52	-15.79	1,312.17	1,184.39	127.78	10.269	
15,900.00	12,641.03	15,622.40	12,607.71	67.24	64.26	88.54	-3,277.52	-15.79	1,312.17	1,182.33	129.84	10.106	
16,000.00	12,641.60	15,722.40	12,608.36	68.26	65.30	88.55	-3,377.51	-15.79	1,312.16	1,180.24	131.92	9.946	
16,100.00	12,642.16	15,822.40	12,609.02	69.29	66.36	88.55	-3,477.51	-15.79	1,312.16	1,178.12	134.04	9.789	
16,200.00	12,642.72	15,922.40	12,609.67	70.34	67.43	88.56	-3,577.51	-15.79	1,312.16	1,175.98	136.18	9.635	
16,300.00	12,643.28	16,022.40	12,610.33	71.41	68.51	88.56	-3,677.51	-15.79	1,312.16	1,173.81	138.35	9.484	
16,400.00	12,643.85	16,122.40	12,610.98	72.48	69.61	88.56	-3,777.51	-15.79	1,312.15	1,171.61	140.54	9.336	
16,500.00	12,644.41	16,222.40	12,611.64	73.57	70.72	88.57	-3,877.50	-15.79	1,312.15	1,169.39	142.76	9.191	
16,600.00	12,644.97	16,322.40	12,612.30	74.67	71.84	88.57	-3,977.50	-15.79	1,312.15	1,167.15	145.00	9.049	
16,700.00	12,645.54	16,422.40	12,612.95	75.78	72.97	88.58	-4,077.50	-15.79	1,312.15	1,164.88	147.26	8.910	
16,800.00	12,646.10	16,522.40	12,613.61	76.90	74.12	88.58	-4,177.50	-15.79	1,312.14	1,162.60	149.55	8.774	
16,900.00	12,646.66	16,622.40	12,614.26	78.03	75.27	88.59	-4,277.49	-15.79	1,312.14	1,160.29	151.85	8.641	
17,000.00	12,647.22	16,722.40	12,614.92	79.18	76.43	88.59	-4,377.49	-15.79	1,312.14	1,157.97	154.17	8.511	
17,100.00	12,647.79	16,822.40	12,615.58	80.33	77.60	88.59	-4,477.49	-15.79	1,312.14	1,155.63	156.51	8.384	
17,200.00	12,648.35	16,922.40	12,616.23	81.49	78.78	88.60	-4,577.49	-15.79	1,312.14	1,153.27	158.87	8.259	
17,300.00	12,648.91	17,022.40	12,616.89	82.66	79.97	88.60	-4,677.49	-15.79	1,312.13	1,150.89	161.24	8.138	
17,400.00	12,649.48	17,122.40	12,617.54	83.83	81.17	88.61	-4,777.48	-15.79	1,312.13	1,148.50	163.63	8.019	
17,500.00	12,650.04	17,222.40	12,618.20	85.02	82.37	88.61	-4,877.48	-15.79	1,312.13	1,146.09	166.04	7.903	
17,600.00	12,650.60	17,322.40	12,618.86	86.21	83.58	88.61	-4,977.48	-15.79	1,312.13	1,143.67	168.46	7.789	
17,700.00	12,651.16	17,422.40	12,619.51	87.41	84.80	88.62	-5,077.48	-15.79	1,312.12	1,141.23	170.89	7.678	
17,800.00	12,651.73	17,522.40	12,620.17	88.62	86.03	88.62	-5,177.47	-15.79	1,312.12	1,138.78	173.34	7.570	
17,900.00	12,652.29	17,622.40	12,620.82	89.83	87.26	88.63	-5,277.47	-15.79	1,312.12	1,136.32	175.80	7.464	
18,000.00	12,652.85	17,722.40	12,621.48	91.05	88.49	88.63	-5,377.47	-15.79	1,312.12	1,133.85	178.27	7.360	
18,100.00	12,653.42	17,822.40	12,622.14	92.28	89.74	88.63	-5,477.47	-15.79	1,312.12	1,131.36	180.75	7.259	
18,200.00	12,653.98	17,922.40	12,622.79	93.51	90.99	88.64	-5,577.47	-15.79	1,312.11	1,128.86	183.25	7.160	
18,300.00	12,654.54	18,022.40	12,623.45	94.75	92.24	88.64	-5,677.46	-15.79	1,312.11	1,126.36	185.75	7.064	
18,400.00	12,655.10	18,122.40	12,624.10	95.99	93.50	88.65	-5,777.46	-15.79	1,312.11	1,123.84	188.27	6.969	
18,500.00	12,655.67	18,222.40	12,624.76	97.24	94.76	88.65	-5,877.46	-15.79	1,312.11	1,121.31	190.80	6.877	
18,600.00	12,656.23	18,322.40	12,625.41	98.49	96.03	88.65	-5,977.46	-15.79	1,312.10	1,118.77	193.33	6.787	
18,700.00	12,656.79	18,422.40	12,626.07	99.75	97.31	88.66	-6,077.46	-15.79	1,312.10	1,116.23	195.88	6.699	
18,800.00	12,657.36	18,522.40	12,626.73	101.01	98.59	88.66	-6,177.45	-15.79	1,312.10	1,113.67	198.43	6.612	
18,900.00	12,657.92	18,622.40	12,627.38	102.28	99.87	88.67	-6,277.45	-15.79	1,312.10	1,111.11	200.99	6.528	
19,000.00	12,658.48	18,722.40	12,628.04	103.55	101.15	88.67	-6,377.45	-15.79	1,312.10	1,108.53	203.56	6.446	
19,100.00	12,659.04	18,822.40	12,628.69	104.83	102.44	88.67	-6,477.45	-15.79	1,312.09	1,105.95	206.14	6.365	
19,200.00	12,659.61	18,922.40	12,629.35	106.11	103.74	88.68	-6,577.44	-15.79	1,312.09	1,103.37	208.73	6.286	
19,300.00	12,660.17	19,022.40	12,630.01	107.39	105.04	88.68	-6,677.44	-15.79	1,312.09	1,100.77	211.32	6.209	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 81H - OH - PN1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
19,400.00	12,660.73	19,122.40	12,630.66	108.88	106.34	88.69	-6,777.44	-15.79	1,312.09	1,098.17	213.92	6.134	
19,500.00	12,661.30	19,222.40	12,631.32	109.97	107.64	88.69	-6,877.44	-15.79	1,312.09	1,095.56	216.53	6.060	
19,600.00	12,661.86	19,322.40	12,631.97	111.26	108.95	88.69	-6,977.44	-15.79	1,312.08	1,092.94	219.14	5.987	
19,700.00	12,662.42	19,422.40	12,632.63	112.56	110.26	88.70	-7,077.43	-15.79	1,312.08	1,090.32	221.76	5.917	
19,800.00	12,662.98	19,522.40	12,633.29	113.86	111.58	88.70	-7,177.43	-15.79	1,312.08	1,087.69	224.38	5.847	
19,900.00	12,663.55	19,622.40	12,633.94	115.17	112.89	88.71	-7,277.43	-15.79	1,312.08	1,085.06	227.02	5.780	
20,000.00	12,664.11	19,722.40	12,634.60	116.48	114.21	88.71	-7,377.43	-15.79	1,312.07	1,082.42	229.65	5.713	
20,100.00	12,664.67	19,822.40	12,635.25	117.79	115.54	88.72	-7,477.42	-15.79	1,312.07	1,079.78	232.30	5.648	
20,200.00	12,665.24	19,922.40	12,635.91	119.10	116.86	88.72	-7,577.42	-15.79	1,312.07	1,077.13	234.94	5.585	
20,300.00	12,665.80	20,022.40	12,636.56	120.42	118.19	88.72	-7,677.42	-15.79	1,312.07	1,074.47	237.60	5.522	
20,400.00	12,666.36	20,122.40	12,637.22	121.73	119.52	88.73	-7,777.42	-15.79	1,312.07	1,071.81	240.26	5.461	
20,500.00	12,666.92	20,222.40	12,637.88	123.06	120.85	88.73	-7,877.42	-15.79	1,312.06	1,069.15	242.92	5.401	
20,600.00	12,667.49	20,322.40	12,638.53	124.38	122.19	88.74	-7,977.41	-15.79	1,312.06	1,066.48	245.59	5.343	
20,700.00	12,668.05	20,422.40	12,639.19	125.71	123.52	88.74	-8,077.41	-15.79	1,312.06	1,063.80	248.26	5.285	
20,800.00	12,668.61	20,522.40	12,639.84	127.04	124.86	88.74	-8,177.41	-15.79	1,312.06	1,061.12	250.94	5.229	
20,900.00	12,669.18	20,622.40	12,640.50	128.37	126.20	88.75	-8,277.41	-15.79	1,312.06	1,058.44	253.62	5.173	
21,000.00	12,669.74	20,722.40	12,641.16	129.70	127.55	88.75	-8,377.40	-15.79	1,312.05	1,055.75	256.30	5.119	
21,100.00	12,670.30	20,822.40	12,641.81	131.03	128.89	88.76	-8,477.40	-15.79	1,312.05	1,053.06	258.99	5.066	
21,200.00	12,670.86	20,922.40	12,642.47	132.37	130.24	88.76	-8,577.40	-15.79	1,312.05	1,050.37	261.68	5.014	
21,300.00	12,671.43	21,022.40	12,643.12	133.71	131.59	88.76	-8,677.40	-15.79	1,312.05	1,047.67	264.38	4.963	
21,400.00	12,671.99	21,122.40	12,643.78	135.05	132.94	88.77	-8,777.40	-15.79	1,312.05	1,044.97	267.08	4.913	
21,500.00	12,672.55	21,222.40	12,644.44	136.40	134.29	88.77	-8,877.39	-15.79	1,312.04	1,042.26	269.78	4.863	
21,600.00	12,673.12	21,322.40	12,645.09	137.74	135.65	88.78	-8,977.39	-15.79	1,312.04	1,039.55	272.49	4.815	
21,700.00	12,673.68	21,422.40	12,645.75	139.09	137.00	88.78	-9,077.39	-15.79	1,312.04	1,036.84	275.20	4.768	
21,800.00	12,674.24	21,522.40	12,646.40	140.44	138.36	88.78	-9,177.39	-15.79	1,312.04	1,034.13	277.91	4.721	
21,900.00	12,674.80	21,622.40	12,647.06	141.79	139.72	88.79	-9,277.39	-15.79	1,312.04	1,031.41	280.63	4.675	
22,000.00	12,675.37	21,722.40	12,647.72	143.14	141.08	88.79	-9,377.38	-15.79	1,312.03	1,028.69	283.35	4.630	
22,100.00	12,675.93	21,822.40	12,648.37	144.49	142.44	88.80	-9,477.38	-15.79	1,312.03	1,025.96	286.07	4.586	
22,200.00	12,676.49	21,922.40	12,649.03	145.85	143.81	88.80	-9,577.38	-15.79	1,312.03	1,023.24	288.79	4.543	
22,300.00	12,677.06	22,022.40	12,649.68	147.20	145.17	88.80	-9,677.38	-15.79	1,312.03	1,020.51	291.52	4.501	
22,400.00	12,677.62	22,122.40	12,650.34	148.56	146.54	88.81	-9,777.37	-15.79	1,312.03	1,017.77	294.25	4.459	
22,500.00	12,678.18	22,222.40	12,650.99	149.92	147.90	88.81	-9,877.37	-15.79	1,312.02	1,015.04	296.99	4.418	
22,600.00	12,678.74	22,322.40	12,651.65	151.28	149.27	88.82	-9,977.37	-15.79	1,312.02	1,012.30	299.72	4.377	
22,645.43	12,679.00	22,367.83	12,651.95	151.90	149.89	88.82	-10,022.80	-15.79	1,312.02	1,011.06	300.97	4.359 SF	



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 82H - OH - PN2												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM												Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.10	0.10	2.00	2.00	-90.43	-0.45	-60.01	60.01				
100.00	100.00	100.10	100.10	2.00	2.00	-90.43	-0.45	-60.01	60.01	56.00	4.01	14.975	
200.00	200.00	200.10	200.10	2.06	2.06	-90.43	-0.45	-60.01	60.01	55.90	4.11	14.588	
300.00	300.00	300.10	300.10	2.17	2.17	-90.43	-0.45	-60.01	60.01	55.67	4.34	13.835	
400.00	400.00	400.10	400.10	2.33	2.33	-90.43	-0.45	-60.01	60.01	55.35	4.66	12.872	
500.00	500.00	500.10	500.10	2.53	2.53	-90.43	-0.45	-60.01	60.01	54.94	5.07	11.841	
600.00	600.00	600.10	600.10	2.77	2.77	-90.43	-0.45	-60.01	60.01	54.47	5.54	10.838	
700.00	700.00	700.10	700.10	3.03	3.03	-90.43	-0.45	-60.01	60.01	53.96	6.06	9.911	
800.00	800.00	800.10	800.10	3.31	3.31	-90.43	-0.45	-60.01	60.01	53.40	6.61	9.079	
900.00	900.00	900.10	900.10	3.60	3.60	-90.43	-0.45	-60.01	60.01	52.82	7.19	8.342	
1,000.00	1,000.00	1,000.10	1,000.10	3.90	3.90	-90.43	-0.45	-60.01	60.01	52.21	7.80	7.694	
1,100.00	1,100.00	1,100.10	1,100.10	4.21	4.21	-90.43	-0.45	-60.01	60.01	51.59	8.42	7.124	
1,200.00	1,200.00	1,200.10	1,200.10	4.53	4.53	-90.43	-0.45	-60.01	60.01	50.95	9.06	6.623	
1,300.00	1,300.00	1,300.10	1,300.10	4.85	4.85	-90.43	-0.45	-60.01	60.01	50.30	9.71	6.181	
1,400.00	1,400.00	1,400.10	1,400.10	5.18	5.18	-90.43	-0.45	-60.01	60.01	49.64	10.37	5.789	
1,500.00	1,500.00	1,500.10	1,500.10	5.52	5.52	-90.43	-0.45	-60.01	60.01	48.98	11.03	5.440 CC, ES	
1,600.00	1,599.99	1,600.09	1,600.09	5.84	5.85	-173.91	-0.45	-60.01	60.88	49.18	11.70	5.205	
1,700.00	1,699.96	1,700.06	1,700.06	6.17	6.19	-174.16	-0.45	-60.01	63.48	51.12	12.36	5.137	
1,800.00	1,799.86	1,800.04	1,799.96	6.50	6.53	-174.53	-0.45	-60.01	67.82	54.80	13.03	5.207	
1,900.00	1,899.68	1,900.22	1,899.78	6.83	6.87	-174.98	-0.45	-60.01	73.90	60.20	13.70	5.394	
2,000.00	1,999.37	2,000.53	1,999.47	7.17	7.22	-175.45	-0.45	-60.01	81.72	67.34	14.38	5.684	
2,100.00	2,098.90	2,101.00	2,099.00	7.51	7.56	-175.92	-0.45	-60.01	91.28	76.22	15.06	6.061	
2,200.00	2,198.26	2,201.64	2,198.36	7.86	7.91	-176.37	-0.45	-60.01	102.57	86.83	15.75	6.514	
2,300.00	2,297.40	2,302.50	2,297.50	8.21	8.26	-176.77	-0.45	-60.01	115.60	99.17	16.44	7.033	
2,347.97	2,344.88	2,344.98	2,344.98	8.39	8.41	-176.95	-0.45	-60.01	122.47	105.72	16.75	7.312	
2,400.00	2,396.34	2,403.56	2,396.44	8.57	8.61	-177.13	-0.45	-60.01	130.13	113.00	17.13	7.596	
2,500.00	2,495.25	2,495.35	2,495.35	8.94	8.94	-177.42	-0.45	-60.01	144.86	127.07	17.79	8.141	
2,600.00	2,594.15	2,596.94	2,596.93	9.31	9.28	-177.69	-0.45	-59.19	158.80	140.31	18.49	8.590	
2,700.00	2,693.06	2,699.12	2,699.08	9.68	9.62	-177.96	-0.45	-56.55	170.98	151.81	19.17	8.918	
2,800.00	2,791.97	2,801.72	2,801.58	10.05	9.97	-178.24	-0.45	-52.07	181.40	161.54	19.86	9.135	
2,900.00	2,890.87	2,904.67	2,904.33	10.43	10.32	-178.55	-0.45	-45.73	190.04	169.50	20.54	9.250	
3,000.00	2,989.78	3,007.90	3,007.23	10.81	10.67	-178.87	-0.45	-37.51	196.90	175.67	21.23	9.275	
3,100.00	3,088.69	3,111.35	3,110.19	11.19	11.03	-179.23	-0.45	-27.43	201.98	180.07	21.91	9.217	
3,200.00	3,187.59	3,213.46	3,211.63	11.58	11.38	-179.62	-0.45	-15.79	205.41	182.81	22.60	9.088	
3,300.00	3,286.50	3,313.40	3,310.89	11.96	11.74	-179.99	-0.45	-4.07	208.54	185.23	23.30	8.948	
3,400.00	3,385.41	3,413.34	3,410.14	12.35	12.09	179.64	-0.45	7.64	211.67	187.66	24.01	8.817	
3,500.00	3,484.31	3,513.28	3,509.39	12.74	12.45	179.29	-0.45	19.36	214.81	190.09	24.71	8.692	
3,600.00	3,583.22	3,613.23	3,608.65	13.13	12.80	178.94	-0.45	31.08	217.95	192.53	25.42	8.574	
3,700.00	3,682.13	3,713.17	3,707.90	13.52	13.16	178.61	-0.45	42.79	221.11	194.98	26.13	8.461	
3,800.00	3,781.03	3,813.11	3,807.15	13.92	13.53	178.28	-0.45	54.51	224.27	197.43	26.84	8.355	
3,900.00	3,879.94	3,913.05	3,906.40	14.31	13.89	177.97	-0.45	66.22	227.44	199.88	27.56	8.253	
4,000.00	3,978.85	4,013.00	4,005.66	14.71	14.26	177.66	-0.45	77.94	230.62	202.34	28.27	8.157	
4,100.00	4,077.75	4,112.94	4,104.91	15.10	14.62	177.36	-0.45	89.65	233.80	204.81	28.99	8.065	
4,200.00	4,176.66	4,212.88	4,204.16	15.50	14.99	177.07	-0.45	101.37	236.99	207.28	29.71	7.977	
4,300.00	4,275.57	4,312.82	4,303.42	15.90	15.36	176.79	-0.45	113.09	240.18	209.75	30.43	7.893	
4,400.00	4,374.48	4,412.76	4,402.67	16.29	15.73	176.51	-0.45	124.80	243.38	212.23	31.15	7.813	
4,500.00	4,473.38	4,512.71	4,501.92	16.69	16.10	176.24	-0.45	136.52	246.59	214.72	31.87	7.737	
4,600.00	4,572.29	4,612.65	4,601.17	17.09	16.47	175.98	-0.45	148.23	249.80	217.21	32.60	7.663	
4,700.00	4,671.20	4,712.59	4,700.43	17.49	16.85	175.73	-0.45	159.95	253.02	219.70	33.32	7.593	
4,800.00	4,770.10	4,812.53	4,799.68	17.89	17.22	175.48	-0.45	171.66	256.24	222.19	34.05	7.526	
4,900.00	4,869.01	4,912.47	4,898.93	18.29	17.60	175.24	-0.45	183.38	259.46	224.69	34.77	7.462	
5,000.00	4,967.92	5,012.42	4,998.19	18.70	17.97	175.00	-0.45	195.10	262.70	227.19	35.50	7.400	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 92H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	5,066.82	5,112.36	5,097.44	19.10	18.35	174.77	-0.45	206.81	265.93	229.70	36.23	7.340	
5,200.00	5,165.73	5,212.30	5,196.69	19.50	18.72	174.55	-0.45	218.53	269.17	232.21	36.96	7.283	
5,300.00	5,264.64	5,312.24	5,295.95	19.90	19.10	174.33	-0.45	230.24	272.41	234.72	37.69	7.228	
5,400.00	5,363.54	5,412.18	5,395.20	20.31	19.48	174.11	-0.45	241.96	275.66	237.24	38.42	7.175	
5,500.00	5,462.45	5,512.13	5,494.45	20.71	19.86	173.90	-0.45	253.67	278.91	239.76	39.15	7.124	
5,600.00	5,561.36	5,612.07	5,593.70	21.11	20.24	173.70	-0.45	265.39	282.16	242.28	39.88	7.075	
5,700.00	5,660.26	5,712.01	5,692.96	21.52	20.62	173.50	-0.45	277.11	285.42	244.80	40.62	7.027	
5,800.00	5,759.17	5,811.95	5,792.21	21.92	21.00	173.30	-0.45	288.82	288.68	247.33	41.35	6.981	
5,900.00	5,858.08	5,911.89	5,891.46	22.33	21.38	173.11	-0.45	300.54	291.95	249.86	42.08	6.937	
6,000.00	5,956.98	6,011.84	5,990.72	22.73	21.76	172.92	-0.45	312.25	295.21	252.40	42.82	6.894	
6,100.00	6,055.89	6,111.78	6,089.97	23.14	22.14	172.74	-0.45	323.97	298.49	254.93	43.55	6.853	
6,200.00	6,154.80	6,211.72	6,189.22	23.54	22.52	172.56	-0.45	335.68	301.76	257.47	44.29	6.813	
6,300.00	6,253.70	6,311.66	6,288.47	23.95	22.91	172.39	-0.45	347.40	305.04	260.01	45.03	6.775	
6,400.00	6,352.61	6,411.60	6,387.73	24.35	23.29	172.22	-0.45	359.12	308.31	262.55	45.76	6.737	
6,500.00	6,451.52	6,511.55	6,486.98	24.76	23.67	172.05	-0.45	370.83	311.60	265.10	46.50	6.701	
6,600.00	6,550.42	6,611.49	6,586.23	25.16	24.05	171.88	-0.45	382.55	314.88	267.64	47.24	6.666	
6,700.00	6,649.33	6,711.43	6,685.49	25.57	24.44	171.72	-0.45	394.26	318.17	270.19	47.98	6.632	
6,800.00	6,748.24	6,811.37	6,784.74	25.98	24.82	171.57	-0.45	405.98	321.46	272.74	48.72	6.599	
6,900.00	6,847.15	6,911.31	6,883.99	26.38	25.21	171.41	-0.45	417.70	324.75	275.30	49.45	6.567	
7,000.00	6,946.05	7,011.26	6,983.25	26.79	25.59	171.26	-0.45	429.41	328.04	277.85	50.19	6.536	
7,100.00	7,044.96	7,111.20	7,082.50	27.20	25.97	171.11	-0.45	441.13	331.34	280.41	50.93	6.505	
7,200.00	7,143.87	7,211.14	7,181.75	27.60	26.36	170.97	-0.45	452.84	334.64	282.97	51.67	6.476	
7,300.00	7,242.77	7,311.08	7,281.00	28.01	26.74	170.82	-0.45	464.56	337.94	285.53	52.41	6.447	
7,400.00	7,341.68	7,411.02	7,380.26	28.42	27.13	170.68	-0.45	476.27	341.24	288.09	53.16	6.420	
7,500.00	7,440.59	7,510.97	7,479.51	28.82	27.51	170.55	-0.45	487.99	344.55	290.65	53.90	6.393	
7,600.00	7,539.49	7,610.91	7,578.76	29.23	27.90	170.41	-0.45	499.71	347.86	293.22	54.64	6.366	
7,700.00	7,638.40	7,710.85	7,678.02	29.64	28.29	170.28	-0.45	511.42	351.16	295.78	55.38	6.341	
7,800.00	7,737.31	7,810.79	7,777.27	30.05	28.67	170.15	-0.45	523.14	354.47	298.35	56.12	6.316	
7,900.00	7,836.21	7,910.73	7,876.52	30.45	29.06	170.02	-0.45	534.85	357.79	300.92	56.87	6.292	
8,000.00	7,935.12	8,010.68	7,975.78	30.86	29.44	169.90	-0.45	546.57	361.10	303.49	57.61	6.268	
8,100.00	8,034.03	8,110.62	8,075.03	31.27	29.83	169.78	-0.45	558.28	364.42	306.06	58.35	6.245	
8,200.00	8,132.93	8,207.88	8,171.64	31.68	30.21	169.67	-0.45	569.99	367.70	308.61	59.09	6.226	
8,300.00	8,231.84	8,301.95	8,265.22	32.09	30.56	169.62	-0.45	579.07	372.73	312.92	59.81	6.232	
8,400.00	8,330.75	8,395.85	8,358.78	32.50	30.92	169.65	-0.45	587.07	379.13	318.61	60.52	6.265	
8,500.00	8,429.65	8,489.54	8,452.24	32.90	31.26	169.74	-0.45	593.52	387.09	325.88	61.20	6.325	
8,600.00	8,528.56	8,582.96	8,545.54	33.31	31.60	169.89	-0.45	598.43	396.61	334.73	61.88	6.410	
8,700.00	8,627.47	8,676.07	8,638.58	33.72	31.93	170.09	-0.45	601.81	407.68	345.15	62.53	6.520	
8,800.00	8,726.37	8,768.82	8,731.31	34.13	32.25	170.35	-0.45	603.67	420.31	357.14	63.17	6.654	
8,900.00	8,825.28	8,862.89	8,825.38	34.54	32.57	170.64	-0.45	604.08	434.43	370.63	63.81	6.809	
9,000.00	8,924.19	8,961.80	8,924.29	34.95	32.90	170.95	-0.45	604.08	448.99	384.49	64.51	6.960	
9,100.00	9,023.10	9,060.70	9,023.20	35.36	33.23	171.23	-0.45	604.08	463.56	398.36	65.21	7.109	
9,200.00	9,122.00	9,159.61	9,122.10	35.76	33.57	171.50	-0.45	604.08	478.15	412.24	65.91	7.255	
9,300.00	9,220.91	9,258.52	9,221.01	36.17	33.90	171.76	-0.45	604.08	492.74	426.13	66.61	7.397	
9,400.00	9,319.82	9,357.42	9,319.92	36.58	34.23	171.99	-0.45	604.08	507.34	440.02	67.32	7.537	
9,500.00	9,418.72	9,456.33	9,418.82	36.99	34.57	172.22	-0.45	604.08	521.95	453.93	68.02	7.673	
9,600.00	9,517.63	9,555.24	9,517.73	37.40	34.90	172.43	-0.45	604.08	536.57	467.84	68.73	7.807	
9,700.00	9,616.54	9,654.14	9,616.64	37.81	35.24	172.63	-0.45	604.08	551.19	481.76	69.43	7.938	
9,800.00	9,715.44	9,753.05	9,715.54	38.22	35.57	172.83	-0.45	604.08	565.82	495.68	70.14	8.067	
9,900.00	9,814.35	9,851.96	9,814.45	38.63	35.91	173.01	-0.45	604.08	580.46	509.61	70.85	8.193	
10,000.00	9,913.26	9,950.86	9,913.36	39.04	36.24	173.18	-0.45	604.08	595.10	523.54	71.56	8.316	
10,100.00	10,012.16	10,049.77	10,012.26	39.45	36.58	173.34	-0.45	604.08	609.74	537.48	72.27	8.438	
10,200.00	10,111.07	10,148.68	10,111.17	39.86	36.92	173.50	-0.45	604.08	624.40	551.42	72.97	8.556	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 82H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,300.00	10,209.98	10,247.58	10,210.08	40.26	37.25	173.85	-0.45	604.08	639.05	565.37	73.68	8.673	
10,345.64	10,255.12	10,307.27	10,255.22	40.45	37.46	173.72	-0.45	604.08	645.74	571.68	74.06	8.719	
10,400.00	10,308.92	10,346.53	10,309.02	40.67	37.59	173.80	-0.45	604.08	653.46	579.06	74.39	8.784	
10,500.00	10,408.08	10,445.69	10,408.18	41.07	37.93	173.93	-0.45	604.08	666.33	591.22	75.10	8.872	
10,600.00	10,507.45	10,545.05	10,507.55	41.46	38.27	174.05	-0.45	604.08	677.47	601.66	75.81	8.936	
10,700.00	10,607.00	10,644.60	10,607.10	41.84	38.61	174.14	-0.45	604.08	686.90	610.38	76.52	8.977	
10,800.00	10,706.70	10,744.30	10,706.80	42.20	38.95	174.21	-0.45	604.08	694.59	617.37	77.22	8.995	
10,900.00	10,806.51	10,844.12	10,806.61	42.56	39.29	174.27	-0.45	604.08	700.56	622.63	77.93	8.990	
11,000.00	10,906.42	10,944.03	10,906.52	42.91	39.63	174.30	-0.45	604.08	704.79	626.16	78.63	8.964	
11,100.00	11,006.39	11,044.00	11,006.49	43.25	39.98	174.33	-0.45	604.08	707.28	627.96	79.32	8.916	
11,193.61	11,100.00	11,137.61	11,100.10	43.55	40.30	-102.27	-0.45	604.08	708.04	628.07	79.97	8.854	
11,200.00	11,106.39	11,143.99	11,106.49	43.57	40.32	-102.27	-0.45	604.08	708.04	628.03	80.01	8.849	
11,300.00	11,206.39	11,243.99	11,206.49	43.89	40.66	-102.27	-0.45	604.08	708.04	627.35	80.69	8.774	
11,400.00	11,306.39	11,343.99	11,306.49	44.20	41.01	-102.27	-0.45	604.08	708.04	626.66	81.38	8.701	
11,500.00	11,406.39	11,443.99	11,406.49	44.52	41.35	-102.27	-0.45	604.08	708.04	625.98	82.06	8.628	
11,600.00	11,506.39	11,543.99	11,506.49	44.84	41.70	-102.27	-0.45	604.08	708.04	625.30	82.74	8.557	
11,700.00	11,606.39	11,643.99	11,606.49	45.16	42.04	-102.27	-0.45	604.08	708.04	624.61	83.43	8.487	
11,800.00	11,706.39	11,743.99	11,706.49	45.48	42.39	-102.27	-0.45	604.08	708.04	623.93	84.11	8.418	
11,900.00	11,806.39	11,843.99	11,806.49	45.80	42.73	-102.27	-0.45	604.08	708.04	623.24	84.80	8.350	
12,000.00	11,906.39	11,943.99	11,906.49	46.12	43.08	-102.27	-0.45	604.08	708.04	622.56	85.48	8.283	
12,100.00	12,006.39	12,028.73	11,991.12	46.44	43.36	-102.49	-3.30	604.08	708.82	622.82	86.00	8.242	
12,145.61	12,052.00	12,064.23	12,026.32	46.58	43.47	-102.86	-7.94	604.08	710.14	623.95	86.19	8.239	
12,150.00	12,056.39	12,067.61	12,029.65	46.60	43.48	77.08	-8.49	604.08	710.30	624.09	86.21	8.239	
12,200.00	12,106.30	12,106.02	12,067.28	46.75	43.61	76.46	-16.17	604.08	712.02	625.64	86.38	8.242	
12,250.00	12,155.81	12,144.18	12,104.07	46.90	43.73	75.93	-26.27	604.08	713.58	627.04	86.54	8.246	
12,300.00	12,204.52	12,182.13	12,139.91	47.04	43.84	75.48	-38.73	604.08	714.92	628.26	86.66	8.250	
12,350.00	12,252.08	12,219.91	12,174.69	47.18	43.95	75.11	-53.46	604.08	716.04	629.28	86.76	8.253	
12,400.00	12,298.11	12,257.56	12,208.32	47.31	44.06	74.84	-70.39	604.08	716.89	630.06	86.84	8.256	
12,450.00	12,342.27	12,295.12	12,240.68	47.43	44.16	74.65	-89.44	604.08	717.48	630.58	86.90	8.256	
12,500.00	12,384.22	12,332.63	12,271.68	47.54	44.25	74.56	-110.54	604.08	717.78	630.83	86.95	8.255	
12,550.00	12,423.64	12,370.12	12,301.23	47.64	44.34	74.56	-133.61	604.08	717.79	630.79	87.00	8.251	
12,600.00	12,460.23	12,407.62	12,329.21	47.73	44.43	74.64	-158.57	604.08	717.51	630.46	87.05	8.243	
12,650.00	12,493.72	12,445.18	12,355.53	47.81	44.51	74.82	-185.35	604.08	716.95	629.84	87.11	8.230	
12,700.00	12,523.84	12,482.83	12,380.10	47.88	44.59	75.09	-213.86	604.08	716.11	628.92	87.19	8.213	
12,750.00	12,550.37	12,520.60	12,402.82	47.94	44.67	75.45	-244.03	604.08	715.02	627.73	87.29	8.191	
12,800.00	12,573.11	12,558.53	12,423.58	48.00	44.74	75.89	-275.77	604.08	713.69	626.26	87.42	8.163	
12,850.00	12,591.89	12,596.67	12,442.30	48.06	44.82	76.42	-308.99	604.08	712.15	624.56	87.59	8.130	
12,900.00	12,606.55	12,635.06	12,458.86	48.11	44.89	77.03	-343.61	604.08	710.43	622.63	87.80	8.091	
12,950.00	12,617.00	12,673.74	12,473.16	48.18	44.97	77.73	-379.54	604.08	708.58	620.53	88.05	8.048	
13,000.00	12,623.14	12,712.75	12,485.10	48.24	45.05	78.50	-416.68	604.08	706.62	618.29	88.33	8.000	
13,042.39	12,624.95	12,746.13	12,493.30	48.30	45.13	79.21	-449.03	604.08	704.91	616.32	88.60	7.956	
13,100.00	12,625.27	12,792.40	12,501.51	48.40	45.24	79.84	-494.55	604.08	703.08	614.14	88.95	7.904	
13,191.91	12,625.79	12,872.04	12,506.95	48.58	45.43	80.25	-569.59	604.08	702.02	612.64	89.38	7.855	
13,200.00	12,625.84	12,875.78	12,506.97	48.60	45.44	80.24	-577.68	604.08	702.02	612.62	89.40	7.852	
13,300.00	12,626.40	12,975.78	12,507.26	48.85	45.72	80.22	-677.68	604.08	702.07	612.15	89.93	7.807	
13,400.00	12,626.96	13,075.78	12,507.54	49.14	46.04	80.20	-777.68	604.08	702.12	611.59	90.53	7.755	
13,500.00	12,627.52	13,175.78	12,507.83	49.47	46.40	80.18	-877.68	604.08	702.17	610.94	91.22	7.697	
13,600.00	12,628.09	13,275.78	12,508.12	49.85	46.81	80.15	-977.68	604.08	702.21	610.22	91.99	7.633	
13,700.00	12,628.65	13,375.78	12,508.40	50.27	47.25	80.13	-1,077.68	604.08	702.26	609.41	92.85	7.564	
13,800.00	12,629.21	13,475.78	12,508.69	50.73	47.73	80.11	-1,177.68	604.08	702.31	608.53	93.78	7.489	
13,900.00	12,629.78	13,575.78	12,508.97	51.22	48.25	80.09	-1,277.68	604.08	702.36	607.57	94.78	7.410	
14,000.00	12,630.34	13,675.78	12,509.26	51.76	48.81	80.07	-1,377.67	604.08	702.40	606.54	95.86	7.327	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 92H - OH - PN2												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM												Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,100.00	12,630.90	13,775.78	12,509.55	52.33	49.40	80.04	-1,477.67	604.08	702.45	605.44	97.01	7.241	
14,200.00	12,631.46	13,875.78	12,509.83	52.93	50.02	80.02	-1,577.67	604.08	702.50	604.27	98.23	7.152	
14,300.00	12,632.03	13,975.78	12,510.12	53.57	50.68	80.00	-1,677.67	604.08	702.55	603.03	99.51	7.060	
14,400.00	12,632.59	14,075.78	12,510.40	54.24	51.37	79.98	-1,777.67	604.08	702.60	601.74	100.86	6.966	
14,500.00	12,633.15	14,175.78	12,510.69	54.93	52.09	79.95	-1,877.67	604.08	702.64	600.38	102.27	6.871	
14,600.00	12,633.72	14,275.78	12,510.98	55.66	52.84	79.93	-1,977.67	604.08	702.69	598.96	103.73	6.774	
14,700.00	12,634.28	14,375.78	12,511.26	56.42	53.62	79.91	-2,077.67	604.08	702.74	597.49	105.25	6.677	
14,800.00	12,634.84	14,475.78	12,511.55	57.20	54.42	79.89	-2,177.67	604.08	702.79	595.96	106.83	6.579	
14,900.00	12,635.40	14,575.77	12,511.84	58.00	55.25	79.87	-2,277.67	604.08	702.84	594.39	108.45	6.481	
15,000.00	12,635.97	14,675.77	12,512.12	58.83	56.10	79.84	-2,377.67	604.08	702.89	592.76	110.12	6.383	
15,100.00	12,636.53	14,775.77	12,512.41	59.69	56.98	79.82	-2,477.67	604.08	702.93	591.09	111.84	6.285	
15,200.00	12,637.09	14,875.77	12,512.69	60.56	57.88	79.80	-2,577.67	604.08	702.98	589.37	113.61	6.188	
15,300.00	12,637.66	14,975.77	12,512.98	61.46	58.80	79.78	-2,677.66	604.08	703.03	587.62	115.42	6.091	
15,400.00	12,638.22	15,075.77	12,513.27	62.38	59.74	79.75	-2,777.66	604.08	703.08	585.82	117.26	5.996	
15,500.00	12,638.78	15,175.77	12,513.55	63.32	60.70	79.73	-2,877.66	604.08	703.13	583.98	119.15	5.901	
15,600.00	12,639.34	15,275.77	12,513.84	64.27	61.67	79.71	-2,977.66	604.08	703.18	582.11	121.07	5.808	
15,700.00	12,639.91	15,375.77	12,514.12	65.24	62.67	79.69	-3,077.66	604.08	703.23	580.20	123.03	5.716	
15,800.00	12,640.47	15,475.77	12,514.41	66.23	63.68	79.67	-3,177.66	604.08	703.28	578.26	125.02	5.626	
15,900.00	12,641.03	15,575.77	12,514.70	67.24	64.71	79.64	-3,277.66	604.08	703.33	576.29	127.04	5.536	
16,000.00	12,641.60	15,675.77	12,514.98	68.26	65.75	79.62	-3,377.66	604.08	703.38	574.29	129.09	5.449	
16,100.00	12,642.16	15,775.77	12,515.27	69.29	66.81	79.60	-3,477.66	604.08	703.43	572.26	131.17	5.363	
16,200.00	12,642.72	15,875.77	12,515.55	70.34	67.88	79.58	-3,577.66	604.08	703.48	570.20	133.28	5.278	
16,300.00	12,643.28	15,975.77	12,515.84	71.41	68.96	79.55	-3,677.66	604.08	703.53	568.12	135.41	5.196	
16,400.00	12,643.85	16,075.77	12,516.13	72.48	70.06	79.53	-3,777.66	604.08	703.58	566.01	137.57	5.114	
16,500.00	12,644.41	16,175.77	12,516.41	73.57	71.17	79.51	-3,877.65	604.08	703.63	563.88	139.75	5.035	
16,600.00	12,644.97	16,275.77	12,516.70	74.67	72.29	79.49	-3,977.65	604.08	703.68	561.73	141.95	4.957	
16,700.00	12,645.54	16,375.77	12,516.98	75.78	73.42	79.47	-4,077.65	604.08	703.73	559.55	144.18	4.881	
16,800.00	12,646.10	16,475.77	12,517.27	76.90	74.57	79.44	-4,177.65	604.08	703.78	557.35	146.43	4.806	
16,900.00	12,646.66	16,575.77	12,517.56	78.03	75.72	79.42	-4,277.65	604.08	703.83	555.14	148.69	4.733	
17,000.00	12,647.22	16,675.77	12,517.84	79.18	76.88	79.40	-4,377.65	604.08	703.88	552.91	150.98	4.662	
17,100.00	12,647.79	16,775.77	12,518.13	80.33	78.05	79.38	-4,477.65	604.08	703.93	550.66	153.28	4.592	
17,200.00	12,648.35	16,875.77	12,518.41	81.49	79.23	79.36	-4,577.65	604.08	703.99	548.39	155.60	4.524	
17,300.00	12,648.91	16,975.77	12,518.70	82.66	80.42	79.33	-4,677.65	604.08	704.04	546.10	157.93	4.458	
17,400.00	12,649.48	17,075.77	12,518.99	83.83	81.61	79.31	-4,777.65	604.08	704.09	543.80	160.28	4.393	
17,500.00	12,650.04	17,175.76	12,519.27	85.02	82.81	79.29	-4,877.65	604.08	704.14	541.49	162.65	4.329	
17,600.00	12,650.60	17,275.76	12,519.56	86.21	84.02	79.27	-4,977.65	604.08	704.19	539.16	165.03	4.267	
17,700.00	12,651.16	17,375.76	12,519.84	87.41	85.24	79.24	-5,077.65	604.08	704.24	536.82	167.42	4.206	
17,800.00	12,651.73	17,475.76	12,520.13	88.62	86.46	79.22	-5,177.64	604.08	704.29	534.46	169.83	4.147	
17,900.00	12,652.29	17,575.76	12,520.42	89.83	87.69	79.20	-5,277.64	604.08	704.35	532.10	172.25	4.089	
18,000.00	12,652.85	17,675.76	12,520.70	91.05	88.93	79.18	-5,377.64	604.08	704.40	529.72	174.68	4.033	
18,100.00	12,653.42	17,775.76	12,520.99	92.28	90.17	79.16	-5,477.64	604.08	704.45	527.33	177.12	3.977	
18,200.00	12,653.98	17,875.76	12,521.27	93.51	91.42	79.13	-5,577.64	604.08	704.50	524.93	179.57	3.923	
18,300.00	12,654.54	17,975.76	12,521.56	94.75	92.67	79.11	-5,677.64	604.08	704.55	522.52	182.04	3.870	
18,400.00	12,655.10	18,075.76	12,521.85	95.99	93.93	79.09	-5,777.64	604.08	704.61	520.10	184.51	3.819	
18,500.00	12,655.67	18,175.76	12,522.13	97.24	95.20	79.07	-5,877.64	604.08	704.66	517.67	186.99	3.768	
18,600.00	12,656.23	18,275.76	12,522.42	98.49	96.46	79.05	-5,977.64	604.08	704.71	515.23	189.48	3.719	
18,700.00	12,656.79	18,375.76	12,522.70	99.75	97.74	79.02	-6,077.64	604.08	704.76	512.78	191.98	3.671	
18,800.00	12,657.36	18,475.76	12,522.99	101.01	99.01	79.00	-6,177.64	604.08	704.82	510.32	194.49	3.624	
18,900.00	12,657.92	18,575.76	12,523.28	102.28	100.29	78.98	-6,277.64	604.08	704.87	507.86	197.01	3.578	
19,000.00	12,658.48	18,675.76	12,523.56	103.55	101.58	78.96	-6,377.64	604.08	704.92	505.39	199.54	3.533	
19,100.00	12,659.04	18,775.76	12,523.85	104.83	102.87	78.94	-6,477.63	604.08	704.98	502.91	202.07	3.489	
19,200.00	12,659.61	18,875.76	12,524.13	106.11	104.16	78.91	-6,577.63	604.08	705.03	500.42	204.61	3.446	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 92H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance			Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		
19,300.00	12,660.17	18,975.76	12,524.42	107.39	105.46	78.89	-6,677.63	604.08	705.08	497.93	207.15	3.404	
19,400.00	12,660.73	19,075.76	12,524.71	108.68	106.76	78.87	-6,777.63	604.08	705.14	495.43	209.71	3.362	
19,500.00	12,661.30	19,175.76	12,524.99	109.97	108.06	78.85	-6,877.63	604.08	705.19	492.92	212.27	3.322	
19,600.00	12,661.86	19,275.76	12,525.28	111.26	109.37	78.83	-6,977.63	604.08	705.24	490.41	214.83	3.283	
19,700.00	12,662.42	19,375.76	12,525.56	112.56	110.68	78.80	-7,077.63	604.08	705.30	487.89	217.40	3.244	
19,800.00	12,662.98	19,475.76	12,525.85	113.86	111.99	78.78	-7,177.63	604.08	705.35	485.37	219.98	3.206	
19,900.00	12,663.55	19,575.76	12,526.14	115.17	113.31	78.76	-7,277.63	604.08	705.40	482.84	222.56	3.169	
20,000.00	12,664.11	19,675.76	12,526.42	116.48	114.63	78.74	-7,377.63	604.08	705.46	480.31	225.15	3.133	
20,100.00	12,664.67	19,775.75	12,526.71	117.79	115.95	78.71	-7,477.63	604.08	705.51	477.77	227.75	3.098	
20,200.00	12,665.24	19,875.75	12,526.99	119.10	117.27	78.69	-7,577.63	604.08	705.57	475.22	230.34	3.063	
20,300.00	12,665.80	19,975.75	12,527.28	120.42	118.60	78.67	-7,677.62	604.08	705.62	472.67	232.95	3.029	
20,400.00	12,666.36	20,075.75	12,527.57	121.73	119.93	78.65	-7,777.62	604.08	705.68	470.12	235.55	2.996	
20,500.00	12,666.92	20,175.75	12,527.85	123.06	121.26	78.63	-7,877.62	604.08	705.73	467.56	238.17	2.963	
20,600.00	12,667.49	20,275.75	12,528.14	124.38	122.60	78.60	-7,977.62	604.08	705.78	465.00	240.78	2.931	
20,700.00	12,668.05	20,375.75	12,528.42	125.71	123.93	78.58	-8,077.62	604.08	705.84	462.44	243.40	2.900	
20,800.00	12,668.61	20,475.75	12,528.71	127.04	125.27	78.56	-8,177.62	604.08	705.89	459.87	246.03	2.869	
20,900.00	12,669.18	20,575.75	12,529.00	128.37	126.61	78.54	-8,277.62	604.08	705.95	457.29	248.65	2.839	
21,000.00	12,669.74	20,675.75	12,529.28	129.70	127.95	78.52	-8,377.62	604.08	706.00	454.72	251.29	2.810	
21,100.00	12,670.30	20,775.75	12,529.57	131.03	129.30	78.49	-8,477.62	604.08	706.06	452.14	253.92	2.781	
21,200.00	12,670.86	20,875.75	12,529.85	132.37	130.64	78.47	-8,577.62	604.08	706.11	449.55	256.56	2.752	
21,300.00	12,671.43	20,975.75	12,530.14	133.71	131.99	78.45	-8,677.62	604.08	706.17	446.97	259.20	2.724	
21,400.00	12,671.99	21,075.75	12,530.43	135.05	133.34	78.43	-8,777.62	604.08	706.23	444.38	261.85	2.697	
21,500.00	12,672.55	21,175.75	12,530.71	136.40	134.69	78.41	-8,877.62	604.08	706.28	441.79	264.50	2.670	
21,600.00	12,673.12	21,275.75	12,531.00	137.74	136.05	78.38	-8,977.61	604.08	706.34	439.19	267.15	2.644	
21,700.00	12,673.68	21,375.75	12,531.29	139.09	137.40	78.36	-9,077.61	604.08	706.39	436.59	269.80	2.618	
21,800.00	12,674.24	21,475.75	12,531.57	140.44	138.76	78.34	-9,177.61	604.08	706.45	433.99	272.46	2.593	
21,900.00	12,674.80	21,575.75	12,531.86	141.79	140.12	78.32	-9,277.61	604.08	706.50	431.39	275.12	2.568	
22,000.00	12,675.37	21,675.75	12,532.14	143.14	141.48	78.30	-9,377.61	604.08	706.56	428.78	277.78	2.544	
22,100.00	12,675.93	21,775.75	12,532.43	144.49	142.84	78.27	-9,477.61	604.08	706.62	426.17	280.45	2.520	
22,200.00	12,676.49	21,875.75	12,532.72	145.85	144.20	78.25	-9,577.61	604.08	706.67	423.56	283.11	2.496	
22,300.00	12,677.06	21,975.75	12,533.00	147.20	145.57	78.23	-9,677.61	604.08	706.73	420.95	285.78	2.473	
22,400.00	12,677.62	22,075.75	12,533.29	148.56	146.93	78.21	-9,777.61	604.08	706.79	418.33	288.45	2.450	
22,500.00	12,678.18	22,175.75	12,533.57	149.92	148.30	78.19	-9,877.61	604.08	706.84	415.71	291.13	2.428	
22,600.00	12,678.74	22,275.75	12,533.86	151.28	149.67	78.16	-9,977.61	604.08	706.90	413.09	293.81	2.406	
22,645.43	12,679.00	22,321.17	12,533.99	151.90	150.29	78.15	-10,023.04	604.08	706.93	411.90	295.02	2.396 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 91H - OH - PN2												Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HRGM												Offset Well Error: 2.00 ft	
Reference		Offset		Semi Major Axis			Distance		Minimum Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation Factor		
0.00	0.00	0.10	0.10	2.00	2.00	-90.42	-0.87	-119.99	119.99				
100.00	100.00	100.10	100.10	2.00	2.00	-90.42	-0.87	-119.99	119.99	115.99	4.01	29.943	
200.00	200.00	200.10	200.10	2.06	2.06	-90.42	-0.87	-119.99	119.99	115.88	4.11	29.168	
300.00	300.00	300.10	300.10	2.17	2.17	-90.42	-0.87	-119.99	119.99	115.66	4.34	27.663	
400.00	400.00	400.10	400.10	2.33	2.33	-90.42	-0.87	-119.99	119.99	115.33	4.66	25.738	
500.00	500.00	500.10	500.10	2.53	2.53	-90.42	-0.87	-119.99	119.99	114.93	5.07	23.677	
600.00	600.00	600.10	600.10	2.77	2.77	-90.42	-0.87	-119.99	119.99	114.46	5.54	21.671	
700.00	700.00	700.10	700.10	3.03	3.03	-90.42	-0.87	-119.99	119.99	113.94	6.06	19.817	
800.00	800.00	800.10	800.10	3.31	3.31	-90.42	-0.87	-119.99	119.99	113.38	6.61	18.152	
900.00	900.00	900.10	900.10	3.60	3.60	-90.42	-0.87	-119.99	119.99	112.80	7.19	16.679	
1,000.00	1,000.00	1,000.10	1,000.10	3.90	3.90	-90.42	-0.87	-119.99	119.99	112.19	7.80	15.383	
1,100.00	1,100.00	1,100.10	1,100.10	4.21	4.21	-90.42	-0.87	-119.99	119.99	111.57	8.42	14.245	
1,200.00	1,200.00	1,200.10	1,200.10	4.53	4.53	-90.42	-0.87	-119.99	119.99	110.93	9.06	13.243	
1,300.00	1,300.00	1,300.10	1,300.10	4.85	4.85	-90.42	-0.87	-119.99	119.99	110.28	9.71	12.358	
1,400.00	1,400.00	1,400.10	1,400.10	5.18	5.18	-90.42	-0.87	-119.99	119.99	109.63	10.37	11.574	
1,500.00	1,500.00	1,500.10	1,500.10	5.52	5.52	-90.42	-0.87	-119.99	119.99	108.96	11.03	10.877 CC, ES	
1,600.00	1,599.99	1,600.09	1,600.09	5.84	5.85	-173.86	-0.87	-119.99	120.86	109.17	11.70	10.334	
1,700.00	1,699.96	1,700.06	1,700.06	6.17	6.19	-173.98	-0.87	-119.99	123.46	111.11	12.36	9.991	
1,800.00	1,799.86	1,800.04	1,799.96	6.50	6.53	-174.18	-0.87	-119.99	127.80	114.78	13.03	9.811	
1,900.00	1,899.68	1,901.01	1,901.01	6.83	6.87	-174.19	-0.28	-119.58	133.46	119.76	13.70	9.741	
2,000.00	1,999.37	2,002.20	2,002.16	7.17	7.22	-173.68	1.78	-118.15	139.84	125.46	14.38	9.726	
2,100.00	2,098.90	2,103.36	2,103.23	7.51	7.57	-172.72	5.30	-115.71	146.96	131.90	15.06	9.760	
2,200.00	2,198.26	2,204.45	2,204.14	7.86	7.91	-171.39	10.28	-112.25	154.87	139.13	15.74	9.840	
2,300.00	2,297.40	2,305.46	2,304.84	8.21	8.26	-169.75	16.71	-107.78	163.66	147.23	16.42	9.964	
2,347.97	2,344.88	2,353.87	2,353.05	8.39	8.43	-168.88	20.31	-105.27	168.20	151.45	16.76	10.039	
2,400.00	2,396.34	2,406.36	2,405.28	8.57	8.62	-167.88	24.60	-102.30	173.16	156.04	17.11	10.118	
2,500.00	2,495.25	2,506.19	2,504.53	8.94	8.97	-165.88	33.48	-96.13	182.40	164.59	17.81	10.241	
2,600.00	2,594.15	2,605.57	2,603.31	9.31	9.32	-164.05	42.40	-89.93	191.80	173.29	18.51	10.362	
2,700.00	2,693.06	2,704.95	2,702.10	9.68	9.67	-162.40	51.31	-83.74	201.37	182.16	19.21	10.481	
2,800.00	2,791.97	2,804.33	2,800.88	10.05	10.03	-160.90	60.22	-77.55	211.10	191.18	19.92	10.596	
2,900.00	2,890.87	2,903.71	2,899.67	10.43	10.39	-159.53	69.14	-71.36	220.96	200.33	20.64	10.707	
3,000.00	2,989.78	3,003.09	2,998.46	10.81	10.75	-158.28	78.05	-65.17	230.94	209.58	21.35	10.815	
3,100.00	3,088.69	3,102.47	3,097.24	11.19	11.11	-157.13	86.96	-58.97	241.01	218.94	22.07	10.919	
3,200.00	3,187.59	3,201.85	3,196.03	11.58	11.47	-156.08	95.88	-52.78	251.17	228.38	22.80	11.018	
3,300.00	3,286.50	3,301.23	3,294.81	11.96	11.84	-155.11	104.79	-46.59	261.41	237.89	23.52	11.113	
3,400.00	3,385.41	3,400.61	3,393.60	12.35	12.20	-154.21	113.70	-40.40	271.72	247.47	24.25	11.204	
3,500.00	3,484.31	3,499.76	3,492.16	12.74	12.57	-153.38	122.57	-34.24	282.10	257.12	24.98	11.292	
3,600.00	3,583.22	3,597.90	3,589.83	13.13	12.93	-152.84	130.44	-28.77	292.81	267.11	25.71	11.390	
3,700.00	3,682.13	3,696.01	3,687.61	13.52	13.28	-152.64	136.93	-24.27	303.97	277.54	26.43	11.501	
3,800.00	3,781.03	3,794.02	3,785.43	13.92	13.64	-152.75	142.03	-20.72	315.54	288.40	27.14	11.625	
3,900.00	3,879.94	3,891.90	3,883.20	14.31	13.99	-153.14	145.76	-18.13	327.54	299.69	27.85	11.759	
4,000.00	3,978.85	3,989.57	3,980.83	14.71	14.33	-153.78	148.11	-16.50	340.01	311.45	28.56	11.906	
4,100.00	4,077.75	4,086.98	4,078.23	15.10	14.68	-154.63	149.10	-15.81	352.98	323.72	29.25	12.066	
4,200.00	4,176.66	4,185.51	4,176.76	15.50	15.02	-155.60	149.13	-15.79	366.37	336.41	29.95	12.231	
4,300.00	4,275.57	4,284.42	4,275.67	15.90	15.37	-156.52	149.13	-15.79	379.87	349.21	30.66	12.391	
4,400.00	4,374.48	4,383.33	4,374.58	16.29	15.71	-157.37	149.13	-15.79	393.46	362.10	31.36	12.546	
4,500.00	4,473.38	4,482.23	4,473.48	16.69	16.06	-158.17	149.13	-15.79	407.13	375.07	32.07	12.697	
4,600.00	4,572.29	4,581.14	4,572.39	17.09	16.41	-158.92	149.13	-15.79	420.88	388.11	32.77	12.843	
4,700.00	4,671.20	4,680.05	4,671.30	17.49	16.75	-159.61	149.13	-15.79	434.69	401.21	33.48	12.984	
4,800.00	4,770.10	4,778.95	4,770.20	17.89	17.10	-160.27	149.13	-15.79	448.56	414.37	34.19	13.121	
4,900.00	4,869.01	4,877.86	4,869.11	18.29	17.45	-160.89	149.13	-15.79	462.48	427.59	34.89	13.254	
5,000.00	4,967.92	4,976.77	4,968.02	18.70	17.80	-161.47	149.13	-15.79	476.45	440.85	35.60	13.382	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design													SeaWolf 1-12 - Fed 91H - OH - PN2		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,100.00	5,066.82	5,075.67	5,066.92	19.10	18.15	-162.01	149.13	-15.79	490.47	454.16	36.31	13.507				
5,200.00	5,165.73	5,174.58	5,165.83	19.50	18.49	-162.53	149.13	-15.79	504.53	467.51	37.02	13.628				
5,300.00	5,264.64	5,273.49	5,264.74	19.90	18.84	-163.02	149.13	-15.79	518.63	480.90	37.73	13.745				
5,400.00	5,363.54	5,372.39	5,363.64	20.31	19.19	-163.48	149.13	-15.79	532.76	494.32	38.44	13.858				
5,500.00	5,462.45	5,471.30	5,462.55	20.71	19.54	-163.92	149.13	-15.79	546.93	507.77	39.16	13.968				
5,600.00	5,561.36	5,570.21	5,561.46	21.11	19.89	-164.34	149.13	-15.79	561.13	521.26	39.87	14.074				
5,700.00	5,660.26	5,669.11	5,660.36	21.52	20.24	-164.73	149.13	-15.79	575.35	534.77	40.58	14.178				
5,800.00	5,759.17	5,768.02	5,759.27	21.92	20.59	-165.11	149.13	-15.79	589.60	548.30	41.30	14.278				
5,900.00	5,858.08	5,866.93	5,858.18	22.33	20.94	-165.47	149.13	-15.79	603.87	561.86	42.01	14.375				
6,000.00	5,956.98	5,965.83	5,957.08	22.73	21.29	-165.81	149.13	-15.79	618.17	575.44	42.72	14.469				
6,100.00	6,055.89	6,064.74	6,055.99	23.14	21.64	-166.14	149.13	-15.79	632.48	589.04	43.44	14.561				
6,200.00	6,154.80	6,163.65	6,154.90	23.54	21.99	-166.45	149.13	-15.79	646.82	602.66	44.15	14.650				
6,300.00	6,253.70	6,262.55	6,253.80	23.95	22.34	-166.75	149.13	-15.79	661.17	616.30	44.87	14.736				
6,400.00	6,352.61	6,361.46	6,352.71	24.35	22.69	-167.04	149.13	-15.79	675.54	629.96	45.58	14.820				
6,500.00	6,451.52	6,460.37	6,451.62	24.76	23.04	-167.31	149.13	-15.79	689.92	643.63	46.30	14.901				
6,600.00	6,550.42	6,559.28	6,550.52	25.16	23.39	-167.58	149.13	-15.79	704.33	657.31	47.02	14.981				
6,700.00	6,649.33	6,658.18	6,649.43	25.57	23.75	-167.83	149.13	-15.79	718.74	671.01	47.73	15.058				
6,800.00	6,748.24	6,757.09	6,748.34	25.98	24.10	-168.07	149.13	-15.79	733.17	684.72	48.45	15.133				
6,900.00	6,847.15	6,856.00	6,847.25	26.38	24.45	-168.30	149.13	-15.79	747.61	698.44	49.17	15.206				
7,000.00	6,946.05	6,954.90	6,946.15	26.79	24.80	-168.53	149.13	-15.79	762.06	712.18	49.88	15.277				
7,100.00	7,044.96	7,053.81	7,045.06	27.20	25.15	-168.75	149.13	-15.79	776.52	725.92	50.60	15.346				
7,200.00	7,143.87	7,152.72	7,143.97	27.60	25.50	-168.95	149.13	-15.79	791.00	739.68	51.32	15.413				
7,300.00	7,242.77	7,251.62	7,242.87	28.01	25.85	-169.15	149.13	-15.79	805.48	753.44	52.04	15.479				
7,400.00	7,341.68	7,350.53	7,341.78	28.42	26.21	-169.35	149.13	-15.79	819.97	767.22	52.76	15.543				
7,500.00	7,440.59	7,449.44	7,440.69	28.82	26.56	-169.54	149.13	-15.79	834.47	781.00	53.47	15.605				
7,600.00	7,539.49	7,548.34	7,539.59	29.23	26.91	-169.72	149.13	-15.79	848.98	794.79	54.19	15.666				
7,700.00	7,638.40	7,647.25	7,638.50	29.64	27.26	-169.89	149.13	-15.79	863.50	808.59	54.91	15.725				
7,800.00	7,737.31	7,746.16	7,737.41	30.05	27.61	-170.06	149.13	-15.79	878.03	822.40	55.63	15.783				
7,900.00	7,836.21	7,845.06	7,836.31	30.45	27.96	-170.22	149.13	-15.79	892.56	836.21	56.35	15.839				
8,000.00	7,935.12	7,943.97	7,935.22	30.86	28.32	-170.38	149.13	-15.79	907.10	850.03	57.07	15.894				
8,100.00	8,034.03	8,042.88	8,034.13	31.27	28.67	-170.53	149.13	-15.79	921.65	863.86	57.79	15.948				
8,200.00	8,132.93	8,141.78	8,133.03	31.68	29.02	-170.68	149.13	-15.79	936.20	877.69	58.51	16.001				
8,300.00	8,231.84	8,240.69	8,231.94	32.09	29.37	-170.83	149.13	-15.79	950.76	891.53	59.23	16.052				
8,400.00	8,330.75	8,339.60	8,330.85	32.50	29.73	-170.97	149.13	-15.79	965.32	905.37	59.95	16.102				
8,500.00	8,429.65	8,438.50	8,429.75	32.90	30.08	-171.10	149.13	-15.79	979.89	919.22	60.67	16.151				
8,600.00	8,528.56	8,537.41	8,528.66	33.31	30.43	-171.23	149.13	-15.79	994.47	933.08	61.39	16.199				
8,700.00	8,627.47	8,636.32	8,627.57	33.72	30.78	-171.36	149.13	-15.79	1,009.05	946.93	62.11	16.245				
8,800.00	8,726.37	8,735.22	8,726.47	34.13	31.14	-171.48	149.13	-15.79	1,023.63	960.80	62.83	16.291				
8,900.00	8,825.28	8,834.13	8,825.38	34.54	31.49	-171.60	149.13	-15.79	1,038.22	974.67	63.55	16.336				
9,000.00	8,924.19	8,933.04	8,924.29	34.95	31.84	-171.72	149.13	-15.79	1,052.81	988.54	64.28	16.380				
9,100.00	9,023.10	9,031.95	9,023.20	35.36	32.19	-171.84	149.13	-15.79	1,067.41	1,002.41	65.00	16.422				
9,200.00	9,122.00	9,130.85	9,122.10	35.76	32.55	-171.95	149.13	-15.79	1,082.01	1,016.29	65.72	16.464				
9,300.00	9,220.91	9,229.76	9,221.01	36.17	32.90	-172.05	149.13	-15.79	1,096.62	1,030.18	66.44	16.505				
9,400.00	9,319.82	9,328.67	9,319.92	36.58	33.25	-172.16	149.13	-15.79	1,111.23	1,044.07	67.16	16.545				
9,500.00	9,418.72	9,427.57	9,418.82	36.99	33.60	-172.26	149.13	-15.79	1,125.84	1,057.96	67.88	16.585				
9,600.00	9,517.63	9,526.48	9,517.73	37.40	33.96	-172.36	149.13	-15.79	1,140.46	1,071.85	68.61	16.623				
9,700.00	9,616.54	9,625.39	9,616.64	37.81	34.31	-172.46	149.13	-15.79	1,155.08	1,085.75	69.33	16.661				
9,800.00	9,715.44	9,724.29	9,715.54	38.22	34.66	-172.55	149.13	-15.79	1,169.70	1,099.65	70.05	16.698				
9,900.00	9,814.35	9,823.20	9,814.45	38.63	35.02	-172.65	149.13	-15.79	1,184.33	1,113.55	70.77	16.734				
10,000.00	9,913.26	9,922.11	9,913.36	39.04	35.37	-172.74	149.13	-15.79	1,198.95	1,127.46	71.50	16.770				
10,100.00	10,012.16	10,021.01	10,012.26	39.45	35.72	-172.82	149.13	-15.79	1,213.59	1,141.37	72.22	16.804				
10,200.00	10,111.07	10,119.92	10,111.17	39.86	36.08	-172.91	149.13	-15.79	1,228.22	1,155.28	72.94	16.838				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services

Anticollision Report



Company: Devon Energy Corporation
 Project: Lea Co., NM
 Reference Site: SeaWolf 1-12
 Site Error: 0.00 ft
 Reference Well: Fed 92H
 Well Error: 2.00 ft
 Reference Wellbore: OH
 Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
 TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: RyanUSA_Compass
 Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 91H - OH - PN2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HRGM													Offset Well Error: 2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,300.00	10,209.98	10,218.83	10,210.08	40.26	36.43	-172.99	149.13	-15.79	1,242.86	1,169.19	73.66	16.872	
10,345.64	10,255.12	10,263.97	10,255.22	40.45	36.59	-173.03	149.13	-15.79	1,249.54	1,175.54	73.99	16.887	
10,400.00	10,308.92	10,317.77	10,309.02	40.67	36.78	-173.08	149.13	-15.79	1,257.24	1,182.86	74.39	16.901	
10,500.00	10,408.08	10,416.93	10,408.18	41.07	37.14	-173.17	149.13	-15.79	1,270.09	1,194.99	75.11	16.910	
10,600.00	10,507.45	10,516.30	10,507.55	41.46	37.49	-173.24	149.13	-15.79	1,281.23	1,205.40	75.83	16.896	
10,700.00	10,607.00	10,615.85	10,607.10	41.84	37.85	-173.30	149.13	-15.79	1,290.63	1,214.09	76.55	16.861	
10,800.00	10,706.70	10,715.55	10,706.80	42.20	38.20	-173.35	149.13	-15.79	1,298.32	1,221.06	77.26	16.804	
10,900.00	10,806.51	10,815.36	10,806.61	42.56	38.56	-173.39	149.13	-15.79	1,304.27	1,226.30	77.97	16.727	
11,000.00	10,906.42	10,915.27	10,906.52	42.91	38.92	-173.42	149.13	-15.79	1,308.49	1,229.81	78.68	16.630	
11,100.00	11,006.39	11,015.24	11,006.49	43.25	39.27	-173.43	149.13	-15.79	1,310.98	1,231.59	79.39	16.513	
11,193.61	11,100.00	11,108.85	11,100.10	43.55	39.61	-90.04	149.13	-15.79	1,311.74	1,231.70	80.05	16.388	
11,200.00	11,106.39	11,115.24	11,106.49	43.57	39.63	-90.04	149.13	-15.79	1,311.74	1,231.65	80.09	16.379	
11,300.00	11,206.39	11,215.24	11,206.49	43.89	39.99	-90.04	149.13	-15.79	1,311.74	1,230.96	80.78	16.238	
11,400.00	11,306.39	11,315.24	11,306.49	44.20	40.34	-90.04	149.13	-15.79	1,311.74	1,230.27	81.47	16.101	
11,500.00	11,406.39	11,415.24	11,406.49	44.52	40.70	-90.04	149.13	-15.79	1,311.74	1,229.58	82.16	15.965	
11,600.00	11,506.39	11,515.24	11,506.49	44.84	41.06	-90.04	149.13	-15.79	1,311.74	1,228.89	82.86	15.832	
11,700.00	11,606.39	11,615.24	11,606.49	45.16	41.42	-90.04	149.13	-15.79	1,311.74	1,228.19	83.55	15.700	
11,800.00	11,706.39	11,715.24	11,706.49	45.48	41.77	-90.04	149.13	-15.79	1,311.74	1,227.50	84.24	15.571	
11,900.00	11,806.39	11,815.24	11,806.49	45.80	42.13	-90.04	149.13	-15.79	1,311.74	1,226.81	84.94	15.444	
12,000.00	11,906.39	11,915.24	11,906.49	46.12	42.49	-90.04	149.13	-15.79	1,311.74	1,226.11	85.63	15.319	
12,100.00	12,006.39	12,015.24	12,006.49	46.44	42.85	-90.04	149.13	-15.79	1,311.74	1,225.42	86.32	15.196	
12,145.61	12,052.00	12,060.85	12,052.10	46.58	43.01	-90.04	149.13	-15.79	1,311.74	1,225.10	86.64	15.140	
12,150.00	12,056.39	12,065.24	12,056.49	46.60	43.02	89.96	149.13	-15.79	1,311.74	1,225.07	86.67	15.135	
12,177.19	12,083.56	12,107.59	12,083.66	46.68	43.18	90.00	149.13	-15.79	1,311.74	1,224.83	86.91	15.093	
12,200.00	12,106.30	12,115.15	12,106.40	46.75	43.20	90.07	149.13	-15.79	1,311.74	1,224.73	87.01	15.075	
12,250.00	12,155.81	12,164.66	12,155.91	46.90	43.38	90.37	149.13	-15.79	1,311.77	1,224.42	87.35	15.018	
12,300.00	12,204.52	12,213.37	12,204.62	47.04	43.55	90.83	149.13	-15.79	1,311.89	1,224.21	87.68	14.962	
12,350.00	12,252.08	12,260.93	12,252.18	47.18	43.72	91.44	149.13	-15.79	1,312.21	1,224.21	88.00	14.911	
12,400.00	12,298.11	12,306.96	12,298.21	47.31	43.89	92.16	149.13	-15.79	1,312.88	1,224.57	88.32	14.866	
12,450.00	12,342.27	12,351.12	12,342.37	47.43	44.05	92.94	149.13	-15.79	1,314.07	1,225.45	88.62	14.828	
12,500.00	12,384.22	12,406.93	12,384.32	47.54	44.25	93.74	149.13	-15.79	1,315.96	1,227.00	88.96	14.793	
12,550.00	12,423.64	12,432.49	12,423.74	47.64	44.34	94.51	149.13	-15.79	1,318.77	1,229.59	89.18	14.787	
12,600.00	12,460.23	12,469.08	12,460.33	47.73	44.47	95.20	149.13	-15.79	1,322.72	1,233.28	89.44	14.789	
12,650.00	12,493.72	12,502.57	12,493.82	47.81	44.59	95.74	149.13	-15.79	1,328.00	1,238.32	89.68	14.808	
12,700.00	12,523.84	12,532.69	12,523.94	47.88	44.70	96.10	149.13	-15.79	1,334.81	1,244.90	89.90	14.847	
12,750.00	12,550.37	12,559.22	12,550.47	47.94	44.79	96.21	149.13	-15.79	1,343.29	1,253.19	90.10	14.908	
12,800.00	12,573.11	12,581.96	12,573.21	48.00	44.87	96.04	149.13	-15.79	1,353.58	1,263.30	90.28	14.993	
12,850.00	12,591.89	12,600.74	12,591.99	48.06	44.94	95.54	149.13	-15.79	1,365.75	1,275.31	90.43	15.103	
12,900.00	12,606.55	12,615.40	12,606.65	48.11	44.99	94.69	149.13	-15.79	1,379.81	1,289.26	90.55	15.238	
12,950.00	12,617.00	12,625.85	12,617.10	48.18	45.03	93.46	149.13	-15.79	1,395.75	1,305.10	90.65	15.398	
13,000.00	12,623.14	12,631.99	12,623.24	48.24	45.05	91.83	149.13	-15.79	1,413.47	1,322.76	90.71	15.582	
13,042.39	12,624.95	12,633.80	12,625.05	48.30	45.06	90.14	149.13	-15.79	1,429.78	1,339.04	90.74	15.757	
13,100.00	12,625.27	12,634.12	12,625.37	48.40	45.06	90.15	149.13	-15.79	1,453.66	1,362.90	90.77	16.015	
13,200.00	12,625.84	13,817.66	13,332.73	48.60	47.99	118.32	-573.73	-15.79	1,490.05	1,400.31	89.74	16.604	
13,300.00	12,626.40	13,917.66	13,333.24	48.85	48.26	118.32	-673.73	-15.79	1,490.02	1,399.70	90.32	16.497	
13,400.00	12,626.96	14,017.66	13,333.75	49.14	48.57	118.31	-773.73	-15.79	1,490.00	1,399.02	90.97	16.378	
13,500.00	12,627.52	14,117.66	13,334.26	49.47	48.92	118.31	-873.73	-15.79	1,489.97	1,398.27	91.70	16.249	
13,600.00	12,628.09	14,217.66	13,334.77	49.85	49.30	118.31	-973.73	-15.79	1,489.95	1,397.46	92.49	16.109	
13,700.00	12,628.65	14,317.66	13,335.28	50.27	49.73	118.31	-1,073.73	-15.79	1,489.92	1,396.57	93.35	15.960	
13,800.00	12,629.21	14,417.66	13,335.79	50.73	50.19	118.31	-1,173.73	-15.79	1,489.90	1,395.62	94.28	15.803	
13,900.00	12,629.78	14,517.66	13,336.30	51.22	50.69	118.30	-1,273.72	-15.79	1,489.87	1,394.60	95.27	15.639	
14,000.00	12,630.34	14,617.66	13,336.81	51.76	51.22	118.30	-1,373.72	-15.79	1,489.85	1,393.53	96.32	15.467	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 91H - OH - PN2												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM												Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,100.00	12,630.90	14,717.66	13,337.32	52.33	51.79	118.30	-1,473.72	-15.79	1,489.82	1,392.39	97.43	15.291	
14,200.00	12,631.46	14,817.66	13,337.83	52.93	52.39	118.30	-1,573.72	-15.79	1,489.80	1,391.20	98.60	15.109	
14,300.00	12,632.03	14,917.66	13,338.35	53.57	53.03	118.30	-1,673.72	-15.79	1,489.77	1,389.94	99.83	14.923	
14,400.00	12,632.59	15,017.66	13,338.86	54.24	53.69	118.30	-1,773.72	-15.79	1,489.75	1,388.64	101.11	14.734	
14,500.00	12,633.15	15,117.66	13,339.37	54.93	54.39	118.29	-1,873.72	-15.79	1,489.72	1,387.28	102.44	14.542	
14,600.00	12,633.72	15,217.66	13,339.88	55.66	55.11	118.29	-1,973.71	-15.79	1,489.70	1,385.88	103.82	14.349	
14,700.00	12,634.28	15,317.66	13,340.39	56.42	55.86	118.29	-2,073.71	-15.79	1,489.67	1,384.42	105.25	14.154	
14,800.00	12,634.84	15,417.66	13,340.90	57.20	56.64	118.29	-2,173.71	-15.79	1,489.65	1,382.93	106.72	13.958	
14,900.00	12,635.40	15,517.66	13,341.41	58.00	57.44	118.29	-2,273.71	-15.79	1,489.62	1,381.38	108.24	13.762	
15,000.00	12,635.97	15,617.66	13,341.92	58.83	58.26	118.29	-2,373.71	-15.79	1,489.60	1,379.80	109.80	13.566	
15,100.00	12,636.53	15,717.66	13,342.43	59.69	59.11	118.28	-2,473.71	-15.79	1,489.57	1,378.17	111.41	13.371	
15,200.00	12,637.09	15,817.66	13,342.94	60.56	59.98	118.28	-2,573.71	-15.79	1,489.55	1,376.50	113.05	13.177	
15,300.00	12,637.66	15,917.66	13,343.45	61.46	60.88	118.28	-2,673.71	-15.79	1,489.52	1,374.80	114.72	12.984	
15,400.00	12,638.22	16,017.66	13,343.96	62.38	61.79	118.28	-2,773.70	-15.79	1,489.50	1,373.06	116.44	12.792	
15,500.00	12,638.78	16,117.66	13,344.47	63.32	62.72	118.28	-2,873.70	-15.79	1,489.48	1,371.29	118.18	12.603	
15,600.00	12,639.34	16,217.66	13,344.98	64.27	63.67	118.27	-2,973.70	-15.79	1,489.45	1,369.49	119.96	12.416	
15,700.00	12,639.91	16,317.66	13,345.49	65.24	64.64	118.27	-3,073.70	-15.79	1,489.43	1,367.65	121.77	12.231	
15,800.00	12,640.47	16,417.66	13,346.00	66.23	65.63	118.27	-3,173.70	-15.79	1,489.40	1,365.79	123.61	12.049	
15,900.00	12,641.03	16,517.66	13,346.51	67.24	66.63	118.27	-3,273.70	-15.79	1,489.38	1,363.89	125.48	11.869	
16,000.00	12,641.60	16,617.66	13,347.02	68.26	67.65	118.27	-3,373.70	-15.79	1,489.35	1,361.97	127.38	11.692	
16,100.00	12,642.16	16,717.66	13,347.53	69.29	68.68	118.27	-3,473.70	-15.79	1,489.33	1,360.03	129.30	11.518	
16,200.00	12,642.72	16,817.66	13,348.04	70.34	69.73	118.26	-3,573.69	-15.79	1,489.30	1,358.06	131.25	11.347	
16,300.00	12,643.28	16,917.66	13,348.55	71.41	70.79	118.26	-3,673.69	-15.79	1,489.28	1,356.06	133.22	11.179	
16,400.00	12,643.85	17,017.66	13,349.06	72.48	71.86	118.26	-3,773.69	-15.79	1,489.25	1,354.04	135.21	11.014	
16,500.00	12,644.41	17,117.66	13,349.57	73.57	72.95	118.26	-3,873.69	-15.79	1,489.23	1,352.00	137.22	10.853	
16,600.00	12,644.97	17,217.66	13,350.08	74.67	74.05	118.26	-3,973.69	-15.79	1,489.20	1,349.94	139.26	10.694	
16,700.00	12,645.54	17,317.66	13,350.59	75.78	75.16	118.25	-4,073.69	-15.79	1,489.18	1,347.86	141.31	10.538	
16,800.00	12,646.10	17,417.66	13,351.11	76.90	76.28	118.25	-4,173.69	-15.79	1,489.15	1,345.76	143.39	10.385	
16,900.00	12,646.66	17,517.66	13,351.62	78.03	77.41	118.25	-4,273.68	-15.79	1,489.13	1,343.65	145.48	10.236	
17,000.00	12,647.22	17,617.66	13,352.13	79.18	78.55	118.25	-4,373.68	-15.79	1,489.10	1,341.51	147.59	10.089	
17,100.00	12,647.79	17,717.66	13,352.64	80.33	79.70	118.25	-4,473.68	-15.79	1,489.08	1,339.36	149.72	9.946	
17,200.00	12,648.35	17,817.66	13,353.15	81.49	80.86	118.25	-4,573.68	-15.79	1,489.05	1,337.19	151.86	9.805	
17,300.00	12,648.91	17,917.66	13,353.66	82.66	82.03	118.24	-4,673.68	-15.79	1,489.03	1,335.01	154.02	9.668	
17,400.00	12,649.48	18,017.66	13,354.17	83.83	83.20	118.24	-4,773.68	-15.79	1,489.00	1,332.81	156.19	9.533	
17,500.00	12,650.04	18,117.66	13,354.68	85.02	84.39	118.24	-4,873.68	-15.79	1,488.98	1,330.60	158.38	9.401	
17,600.00	12,650.60	18,217.66	13,355.19	86.21	85.58	118.24	-4,973.68	-15.79	1,488.95	1,328.38	160.58	9.272	
17,700.00	12,651.16	18,317.66	13,355.70	87.41	86.78	118.24	-5,073.67	-15.79	1,488.93	1,326.14	162.79	9.146	
17,800.00	12,651.73	18,417.66	13,356.21	88.62	87.98	118.24	-5,173.67	-15.79	1,488.90	1,323.89	165.02	9.023	
17,900.00	12,652.29	18,517.66	13,356.72	89.83	89.19	118.23	-5,273.67	-15.79	1,488.88	1,321.62	167.26	8.902	
18,000.00	12,652.85	18,617.66	13,357.23	91.05	90.41	118.23	-5,373.67	-15.79	1,488.85	1,319.35	169.51	8.784	
18,100.00	12,653.42	18,717.66	13,357.74	92.28	91.64	118.23	-5,473.67	-15.79	1,488.83	1,317.06	171.77	8.668	
18,200.00	12,653.98	18,817.66	13,358.25	93.51	92.87	118.23	-5,573.67	-15.79	1,488.80	1,314.77	174.04	8.555	
18,300.00	12,654.54	18,917.66	13,358.76	94.75	94.11	118.23	-5,673.67	-15.79	1,488.78	1,312.46	176.32	8.444	
18,400.00	12,655.10	19,017.66	13,359.27	95.99	95.35	118.22	-5,773.66	-15.79	1,488.76	1,310.15	178.61	8.335	
18,500.00	12,655.67	19,117.66	13,359.78	97.24	96.60	118.22	-5,873.66	-15.79	1,488.73	1,307.82	180.91	8.229	
18,600.00	12,656.23	19,217.66	13,360.29	98.49	97.85	118.22	-5,973.66	-15.79	1,488.71	1,305.49	183.22	8.125	
18,700.00	12,656.79	19,317.66	13,360.80	99.75	99.11	118.22	-6,073.66	-15.79	1,488.68	1,303.14	185.54	8.024	
18,800.00	12,657.36	19,417.66	13,361.31	101.01	100.37	118.22	-6,173.66	-15.79	1,488.66	1,300.79	187.87	7.924	
18,900.00	12,657.92	19,517.66	13,361.82	102.28	101.64	118.22	-6,273.66	-15.79	1,488.63	1,298.43	190.20	7.827	
19,000.00	12,658.48	19,617.66	13,362.33	103.55	102.91	118.21	-6,373.66	-15.79	1,488.61	1,296.06	192.54	7.731	
19,100.00	12,659.04	19,717.66	13,362.84	104.83	104.19	118.21	-6,473.66	-15.79	1,488.58	1,293.69	194.89	7.638	
19,200.00	12,659.61	19,817.66	13,363.36	106.11	105.47	118.21	-6,573.65	-15.79	1,488.56	1,291.30	197.25	7.546	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Nabors Corporate Services
Anticollision Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Offset Design SeaWolf 1-12 - Fed 91H - OH - PN2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM														Offset Well Error:	2.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
19,300.00	12,660.17	19,917.66	13,363.87	107.39	106.75	118.21	-6,673.65	-15.79	1,488.53	1,288.91	199.62	7.457			
19,400.00	12,660.73	20,017.66	13,364.38	108.68	108.04	118.21	-6,773.65	-15.79	1,488.51	1,286.52	201.99	7.369			
19,500.00	12,661.30	20,117.66	13,364.89	109.97	109.33	118.21	-6,873.65	-15.79	1,488.48	1,284.12	204.37	7.283			
19,600.00	12,661.86	20,217.66	13,365.40	111.26	110.63	118.20	-6,973.65	-15.79	1,488.46	1,281.71	206.75	7.199			
19,700.00	12,662.42	20,317.66	13,365.91	112.56	111.92	118.20	-7,073.65	-15.79	1,488.43	1,279.29	209.14	7.117			
19,800.00	12,662.98	20,417.66	13,366.42	113.86	113.23	118.20	-7,173.65	-15.79	1,488.41	1,276.87	211.54	7.036			
19,900.00	12,663.55	20,517.66	13,366.93	115.17	114.53	118.20	-7,273.65	-15.79	1,488.38	1,274.44	213.94	6.957			
20,000.00	12,664.11	20,617.66	13,367.44	116.48	115.84	118.20	-7,373.64	-15.79	1,488.36	1,272.01	216.35	6.879			
20,100.00	12,664.67	20,717.66	13,367.95	117.79	117.15	118.19	-7,473.64	-15.79	1,488.33	1,269.57	218.76	6.803			
20,200.00	12,665.24	20,817.66	13,368.46	119.10	118.46	118.19	-7,573.64	-15.79	1,488.31	1,267.13	221.18	6.729			
20,300.00	12,665.80	20,917.66	13,368.97	120.42	119.78	118.19	-7,673.64	-15.79	1,488.28	1,264.68	223.60	6.656			
20,400.00	12,666.36	21,017.66	13,369.48	121.73	121.10	118.19	-7,773.64	-15.79	1,488.26	1,262.23	226.03	6.584			
20,500.00	12,666.92	21,117.66	13,369.99	123.06	122.42	118.19	-7,873.64	-15.79	1,488.23	1,259.77	228.47	6.514			
20,600.00	12,667.49	21,217.66	13,370.50	124.38	123.74	118.19	-7,973.64	-15.79	1,488.21	1,257.31	230.90	6.445			
20,700.00	12,668.05	21,317.66	13,371.01	125.71	125.07	118.18	-8,073.63	-15.79	1,488.19	1,254.84	233.34	6.378			
20,800.00	12,668.61	21,417.66	13,371.52	127.04	126.40	118.18	-8,173.63	-15.79	1,488.16	1,252.37	235.79	6.311			
20,900.00	12,669.18	21,517.66	13,372.03	128.37	127.73	118.18	-8,273.63	-15.79	1,488.14	1,249.89	238.24	6.246			
21,000.00	12,669.74	21,617.66	13,372.54	129.70	129.07	118.18	-8,373.63	-15.79	1,488.11	1,247.42	240.70	6.183			
21,100.00	12,670.30	21,717.66	13,373.05	131.03	130.40	118.18	-8,473.63	-15.79	1,488.09	1,244.93	243.15	6.120			
21,200.00	12,670.86	21,817.66	13,373.56	132.37	131.74	118.17	-8,573.63	-15.79	1,488.06	1,242.45	245.62	6.058			
21,300.00	12,671.43	21,917.66	13,374.07	133.71	133.08	118.17	-8,673.63	-15.79	1,488.04	1,239.96	248.08	5.998			
21,400.00	12,671.99	22,017.66	13,374.58	135.05	134.42	118.17	-8,773.63	-15.79	1,488.01	1,237.46	250.55	5.939			
21,500.00	12,672.55	22,117.66	13,375.09	136.40	135.76	118.17	-8,873.62	-15.79	1,487.99	1,234.96	253.02	5.881			
21,600.00	12,673.12	22,217.66	13,375.60	137.74	137.11	118.17	-8,973.62	-15.79	1,487.96	1,232.46	255.50	5.824			
21,700.00	12,673.68	22,317.66	13,376.12	139.09	138.46	118.17	-9,073.62	-15.79	1,487.94	1,229.96	257.98	5.768			
21,800.00	12,674.24	22,417.66	13,376.63	140.44	139.80	118.16	-9,173.62	-15.79	1,487.91	1,227.45	260.46	5.713			
21,900.00	12,674.80	22,517.66	13,377.14	141.79	141.16	118.16	-9,273.62	-15.79	1,487.89	1,224.94	262.95	5.659			
22,000.00	12,675.37	22,617.66	13,377.65	143.14	142.51	118.16	-9,373.62	-15.79	1,487.86	1,222.43	265.44	5.605			
22,100.00	12,675.93	22,717.66	13,378.16	144.49	143.86	118.16	-9,473.62	-15.79	1,487.84	1,219.91	267.93	5.553			
22,200.00	12,676.49	22,817.66	13,378.67	145.85	145.22	118.16	-9,573.61	-15.79	1,487.81	1,217.39	270.42	5.502			
22,300.00	12,677.06	22,917.66	13,379.18	147.20	146.57	118.16	-9,673.61	-15.79	1,487.79	1,214.87	272.92	5.451			
22,400.00	12,677.62	23,017.66	13,379.69	148.56	147.93	118.15	-9,773.61	-15.79	1,487.76	1,212.35	275.42	5.402			
22,500.00	12,678.18	23,117.66	13,380.20	149.92	149.29	118.15	-9,873.61	-15.79	1,487.74	1,209.82	277.92	5.353			
22,600.00	12,678.74	23,217.66	13,380.71	151.28	150.65	118.15	-9,973.61	-15.79	1,487.71	1,207.29	280.43	5.305			
22,645.43	12,679.00	23,263.09	13,380.94	151.90	151.27	118.15	-10,019.04	-15.79	1,487.70	1,206.14	281.56	5.284 SF			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

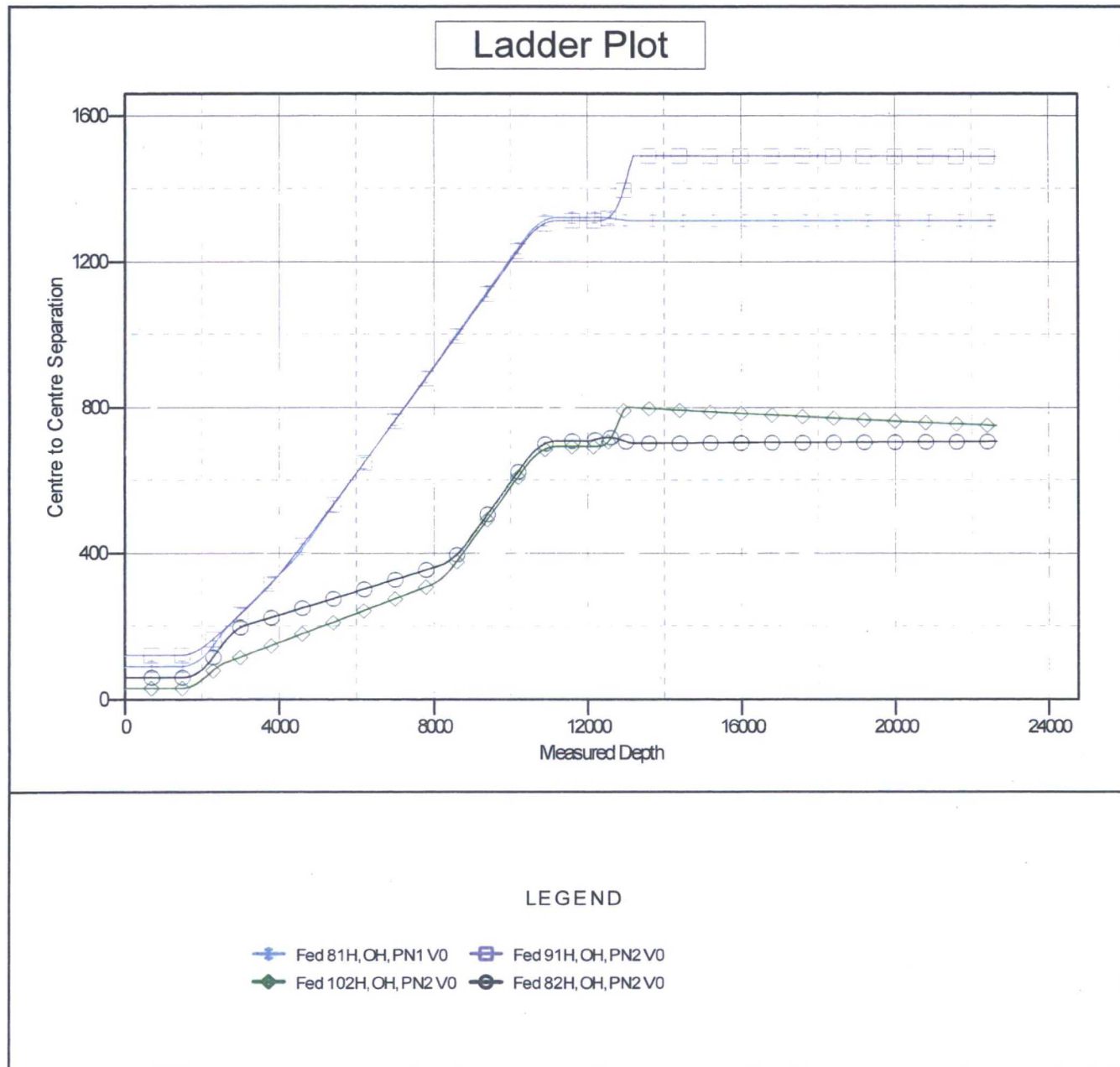


Company: Devon Energy Corporation
Project: Lea Co., NM
Reference Site: SeaWolf 1-12
Site Error: 0.00 ft
Reference Well: Fed 92H
Well Error: 2.00 ft
Reference Wellbore: OH
Reference Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Reference Depths are relative to RT=32 @ 3350.50ft (Nabors X-04)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: Fed 92H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.43°



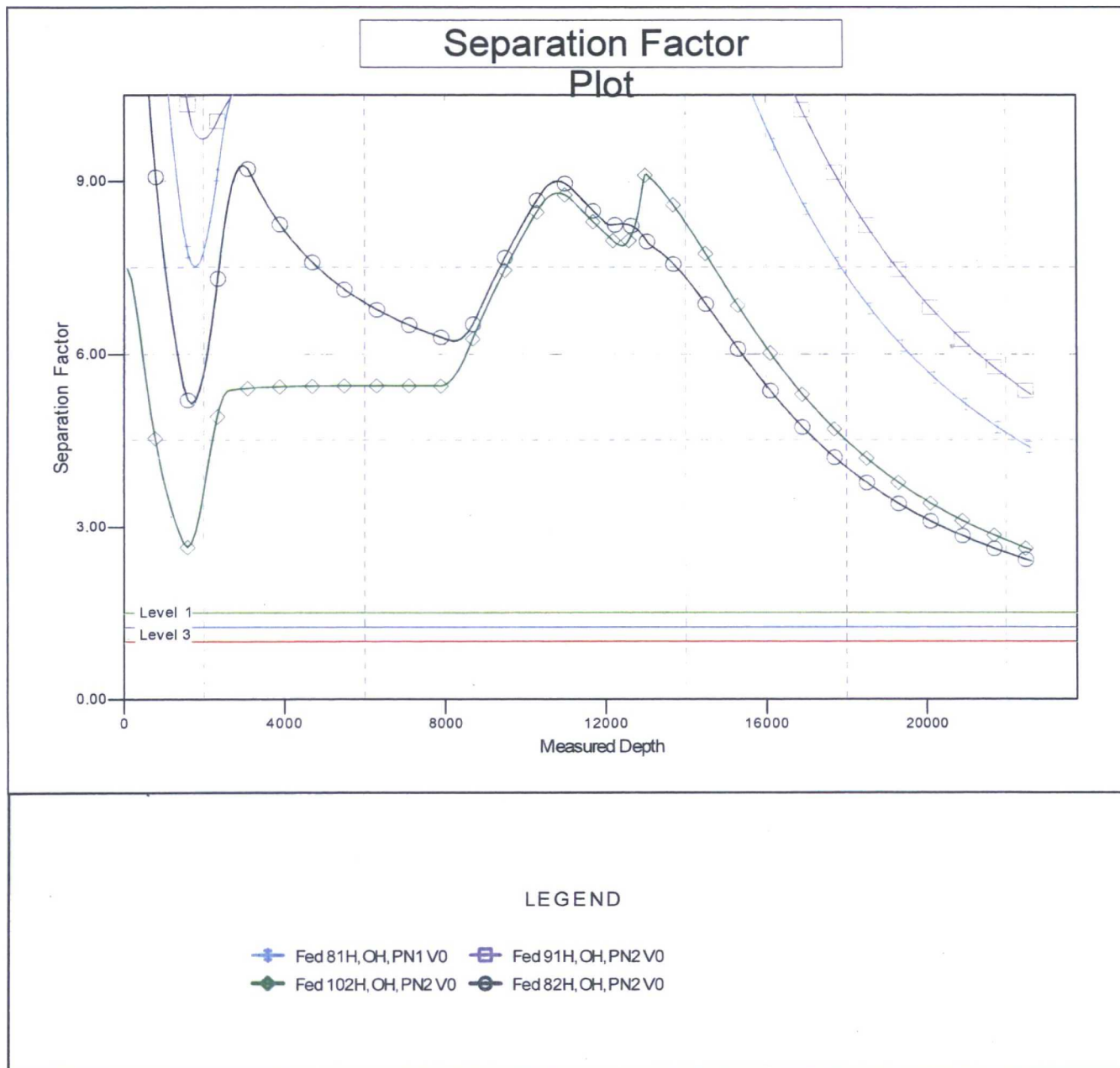


Company: Devon Energy Corporation
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Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: RyanUSA_Compass
Offset TVD Reference: Offset Datum

Reference Depths are relative to RT=32 @ 3350.50ft (Nabors X-04)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: Fed 92H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.43°





devon

Devon Energy Corporation

Lea Co., NM
SeaWolf 1-12
Fed 92H

OH

Plan: PN2

HOBBS OCD

FEB 06 2018

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Standard Planning Report

14 August, 2017



NABORS

Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	SeaWolf 1-12		
Site Position:		Northing:	393,463.690 usft
From:	Map	Easting:	789,088.210 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 45.07085 N
		Longitude:	103° 32' 0.34763 W
		Grid Convergence:	0.42 °

Well	Fed 92H		
Well Position	+N/-S	0.69 ft	Northing: 393,464.380 usft
	+E/-W	89.97 ft	Easting: 789,178.180 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	Latitude: 32° 4' 45.07107 N
			Longitude: 103° 31' 59.30193 W
			Ground Level: 3,318.50 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	8/9/2017	(°) 6.80
			Dip Angle (°) 59.82
			Field Strength (nT) 47,934.20000000

Design	PN2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction (°) 180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	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	
2,347.97	8.48	83.40	2,344.88	7.20	62.22	1.00	1.00	0.00	83.40	
10,345.64	8.48	83.40	10,255.12	142.80	1,233.73	0.00	0.00	0.00	0.00	
11,193.61	0.00	0.00	11,100.00	150.00	1,295.95	1.00	-1.00	0.00	180.00	
12,145.61	0.00	0.00	12,052.00	150.00	1,295.95	0.00	0.00	0.00	0.00	
13,042.39	89.68	180.00	12,624.95	-419.73	1,295.95	10.00	10.00	20.07	180.00	
22,645.43	89.68	180.00	12,679.00	-10,022.62	1,295.95	0.00	0.00	0.00	0.00	Fed 92H_BHL

Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Fed 92H
 RT=32 @ 3350.50ft (Nabors X-04)
 RT=32 @ 3350.50ft (Nabors X-04)
 Grid
 Minimum Curvature

Planned Survey

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)
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
200.00	0.00	0.00	200.00	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
400.00	0.00	0.00	400.00	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
600.00	0.00	0.00	600.00	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
780.00	0.00	0.00	780.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
800.00	0.00	0.00	800.00	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
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
10 3/4"									
1,000.00	0.00	0.00	1,000.00	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
1,128.00	0.00	0.00	1,128.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
1,200.00	0.00	0.00	1,200.00	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
1,400.00	0.00	0.00	1,400.00	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
1,600.00	1.00	83.40	1,599.99	0.10	0.87	-0.10	1.00	1.00	0.00
1,700.00	2.00	83.40	1,699.96	0.40	3.47	-0.40	1.00	1.00	0.00
1,800.00	3.00	83.40	1,799.86	0.90	7.80	-0.90	1.00	1.00	0.00
1,900.00	4.00	83.40	1,899.68	1.60	13.86	-1.60	1.00	1.00	0.00
2,000.00	5.00	83.40	1,999.37	2.51	21.66	-2.51	1.00	1.00	0.00
2,100.00	6.00	83.40	2,098.90	3.61	31.18	-3.61	1.00	1.00	0.00
2,200.00	7.00	83.40	2,198.26	4.91	42.42	-4.91	1.00	1.00	0.00
2,300.00	8.00	83.40	2,297.40	6.41	55.39	-6.41	1.00	1.00	0.00
2,347.97	8.48	83.40	2,344.88	7.20	62.22	-7.20	1.00	1.00	0.00
2,400.00	8.48	83.40	2,396.34	8.08	69.84	-8.08	0.00	0.00	0.00
2,500.00	8.48	83.40	2,495.25	9.78	84.49	-9.78	0.00	0.00	0.00
2,600.00	8.48	83.40	2,594.15	11.47	99.14	-11.47	0.00	0.00	0.00
2,700.00	8.48	83.40	2,693.06	13.17	113.79	-13.17	0.00	0.00	0.00
2,800.00	8.48	83.40	2,791.97	14.87	128.43	-14.87	0.00	0.00	0.00
2,900.00	8.48	83.40	2,890.87	16.56	143.08	-16.56	0.00	0.00	0.00
3,000.00	8.48	83.40	2,989.78	18.26	157.73	-18.26	0.00	0.00	0.00
3,100.00	8.48	83.40	3,088.69	19.95	172.38	-19.95	0.00	0.00	0.00
3,200.00	8.48	83.40	3,187.59	21.65	187.03	-21.65	0.00	0.00	0.00
3,300.00	8.48	83.40	3,286.50	23.34	201.67	-23.34	0.00	0.00	0.00
3,400.00	8.48	83.40	3,385.41	25.04	216.32	-25.04	0.00	0.00	0.00
3,500.00	8.48	83.40	3,484.31	26.73	230.97	-26.73	0.00	0.00	0.00
3,600.00	8.48	83.40	3,583.22	28.43	245.62	-28.43	0.00	0.00	0.00
3,700.00	8.48	83.40	3,682.13	30.12	260.27	-30.12	0.00	0.00	0.00
3,800.00	8.48	83.40	3,781.03	31.82	274.92	-31.82	0.00	0.00	0.00
3,900.00	8.48	83.40	3,879.94	33.52	289.56	-33.52	0.00	0.00	0.00
4,000.00	8.48	83.40	3,978.85	35.21	304.21	-35.21	0.00	0.00	0.00
4,100.00	8.48	83.40	4,077.75	36.91	318.86	-36.91	0.00	0.00	0.00
4,200.00	8.48	83.40	4,176.66	38.60	333.51	-38.60	0.00	0.00	0.00
4,300.00	8.48	83.40	4,275.57	40.30	348.16	-40.30	0.00	0.00	0.00
4,400.00	8.48	83.40	4,374.48	41.99	362.80	-41.99	0.00	0.00	0.00
4,500.00	8.48	83.40	4,473.38	43.69	377.45	-43.69	0.00	0.00	0.00

Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

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)
4,600.00	8.48	83.40	4,572.29	45.38	392.10	-45.38	0.00	0.00	0.00
4,700.00	8.48	83.40	4,671.20	47.08	406.75	-47.08	0.00	0.00	0.00
4,800.00	8.48	83.40	4,770.10	48.77	421.40	-48.77	0.00	0.00	0.00
4,881.79	8.48	83.40	4,851.00	50.16	433.38	-50.16	0.00	0.00	0.00
Base of Salt									
4,900.00	8.48	83.40	4,869.01	50.47	436.05	-50.47	0.00	0.00	0.00
5,000.00	8.48	83.40	4,967.92	52.17	450.69	-52.17	0.00	0.00	0.00
5,100.00	8.48	83.40	5,066.82	53.86	465.34	-53.86	0.00	0.00	0.00
5,126.47	8.48	83.40	5,093.00	54.31	469.22	-54.31	0.00	0.00	0.00
Delaware									
5,200.00	8.48	83.40	5,165.73	55.56	479.99	-55.56	0.00	0.00	0.00
5,300.00	8.48	83.40	5,264.64	57.25	494.64	-57.25	0.00	0.00	0.00
5,400.00	8.48	83.40	5,363.54	58.95	509.29	-58.95	0.00	0.00	0.00
5,500.00	8.48	83.40	5,462.45	60.64	523.93	-60.64	0.00	0.00	0.00
5,600.00	8.48	83.40	5,561.36	62.34	538.58	-62.34	0.00	0.00	0.00
5,700.00	8.48	83.40	5,660.26	64.03	553.23	-64.03	0.00	0.00	0.00
5,800.00	8.48	83.40	5,759.17	65.73	567.88	-65.73	0.00	0.00	0.00
5,900.00	8.48	83.40	5,858.08	67.42	582.53	-67.42	0.00	0.00	0.00
6,000.00	8.48	83.40	5,956.98	69.12	597.18	-69.12	0.00	0.00	0.00
6,100.00	8.48	83.40	6,055.89	70.82	611.82	-70.82	0.00	0.00	0.00
6,200.00	8.48	83.40	6,154.80	72.51	626.47	-72.51	0.00	0.00	0.00
6,300.00	8.48	83.40	6,253.70	74.21	641.12	-74.21	0.00	0.00	0.00
6,400.00	8.48	83.40	6,352.61	75.90	655.77	-75.90	0.00	0.00	0.00
6,500.00	8.48	83.40	6,451.52	77.60	670.42	-77.60	0.00	0.00	0.00
6,600.00	8.48	83.40	6,550.42	79.29	685.06	-79.29	0.00	0.00	0.00
6,700.00	8.48	83.40	6,649.33	80.99	699.71	-80.99	0.00	0.00	0.00
6,800.00	8.48	83.40	6,748.24	82.68	714.36	-82.68	0.00	0.00	0.00
6,900.00	8.48	83.40	6,847.15	84.38	729.01	-84.38	0.00	0.00	0.00
7,000.00	8.48	83.40	6,946.05	86.07	743.66	-86.07	0.00	0.00	0.00
7,100.00	8.48	83.40	7,044.96	87.77	758.31	-87.77	0.00	0.00	0.00
7,200.00	8.48	83.40	7,143.87	89.47	772.95	-89.47	0.00	0.00	0.00
7,300.00	8.48	83.40	7,242.77	91.16	787.60	-91.16	0.00	0.00	0.00
7,400.00	8.48	83.40	7,341.68	92.86	802.25	-92.86	0.00	0.00	0.00
7,500.00	8.48	83.40	7,440.59	94.55	816.90	-94.55	0.00	0.00	0.00
7,600.00	8.48	83.40	7,539.49	96.25	831.55	-96.25	0.00	0.00	0.00
7,700.00	8.48	83.40	7,638.40	97.94	846.19	-97.94	0.00	0.00	0.00
7,800.00	8.48	83.40	7,737.31	99.64	860.84	-99.64	0.00	0.00	0.00
7,900.00	8.48	83.40	7,836.21	101.33	875.49	-101.33	0.00	0.00	0.00
8,000.00	8.48	83.40	7,935.12	103.03	890.14	-103.03	0.00	0.00	0.00
8,100.00	8.48	83.40	8,034.03	104.72	904.79	-104.72	0.00	0.00	0.00
8,200.00	8.48	83.40	8,132.93	106.42	919.44	-106.42	0.00	0.00	0.00
8,300.00	8.48	83.40	8,231.84	108.12	934.08	-108.12	0.00	0.00	0.00
8,400.00	8.48	83.40	8,330.75	109.81	948.73	-109.81	0.00	0.00	0.00
8,500.00	8.48	83.40	8,429.65	111.51	963.38	-111.51	0.00	0.00	0.00
8,600.00	8.48	83.40	8,528.56	113.20	978.03	-113.20	0.00	0.00	0.00
8,700.00	8.48	83.40	8,627.47	114.90	992.68	-114.90	0.00	0.00	0.00
8,800.00	8.48	83.40	8,726.37	116.59	1,007.32	-116.59	0.00	0.00	0.00
8,900.00	8.48	83.40	8,825.28	118.29	1,021.97	-118.29	0.00	0.00	0.00
9,000.00	8.48	83.40	8,924.19	119.98	1,036.62	-119.98	0.00	0.00	0.00
9,100.00	8.48	83.40	9,023.10	121.68	1,051.27	-121.68	0.00	0.00	0.00
9,200.00	8.48	83.40	9,122.00	123.37	1,065.92	-123.37	0.00	0.00	0.00
9,224.26	8.48	83.40	9,146.00	123.79	1,069.47	-123.79	0.00	0.00	0.00

Lower Brushy Canyon

Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

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)
9,300.00	8.48	83.40	9,220.91	125.07	1,080.57	-125.07	0.00	0.00	0.00
9,400.00	8.48	83.40	9,319.82	126.77	1,095.21	-126.77	0.00	0.00	0.00
9,406.25	8.48	83.40	9,326.00	126.87	1,096.13	-126.87	0.00	0.00	0.00
1st BSPG Lime									
9,500.00	8.48	83.40	9,418.72	128.46	1,109.86	-128.46	0.00	0.00	0.00
9,600.00	8.48	83.40	9,517.63	130.16	1,124.51	-130.16	0.00	0.00	0.00
9,700.00	8.48	83.40	9,616.54	131.85	1,139.16	-131.85	0.00	0.00	0.00
9,800.00	8.48	83.40	9,715.44	133.55	1,153.81	-133.55	0.00	0.00	0.00
9,900.00	8.48	83.40	9,814.35	135.24	1,168.45	-135.24	0.00	0.00	0.00
10,000.00	8.48	83.40	9,913.26	136.94	1,183.10	-136.94	0.00	0.00	0.00
10,100.00	8.48	83.40	10,012.16	138.63	1,197.75	-138.63	0.00	0.00	0.00
10,200.00	8.48	83.40	10,111.07	140.33	1,212.40	-140.33	0.00	0.00	0.00
10,300.00	8.48	83.40	10,209.98	142.02	1,227.05	-142.02	0.00	0.00	0.00
10,345.64	8.48	83.40	10,255.12	142.80	1,233.73	-142.80	0.00	0.00	0.00
10,354.62	8.39	83.40	10,264.00	142.95	1,235.04	-142.95	1.00	-1.00	0.00
1st BSPG Sand									
10,400.00	7.94	83.40	10,308.92	143.69	1,241.44	-143.69	1.00	-1.00	0.00
10,500.00	6.94	83.40	10,408.08	145.18	1,254.30	-145.18	1.00	-1.00	0.00
10,600.00	5.94	83.40	10,507.45	146.47	1,265.43	-146.47	1.00	-1.00	0.00
10,631.71	5.62	83.40	10,539.00	146.83	1,268.60	-146.83	1.00	-1.00	0.00
2nd BSPG Lime									
10,700.00	4.94	83.40	10,607.00	147.56	1,274.84	-147.56	1.00	-1.00	0.00
10,800.00	3.94	83.40	10,706.70	148.45	1,282.53	-148.45	1.00	-1.00	0.00
10,900.00	2.94	83.40	10,806.51	149.14	1,288.48	-149.14	1.00	-1.00	0.00
10,905.49	2.88	83.40	10,812.00	149.17	1,288.76	-149.17	1.00	-1.00	0.00
2nd BSPG Sand									
11,000.00	1.94	83.40	10,906.42	149.62	1,292.70	-149.62	1.00	-1.00	0.00
11,100.00	0.94	83.40	11,006.39	149.91	1,295.19	-149.91	1.00	-1.00	0.00
11,193.61	0.00	0.00	11,100.00	150.00	1,295.95	-150.00	1.00	-1.00	0.00
11,200.00	0.00	0.00	11,106.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,300.00	0.00	0.00	11,206.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,399.61	0.00	0.00	11,306.00	150.00	1,295.95	-150.00	0.00	0.00	0.00
3rd BSPG Lime									
11,400.00	0.00	0.00	11,306.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,500.00	0.00	0.00	11,406.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,600.00	0.00	0.00	11,506.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,700.00	0.00	0.00	11,606.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,800.00	0.00	0.00	11,706.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,900.00	0.00	0.00	11,806.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
11,983.61	0.00	0.00	11,890.00	150.00	1,295.95	-150.00	0.00	0.00	0.00
3rd BSPG Sand									
12,000.00	0.00	0.00	11,906.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
12,100.00	0.00	0.00	12,006.39	150.00	1,295.95	-150.00	0.00	0.00	0.00
12,145.61	0.00	0.00	12,052.00	150.00	1,295.95	-150.00	0.00	0.00	0.00
Fed 92H_KOP									
12,150.00	0.44	180.00	12,056.39	149.98	1,295.95	-149.98	10.00	10.00	0.00
12,163.09	1.75	180.00	12,069.47	149.73	1,295.95	-149.73	10.00	10.00	0.00
Start Build 10.00									
12,200.00	5.44	180.00	12,106.30	147.42	1,295.95	-147.42	10.00	10.00	0.00
12,250.00	10.44	180.00	12,155.81	140.52	1,295.95	-140.52	10.00	10.00	0.00
12,300.00	15.44	180.00	12,204.52	129.33	1,295.95	-129.33	10.00	10.00	0.00
12,350.00	20.44	180.00	12,252.08	113.93	1,295.95	-113.93	10.00	10.00	0.00
12,400.00	25.44	180.00	12,298.11	94.45	1,295.95	-94.45	10.00	10.00	0.00



Database: RyanUSA_Compass
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Project: Lea Co., NM
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Survey Calculation Method: Minimum Curvature

Planned Survey									
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)
12,450.00	30.44	180.00	12,342.27	71.03	1,295.95	-71.03	10.00	10.00	0.00
12,489.98	34.44	180.00	12,376.00	49.59	1,295.95	-49.59	10.00	10.00	0.00
Wolfcamp									
12,500.00	35.44	180.00	12,384.22	43.85	1,295.95	-43.85	10.00	10.00	0.00
12,523.40	37.78	180.00	12,403.00	29.90	1,295.95	-29.90	10.00	10.00	0.00
Wolfcamp X									
12,550.00	40.44	180.00	12,423.64	13.12	1,295.95	-13.12	10.00	10.00	0.00
12,600.00	45.44	180.00	12,460.23	-20.93	1,295.95	20.93	10.00	10.00	0.00
12,650.00	50.44	180.00	12,493.72	-58.04	1,295.95	58.04	10.00	10.00	0.00
12,658.37	51.28	180.00	12,499.00	-64.53	1,295.95	64.53	10.00	10.00	0.00
Wolfcamp Y									
12,700.00	55.44	180.00	12,523.84	-97.92	1,295.95	97.92	10.00	10.00	0.00
12,750.00	60.44	180.00	12,550.37	-140.29	1,295.95	140.29	10.00	10.00	0.00
12,770.14	62.45	180.00	12,560.00	-157.97	1,295.95	157.97	10.00	10.00	0.00
Wolfcamp 100									
12,800.00	65.44	180.00	12,573.11	-184.80	1,295.95	184.80	10.00	10.00	0.00
12,850.00	70.44	180.00	12,591.89	-231.12	1,295.95	231.12	10.00	10.00	0.00
12,900.00	75.44	180.00	12,606.55	-278.91	1,295.95	278.91	10.00	10.00	0.00
12,950.00	80.44	180.00	12,617.00	-327.79	1,295.95	327.79	10.00	10.00	0.00
13,000.00	85.44	180.00	12,623.14	-377.39	1,295.95	377.39	10.00	10.00	0.00
13,042.39	89.68	180.00	12,624.95	-419.73	1,295.95	419.73	10.00	10.00	0.00
Fed 92H_EOC									
13,059.87	89.68	180.00	12,625.05	-437.21	1,295.95	437.21	0.00	0.00	0.00
EOC: Hold Inc & Azm									
13,100.00	89.68	180.00	12,625.27	-477.34	1,295.95	477.34	0.00	0.00	0.00
13,200.00	89.68	180.00	12,625.84	-577.34	1,295.95	577.34	0.00	0.00	0.00
13,300.00	89.68	180.00	12,626.40	-677.34	1,295.95	677.34	0.00	0.00	0.00
13,400.00	89.68	180.00	12,626.96	-777.34	1,295.95	777.34	0.00	0.00	0.00
13,500.00	89.68	180.00	12,627.52	-877.34	1,295.95	877.34	0.00	0.00	0.00
13,600.00	89.68	180.00	12,628.09	-977.33	1,295.95	977.33	0.00	0.00	0.00
13,700.00	89.68	180.00	12,628.65	-1,077.33	1,295.95	1,077.33	0.00	0.00	0.00
13,800.00	89.68	180.00	12,629.21	-1,177.33	1,295.95	1,177.33	0.00	0.00	0.00
13,900.00	89.68	180.00	12,629.78	-1,277.33	1,295.95	1,277.33	0.00	0.00	0.00
14,000.00	89.68	180.00	12,630.34	-1,377.33	1,295.95	1,377.33	0.00	0.00	0.00
14,100.00	89.68	180.00	12,630.90	-1,477.33	1,295.95	1,477.33	0.00	0.00	0.00
14,200.00	89.68	180.00	12,631.46	-1,577.32	1,295.95	1,577.32	0.00	0.00	0.00
14,295.16	89.68	180.00	12,632.00	-1,672.48	1,295.95	1,672.48	0.00	0.00	0.00
Wolfcamp 110									
14,300.00	89.68	180.00	12,632.03	-1,677.32	1,295.95	1,677.32	0.00	0.00	0.00
14,400.00	89.68	180.00	12,632.59	-1,777.32	1,295.95	1,777.32	0.00	0.00	0.00
14,500.00	89.68	180.00	12,633.15	-1,877.32	1,295.95	1,877.32	0.00	0.00	0.00
14,600.00	89.68	180.00	12,633.72	-1,977.32	1,295.95	1,977.32	0.00	0.00	0.00
14,700.00	89.68	180.00	12,634.28	-2,077.32	1,295.95	2,077.32	0.00	0.00	0.00
14,800.00	89.68	180.00	12,634.84	-2,177.32	1,295.95	2,177.32	0.00	0.00	0.00
14,900.00	89.68	180.00	12,635.40	-2,277.31	1,295.95	2,277.31	0.00	0.00	0.00
15,000.00	89.68	180.00	12,635.97	-2,377.31	1,295.95	2,377.31	0.00	0.00	0.00
15,100.00	89.68	180.00	12,636.53	-2,477.31	1,295.95	2,477.31	0.00	0.00	0.00
15,200.00	89.68	180.00	12,637.09	-2,577.31	1,295.95	2,577.31	0.00	0.00	0.00
15,300.00	89.68	180.00	12,637.66	-2,677.31	1,295.95	2,677.31	0.00	0.00	0.00
15,400.00	89.68	180.00	12,638.22	-2,777.31	1,295.95	2,777.31	0.00	0.00	0.00
15,500.00	89.68	180.00	12,638.78	-2,877.30	1,295.95	2,877.30	0.00	0.00	0.00
15,600.00	89.68	180.00	12,639.34	-2,977.30	1,295.95	2,977.30	0.00	0.00	0.00
15,700.00	89.68	180.00	12,639.91	-3,077.30	1,295.95	3,077.30	0.00	0.00	0.00



Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

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)
15,800.00	89.68	180.00	12,640.47	-3,177.30	1,295.95	3,177.30	0.00	0.00	0.00
15,900.00	89.68	180.00	12,641.03	-3,277.30	1,295.95	3,277.30	0.00	0.00	0.00
16,000.00	89.68	180.00	12,641.60	-3,377.30	1,295.95	3,377.30	0.00	0.00	0.00
16,100.00	89.68	180.00	12,642.16	-3,477.29	1,295.95	3,477.29	0.00	0.00	0.00
16,200.00	89.68	180.00	12,642.72	-3,577.29	1,295.95	3,577.29	0.00	0.00	0.00
16,300.00	89.68	180.00	12,643.28	-3,677.29	1,295.95	3,677.29	0.00	0.00	0.00
16,400.00	89.68	180.00	12,643.85	-3,777.29	1,295.95	3,777.29	0.00	0.00	0.00
16,500.00	89.68	180.00	12,644.41	-3,877.29	1,295.95	3,877.29	0.00	0.00	0.00
16,600.00	89.68	180.00	12,644.97	-3,977.29	1,295.95	3,977.29	0.00	0.00	0.00
16,700.00	89.68	180.00	12,645.54	-4,077.29	1,295.95	4,077.29	0.00	0.00	0.00
16,800.00	89.68	180.00	12,646.10	-4,177.28	1,295.95	4,177.28	0.00	0.00	0.00
16,900.00	89.68	180.00	12,646.66	-4,277.28	1,295.95	4,277.28	0.00	0.00	0.00
17,000.00	89.68	180.00	12,647.22	-4,377.28	1,295.95	4,377.28	0.00	0.00	0.00
17,100.00	89.68	180.00	12,647.79	-4,477.28	1,295.95	4,477.28	0.00	0.00	0.00
17,200.00	89.68	180.00	12,648.35	-4,577.28	1,295.95	4,577.28	0.00	0.00	0.00
17,300.00	89.68	180.00	12,648.91	-4,677.28	1,295.95	4,677.28	0.00	0.00	0.00
17,400.00	89.68	180.00	12,649.48	-4,777.27	1,295.95	4,777.27	0.00	0.00	0.00
17,500.00	89.68	180.00	12,650.04	-4,877.27	1,295.95	4,877.27	0.00	0.00	0.00
17,600.00	89.68	180.00	12,650.60	-4,977.27	1,295.95	4,977.27	0.00	0.00	0.00
17,700.00	89.68	180.00	12,651.16	-5,077.27	1,295.95	5,077.27	0.00	0.00	0.00
17,800.00	89.68	180.00	12,651.73	-5,177.27	1,295.95	5,177.27	0.00	0.00	0.00
17,900.00	89.68	180.00	12,652.29	-5,277.27	1,295.95	5,277.27	0.00	0.00	0.00
18,000.00	89.68	180.00	12,652.85	-5,377.26	1,295.95	5,377.26	0.00	0.00	0.00
18,100.00	89.68	180.00	12,653.42	-5,477.26	1,295.95	5,477.26	0.00	0.00	0.00
18,200.00	89.68	180.00	12,653.98	-5,577.26	1,295.95	5,577.26	0.00	0.00	0.00
18,300.00	89.68	180.00	12,654.54	-5,677.26	1,295.95	5,677.26	0.00	0.00	0.00
18,400.00	89.68	180.00	12,655.10	-5,777.26	1,295.95	5,777.26	0.00	0.00	0.00
18,500.00	89.68	180.00	12,655.67	-5,877.26	1,295.95	5,877.26	0.00	0.00	0.00
18,600.00	89.68	180.00	12,656.23	-5,977.26	1,295.95	5,977.26	0.00	0.00	0.00
18,700.00	89.68	180.00	12,656.79	-6,077.25	1,295.95	6,077.25	0.00	0.00	0.00
18,800.00	89.68	180.00	12,657.36	-6,177.25	1,295.95	6,177.25	0.00	0.00	0.00
18,900.00	89.68	180.00	12,657.92	-6,277.25	1,295.95	6,277.25	0.00	0.00	0.00
19,000.00	89.68	180.00	12,658.48	-6,377.25	1,295.95	6,377.25	0.00	0.00	0.00
19,100.00	89.68	180.00	12,659.04	-6,477.25	1,295.95	6,477.25	0.00	0.00	0.00
19,200.00	89.68	180.00	12,659.61	-6,577.25	1,295.95	6,577.25	0.00	0.00	0.00
19,300.00	89.68	180.00	12,660.17	-6,677.24	1,295.95	6,677.24	0.00	0.00	0.00
19,400.00	89.68	180.00	12,660.73	-6,777.24	1,295.95	6,777.24	0.00	0.00	0.00
19,500.00	89.68	180.00	12,661.30	-6,877.24	1,295.95	6,877.24	0.00	0.00	0.00
19,600.00	89.68	180.00	12,661.86	-6,977.24	1,295.95	6,977.24	0.00	0.00	0.00
19,700.00	89.68	180.00	12,662.42	-7,077.24	1,295.95	7,077.24	0.00	0.00	0.00
19,800.00	89.68	180.00	12,662.98	-7,177.24	1,295.95	7,177.24	0.00	0.00	0.00
19,900.00	89.68	180.00	12,663.55	-7,277.23	1,295.95	7,277.23	0.00	0.00	0.00
20,000.00	89.68	180.00	12,664.11	-7,377.23	1,295.95	7,377.23	0.00	0.00	0.00
20,100.00	89.68	180.00	12,664.67	-7,477.23	1,295.95	7,477.23	0.00	0.00	0.00
20,200.00	89.68	180.00	12,665.24	-7,577.23	1,295.95	7,577.23	0.00	0.00	0.00
20,300.00	89.68	180.00	12,665.80	-7,677.23	1,295.95	7,677.23	0.00	0.00	0.00
20,400.00	89.68	180.00	12,666.36	-7,777.23	1,295.95	7,777.23	0.00	0.00	0.00
20,500.00	89.68	180.00	12,666.92	-7,877.23	1,295.95	7,877.23	0.00	0.00	0.00
20,600.00	89.68	180.00	12,667.49	-7,977.22	1,295.95	7,977.22	0.00	0.00	0.00
20,700.00	89.68	180.00	12,668.05	-8,077.22	1,295.95	8,077.22	0.00	0.00	0.00
20,800.00	89.68	180.00	12,668.61	-8,177.22	1,295.95	8,177.22	0.00	0.00	0.00
20,900.00	89.68	180.00	12,669.18	-8,277.22	1,295.95	8,277.22	0.00	0.00	0.00
21,000.00	89.68	180.00	12,669.74	-8,377.22	1,295.95	8,377.22	0.00	0.00	0.00
21,100.00	89.68	180.00	12,670.30	-8,477.22	1,295.95	8,477.22	0.00	0.00	0.00



Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

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)
21,200.00	89.68	180.00	12,670.86	-8,577.21	1,295.95	8,577.21	0.00	0.00	0.00
21,300.00	89.68	180.00	12,671.43	-8,677.21	1,295.95	8,677.21	0.00	0.00	0.00
21,400.00	89.68	180.00	12,671.99	-8,777.21	1,295.95	8,777.21	0.00	0.00	0.00
21,500.00	89.68	180.00	12,672.55	-8,877.21	1,295.95	8,877.21	0.00	0.00	0.00
21,600.00	89.68	180.00	12,673.12	-8,977.21	1,295.95	8,977.21	0.00	0.00	0.00
21,700.00	89.68	180.00	12,673.68	-9,077.21	1,295.95	9,077.21	0.00	0.00	0.00
21,800.00	89.68	180.00	12,674.24	-9,177.20	1,295.95	9,177.20	0.00	0.00	0.00
21,900.00	89.68	180.00	12,674.80	-9,277.20	1,295.95	9,277.20	0.00	0.00	0.00
22,000.00	89.68	180.00	12,675.37	-9,377.20	1,295.95	9,377.20	0.00	0.00	0.00
22,100.00	89.68	180.00	12,675.93	-9,477.20	1,295.95	9,477.20	0.00	0.00	0.00
22,200.00	89.68	180.00	12,676.49	-9,577.20	1,295.95	9,577.20	0.00	0.00	0.00
22,300.00	89.68	180.00	12,677.06	-9,677.20	1,295.95	9,677.20	0.00	0.00	0.00
22,400.00	89.68	180.00	12,677.62	-9,777.20	1,295.95	9,777.20	0.00	0.00	0.00
22,500.00	89.68	180.00	12,678.18	-9,877.19	1,295.95	9,877.19	0.00	0.00	0.00
22,600.00	89.68	180.00	12,678.74	-9,977.19	1,295.95	9,977.19	0.00	0.00	0.00
22,645.43	89.68	180.00	12,679.00	-10,022.62	1,295.95	10,022.62	0.00	0.00	0.00

Fed 92H_BHL

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Fed 92H_KOP	0.00	0.01	12,052.00	150.00	1,295.95	393,614.380	790,474.130	32° 4' 46.45999 N	103° 31' 44.22713 W
- plan hits target center									
- Point									
Fed 92H_EOC	0.00	0.00	12,624.95	-419.73	1,295.95	393,044.648	790,474.130	32° 4' 40.82232 N	103° 31' 44.27650 W
- plan hits target center									
- Point									
Fed 92H_BHL	0.00	0.00	12,679.00	-10,022.62	1,295.95	383,441.780	790,474.130	32° 3' 5.79871 N	103° 31' 45.10810 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
950.00	950.00	10 3/4"	10-3/4	12-1/4



Database: RyanUSA_Compass
Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 92H
Wellbore: OH
Design: PN2

Local Co-ordinate Reference: Well Fed 92H
TVD Reference: RT=32 @ 3350.50ft (Nabors X-04)
MD Reference: RT=32 @ 3350.50ft (Nabors X-04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
780.00	780.00	Rustler			
1,128.00	1,128.00	Top of Salt			
4,881.79	4,851.00	Base of Salt			
5,126.47	5,093.00	Delaware			
9,224.26	9,146.00	Lower Brushy Canyon			
9,406.25	9,326.00	1st BSPG Lime			
10,354.62	10,264.00	1st BSPG Sand			
10,631.71	10,539.00	2nd BSPG Lime			
10,905.49	10,812.00	2nd BSPG Sand			
11,399.61	11,306.00	3rd BSPG Lime			
11,983.61	11,890.00	3rd BSPG Sand			
12,489.98	12,376.00	Wolfcamp			
12,523.40	12,403.00	Wolfcamp X			
12,658.37	12,499.00	Wolfcamp Y			
12,770.14	12,560.00	Wolfcamp 100			
14,295.16	12,632.00	Wolfcamp 110			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,163.09	12,069.47	149.73	1,295.95	Start Build 10.00
13,059.87	12,625.05	-437.21	1,295.95	EOC: Hold Inc & Azm

VAM SG

Connection Data Sheet

O.D (in)	WEIGHT (lb/ft)	WALL (in)	GRADE	DRIFT	CONNECTION
5.500	20.00	0.361	VST P110EC	4.653	VAM® SG

PIPE PROPERTIES	
Material Grade	VST P110EC
Min. Yield Strength	125 ksi
Min. Tensile Strength	135 ksi
Nominal OD	5.500 in
Nominal ID	4.778 in
Nominal Area	5.828 sq. in
Yield Strength	729 kips
Ultimate Strength	787 kips
Min Internal Yield	14,360 psi
External Pressure	12,090 psi

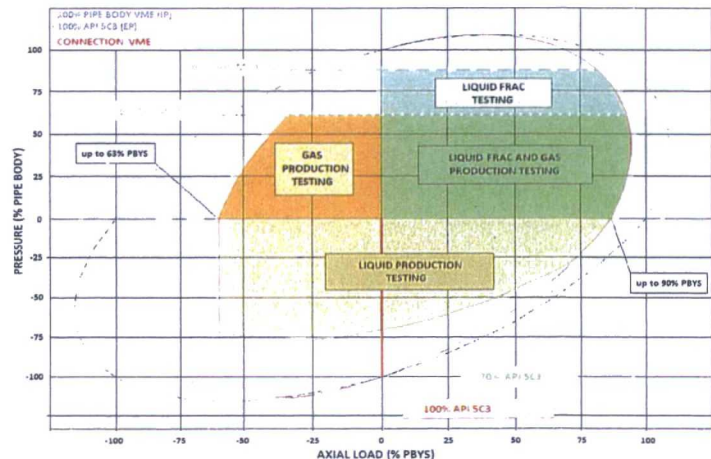
CONNECTION PROPERTIES	
Connection OD	5.697 in
Connection ID	4.711 in
Make up Loss	6.335 in
Connection Critical Area	5.071 sq. in
%PB Section Area	87.0%
Yield Strength	634 kips
Parting Load	685 kips
Min Internal Yield	14,360 psi
External Pressure	8,460 psi
Structural Collapse	12,090 psi
Working Compression	444 kips
Max. Bending w/ Sealability	40 °/100 ft

DOCUMENTATION	
Ref. Drawing	SI-PD 100954 Rev.A
Date	21-Jul-17
Time	3:19 PM
Email	tech.support@vam-usa.com

TORQUE VALUES	
Min Make Up Torque	8,100 ft-lb
Opt Make Up Torque	9,800 ft-lb
Max Make Up Torque	11,500 ft-lb
Max Torque w/ Sealability	12,500 ft-lb

The single solution for Shale Play needs

VAM® SG brings VAM® premium sealing performance to a semi-flush connection with extremely high Tension performance and increased Torque capacity, validated to the specific Shale drilling requirements, while remaining highly competitive in North American Shale play economics.



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Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
5 1/2 in.	20.00 lb/ft	0.361 in.	P110 EC	4.653 in.	VAM® TOP HT

PIPE PROPERTIES

Nominal OD	5.500 in
Nominal ID	4.778 in
Nominal Cross Section Area	5.828 sqin
Grade Type	High Yield
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi

CONNECTION PROPERTIES

Connection Type	Premium T&C
Connection OD (nom)	5.071 in
Connection ID (nom)	4.715 in
Make-up Loss	4.382 in
Coupling Length	10.748 in
Critical Cross Section	5.828 sqin
Tension Efficiency	100 % of pipe
Compression Efficiency	80 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES

Tensile Yield Strength	729 klb
Compression Resistance	583 klb
Internal Yield Pressure	14360 psi
External Pressure Resistance	12090 psi
Max. Bending with Sealability (CAI IV)	20 °/100 ft
Max. Load on Coupling Face	888 klb

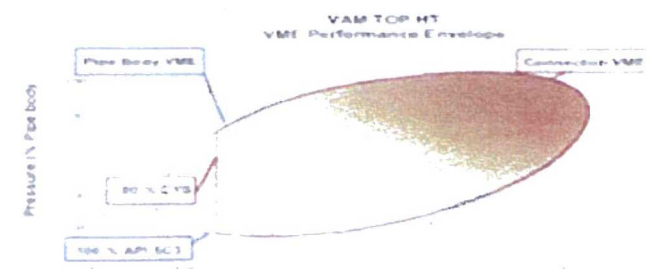
FIELD TORQUE VALUES

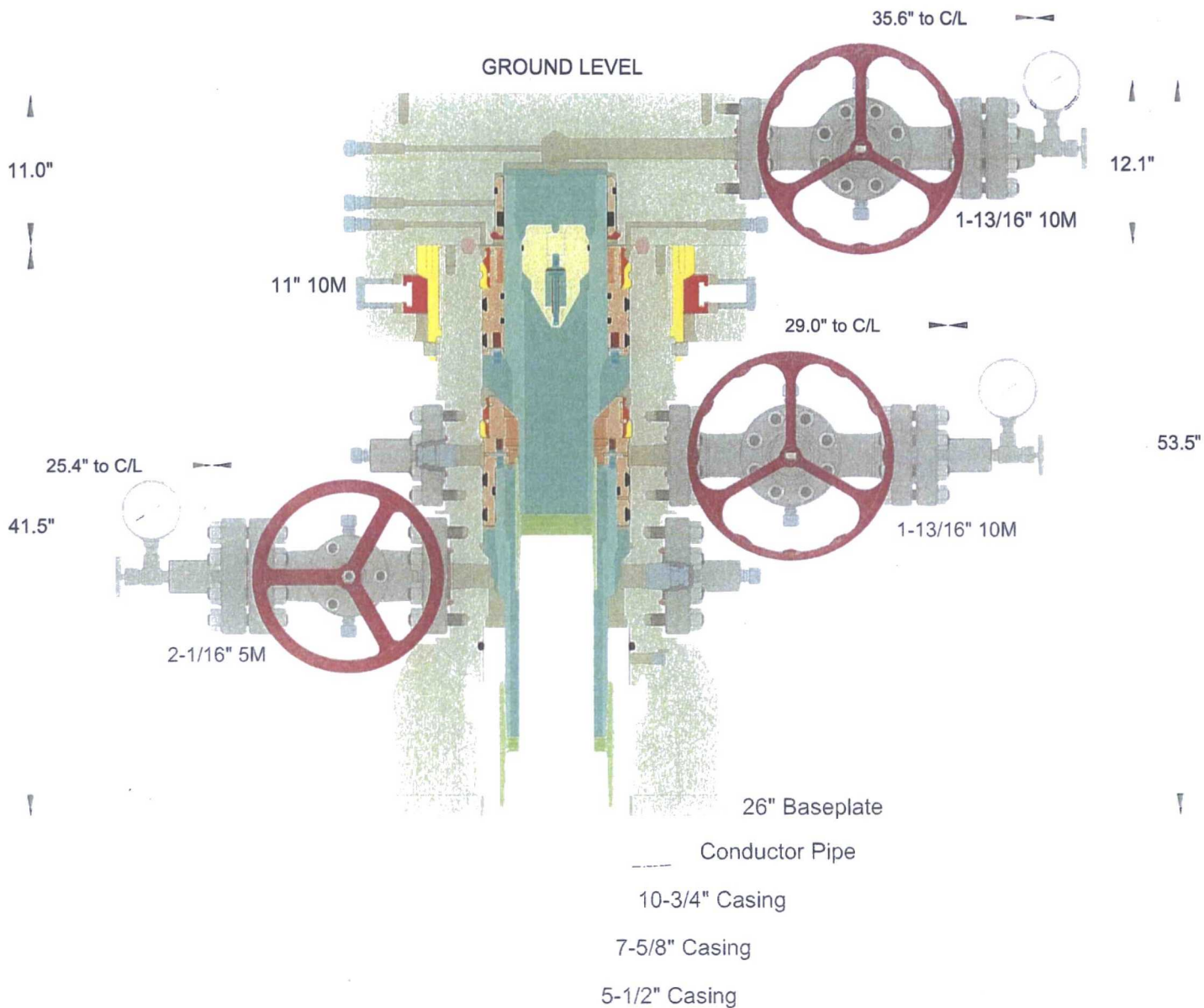
Min. Make-up torque	10850 ft.lb
Opt. Make-up torque	11950 ft.lb
Max. Make-up torque	13050 ft.lb
Field Liner Max.	15400 ft.lb

VAM® TOP HT (High Torque) is a T&C connection based on the main features of the VAM® TOP connection.

This connection provides reinforced torque capability for liners and where High Torque is anticipated due to string rotation during running operations (torque rotating liner while running, rotating casing when cementing). It has been tested as per ISO13679 CAI IV requirements.

VAM® TOP HT is interchangeable with VAM® TOP product line with the exception of 5 1/2" size.





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CACTUS WELLHEAD LLC

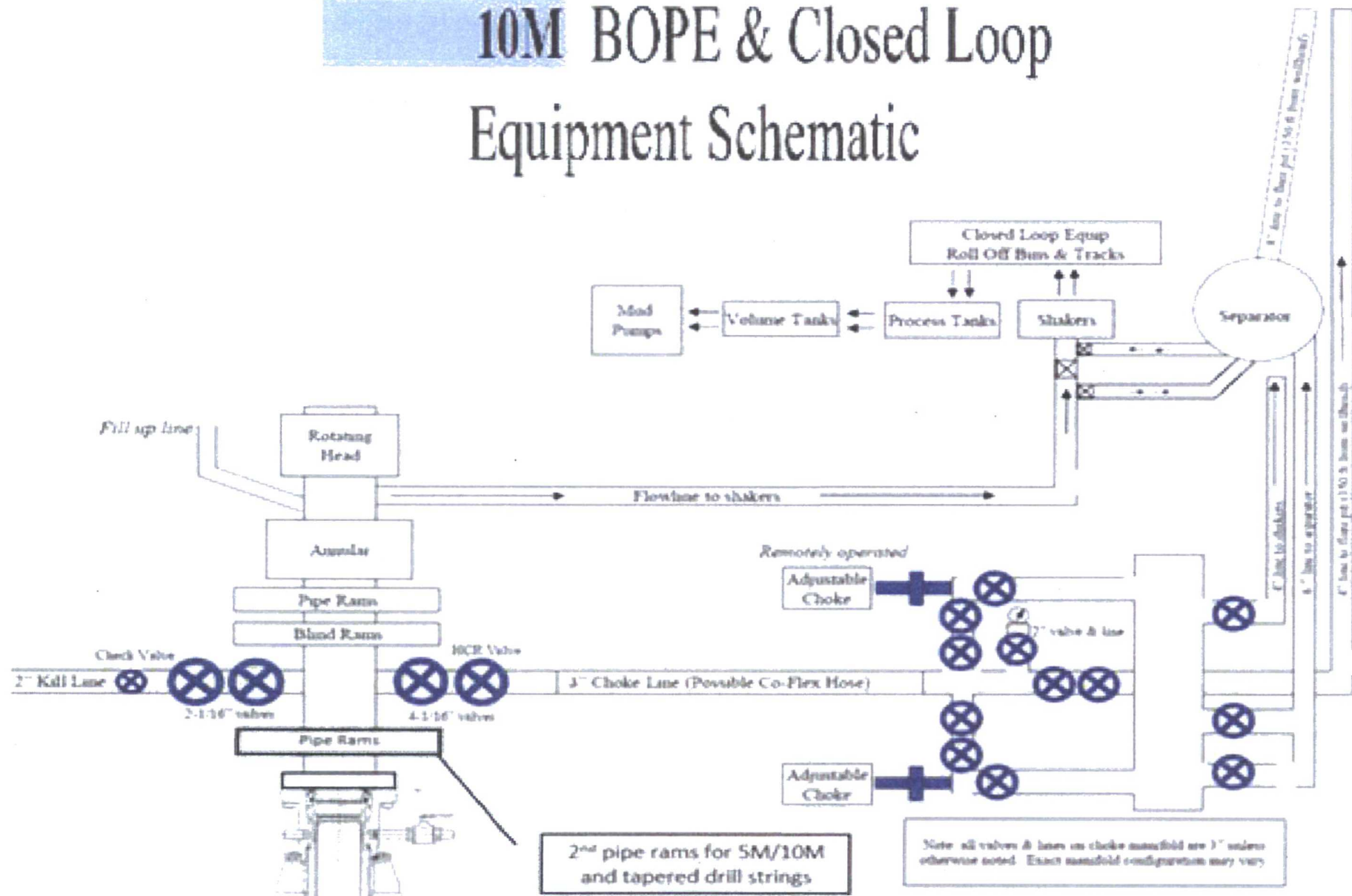
DEVON ENERGY CORPORATION

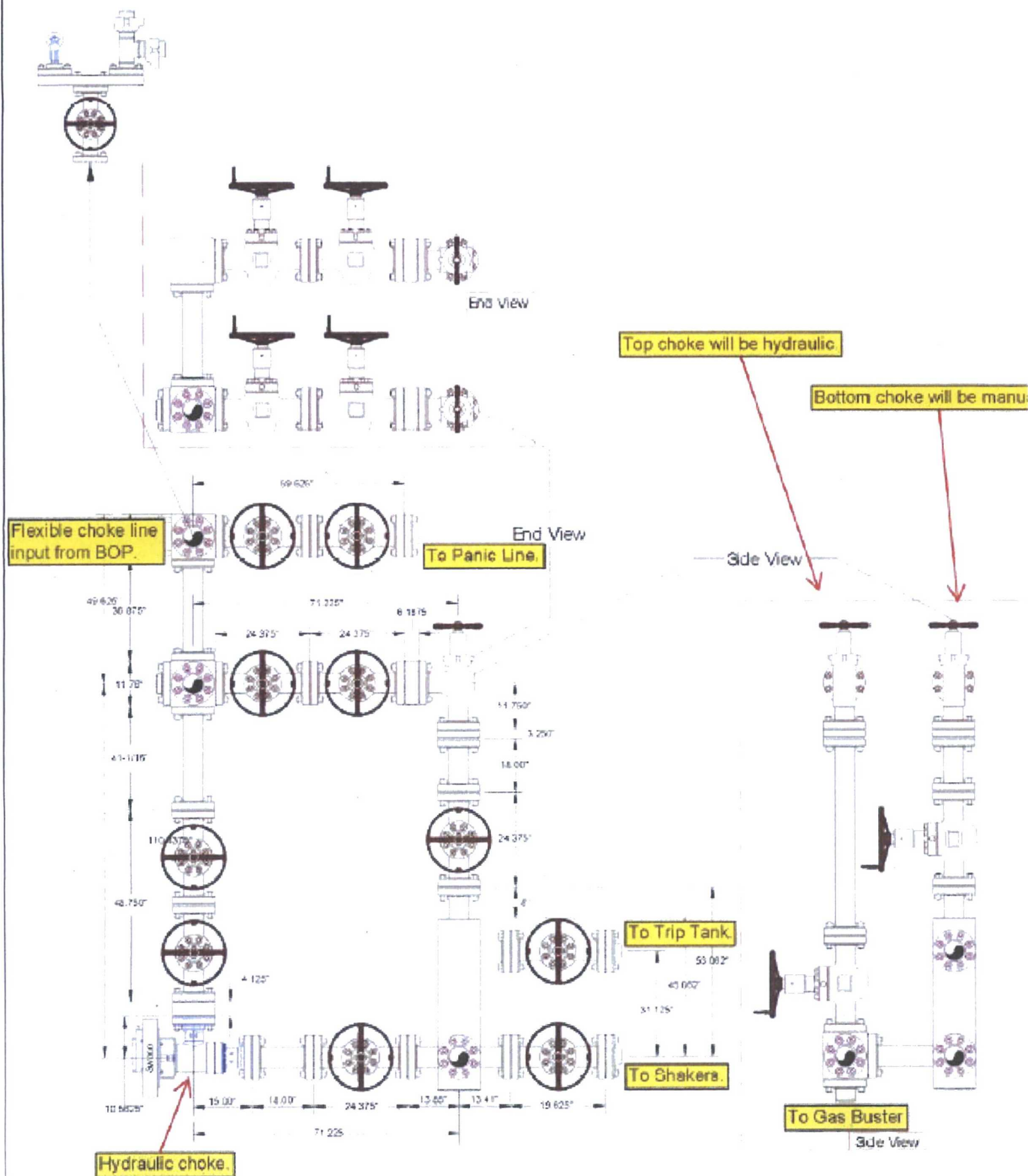
16" x 11-7/8" x 7-5/8" MBU-T Wellhead Assembly
With 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers
And 11" 10M MBU-T-HPS-F TA Cap

DRAWN	DLE	29NOV17
APPRV		

DRAWING NO.	OKE0001764
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10M BOPE & Closed Loop Equipment Schematic





PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Co, LP
LEASE NO.:	NMNM114988
WELL NAME & NO.:	92H-Seawolf 1 12 Fed
SURFACE HOLE FOOTAGE:	200'/N & 450'/W
BOTTOM HOLE FOOTAGE:	330'/S & 1736'/W
LOCATION:	Section 1, T.26 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

Potash	☒ None	☒ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☒ Medium	☒ High
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	☒ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply except for the following:

A. CASING

- The minimum required fill of cement behind the 5 1/2 inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- Second stage above DV tool:
 - Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

MHH 01162018

GENERAL REQUIREMENTS

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - f. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - g. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - h. Manufacturer representative shall install the test plug for the initial BOP test.
 - i. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - j. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

10 3/4	surface csg in a	14 3/4	inch hole.	Design Factors			SURFACE		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	40.50	J 55	ST&C	10.37	3.58	0.48	1,000	40,500	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500			Tail Cmt	does	circ to sfc.	Totals:	1,000	40,500	
Comparison of Proposed to Minimum Required Cement Volumes									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
14 3/4	0.5563	623	835	582	43	8.50	3743	5M	1.50

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

7 5/8	casing inside the	10 3/4	Design Factors			INTERMEDIATE		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
"A"	29.70	P 110	BUTT	2.49	1.12	1.2	9,200	273,240
"B"	29.70	P 110	FlushMax III	2.29	0.77	0.96	3,485	103,505
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals: 12,685 376,745		
B	s would be:			5.44	0.82	if it were a vertical wellbore.		
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°
			12685	12499	12499	12146	51	10
The cement volume(s) are intended to achieve a top of					0	ft from surface or a		1000
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
9 7/8 X 8 3/4	0.2148	1057	3007	2755	9	10.00	5114	10M
Collapse = 1.12*1.5 = 1.68 > 1.125 = OK				Alt Burst = 1.48 > 1.0 = OK		MASP is within 10% of 5000psig, need		
Burst Frac Gradient(s) for Segment(s): A, B, C, D = a, 0.61, c, d <0.70 a								
Problem!!								

Tail cmt					Design Factors			PRODUCTION	
5 1/2	casing inside the	7 5/8							
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	20.00	P 110	Vam Top HT	2.87	1.6	1.82	12,145	242,900	
"B"	20.00	P 110	Vam SG	7.93	1.42	1.82	10,500	210,000	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,672							Totals:	22,645	452,900
B	would be:			59.36	1.53	if it were a vertical wellbore.			
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC
			22645	12679	12679	12145	90	10	13042
The cement volume(s) are intended to achieve a top of					12650	ft from surface or a		35	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
6 3/4	0.0835	852	1133	841	35	12.00			0.34
Class 'H' tail cmt yld > 1.20									
Hole-Cplg: This is above min req TOC section									