Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

## 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.*** HOBBS OCD

***SUBMIT IN TRIPLICATE - Other instructions on reverse side.*** OCT 14 2015

RECEIVED

5. Lease Serial No.
NMNM114988

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
SEAWOLF 12 1 FED 1H

2. Name of Operator
DEVON ENERGY PRODUCITON CO LP

Contact: TRINA C COUCH
Mail: trina.couch@dvn.com

9. API Well No.
30-025-42775

3a. Address
DEVON ENERGY PRODUCITON CO LP 333 WEST SHERIDAN AVE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
405-228-7203
405-552-7802

10. Field and Pool, or Exploratory
RED HILLS; UPPER BS SHALE

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 13 T26S R33E 200FNL 575FEL

11. County or Parish, and State
LEA COUNTY COUNTY, NM

12. CHECK 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 | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other Change to Original APD |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

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 recomplete 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall 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 Production Company, L.P. respectfully requests to remove the pilot hole from the subject well.

Attached, please find the revised drilling plan and directional survey

Thank you

ORIGINAL COA STILL APPLIES SINCE ALREADY REMOVED PILOT HOLE FROM DRILLING PROGRAM

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #316412 verified by the BLM Well Information System**
**For DEVON ENERGY PRODUCITON CO LP, sent to the Hobbs**
**Committed to AFMSS for processing by KENNETH RENNICK on 09/15/2015 ()**

Name *(Printed/Typed)* TRINA C COUCH — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 09/15/2015

### THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By — Title — Date

APPROVED
PETROLEUM ENGINEER
SEP 15 2015
Kenneth Rennick
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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

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.

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

OCT 15 2015

## 1. Geologic Formations

| | | | |
|---|---|---|---|
| TVD of target | 9,685' | Pilot hole depth | N/A |
| MD at TD: | 19,703' | Deepest expected fresh water: | |

## Basin

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/ Target Zone? | Hazards* |
|---|---|---|---|
| Rustler | 847 | Barren | |
| Salado | 1,203 | Barren | |
| Base of Salt | 4,985 | Barren | |
| Delaware | 5,225 | Oil | |
| Madera | 9,155 | Oil | |
| Lower Brushy | 9,295 | Oil | |
| Bone Spring | 9,485 | Oil | |
| Upper Leonard Shale | 9,500 | Oil | |
| Upper Leonard Shale Base | 9,815 | Oil | |
| 1st Bone Spring Sand | 10,435 | Oil | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |

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

## 2. Casing Program

see COA 20

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | | | | | |
| 17.5" | 0 | 1,050' | 13.375" | 54.5 | J-55 | BTC | 1.78 | 2.92 | 5.70 |
| 12.25" | 0 | 5,150' | 9.625" | 40 | J-55 | LTC | 1.39 | 1.19 | 2.26 |
| 8.75" | 9,000' | 19,703' | 5.5" | 17 | P-110 | BTC | 1.20 | 1.13 | 2.25 |
| | | | | BLM Minimum Safety Factor | | | 1.125 | 1.00 | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Does casing meet API specifications? If no, attach casing specification sheet. | Y |
| Is premium or uncommon casing planned? If yes attach casing specification sheet. | N |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing? | Y |
| | |
| Is well located within Capitan Reef? | N |
| If yes, does production casing cement tie back a minimum of 50' above the Reef? | |
| Is well within the designated 4 string boundary. | |
| | |
| Is well located in SOPA but not in R-111-P? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | |
| | |
| Is well located in R-111-P and SOPA? | N |
| If yes, are the first three strings cemented to surface? | |
| Is 2nd string set 100' to 600' below the base of salt? | |
| | |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | |
| | |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | |

## 3. Cementing Program

| Casing | # Sks | Wt. lb/ gal | $H_20$ gal/sk | Yld ft3/ sack | 500# Comp. Strength (hours) | Slurry Description |
|---|---|---|---|---|---|---|
| 13-3/8" Surface | 1120 | 14.8 | 6.32 | 1.33 | 6 | Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake |
| 9-5/8" Inter. | 1110 | 12.9 | 9.81 | 1.85 | 17 | Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake |
| | 430 | 14.8 | 6.32 | 1.33 | 6 | Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake |
| 5-1/2" Prod | 590 | 11.9 | 12.89 | 2.31 | n/a | 1st Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000 |
| | 2760 | 14.5 | 5.31 | 1.2 | 25 | Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite |
| 5-1/2" Prod Two Stage | 590 | 11.9 | 12.89 | 2.31 | n/a | 1st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000 |
| | 2760 | 14.5 | 5.31 | 1.2 | 25 | 1st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite |
| | DV Tool = 5200ft | | | | | |
| | 20 | 11 | 14.81 | 2.55 | 22 | 2nd Stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake |
| | 30 | 14.8 | 6.32 | 1.33 | 6 | 2nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake |

DV tool 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 |
|---|---|---|
| 13-3/8" Surface | 0' | 100% |
| 9-5/8" Intermediate | 0' | 75% |
| 5-1/2" Production Casing | 4950' | 25% |
| 5-1/2" Production Casing Two Stage Option | 4950' | 25% |

## 4. Pressure Control Equipment

| | |
|---|---|
| N | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |

| BOP installed and tested before drilling which hole? | Size? | Min. Required WP | Type | ✓ | Tested to: |
|---|---|---|---|---|---|
| 12-1/4" | 13-5/8" | 3M | Annular | x | 50% of working pressure |
| | | | Blind Ram | | 3M |
| | | | Pipe Ram | | |
| | | | Double Ram | x | |
| | | | Other* | | |
| 8-3/4" | 13-5/8" | 3M | Annular | x | 50% testing pressure |
| | | | Blind Ram | | 3M |
| | | | Pipe Ram | | |
| | | | Double Ram | x | |
| | | | Other * | | |
| | | | Annular | x | |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | x | |
| | | | Other * | | |

*Specify if additional ram is utilized.

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.<br>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. |

See CoA

| | | |
|---|---|---|
| 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 is being 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.<br><br>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 3000 (3M) psi.<br>• Wellhead will be installed by wellhead company's representatives.<br>• If the welding is performed by a third party, the wellhead company's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.<br>• The wellhead company's representative will install the test plug for the initial BOP test.<br>• The 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.<br>• 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.<br>• Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.<br>• Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.<br><br>After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead company's Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 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.<br>After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead company's Uni-head.<br><br>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. | |

See CoA

| | |
|---|---|
| | 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<br><br>See attached schematic. |

**5. Mud Program**

| Depth | | Type | Weight (ppg) | Viscosity | Water Loss |
|---|---|---|---|---|---|
| From | To | | | | |
| 0 | 1,050' | FW Gel | 8.6-8.8 | 28-34 | N/C |
| 1,050' | 5,150' | Saturated Brine | 10.0-10.2 | 28-34 | N/C |
| 5,150' | 19,703' | Cut Brine | 8.5-9.3 | 28-34 | N/C |

920

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 |

**6. Logging and Testing Procedures**

| Logging, Coring and Testing. | |
|---|---|
| x | Will run GR/CNL fromTD 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 | Int. shoe to KOP |
| | Density | Int. shoe to KOP |
| X | CBL | Production casing |
| X | Mud log | Intermediate shoe to TD |
| | PEX | |

## 7. Drilling Conditions

| Condition | Specify what type and where? |
|---|---|
| BH Pressure at deepest TVD | 2732 psi |
| Abnormal Temperature | No |

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

| | |
|---|---|
| Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S 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 | H2S is present |
| Y | H2S Plan attached |

## 8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
_x_ Directional Plan
___ Other, describe

devon

Seawolf 12-1 Fed 1H
Lea Co, NM

Weatherford

**Plan Data for Seawolf 12-1 Fed 1H Lat**

Plan Point Information:
DogLeg Severity Unit: °/100.00ft  Position offsets from Slot centre

| MD (USft) | Inc (°) | Az (°) | TVD (USft) | +N/-S (USft) | +E/-W (USft) | Northing (USft) | Easting (USft) | VSec (USft) | DLS (DLSU) |
|---|---|---|---|---|---|---|---|---|---|
| 9225.69 | 0.00 | 0.00 | 9213.16 | 251.65 | 142.78 | 383182.74 | 793658.93 | 251.65 | 0.00 |
| 10046.52 | 90.29 | 0.00 | 9734.02 | 775.16 | 142.78 | 383706.25 | 793658.93 | 775.16 | 11.00 |
| 19703.43 | 90.29 | 0.00 | 9685.00 | 10431.95 | 142.78 | 393363.04 | 793658.93 | 10431.95 | 0.00 |

**Plan Data for Seawolf 12-1 Fed 1H Lat**

Slot: Seawolf 12-1 Fed 1H
Position:
Offset is from Site centre
+N/-S: 0.00USft  Northing: 382931.09USft  Latitude: 32°3'0.5"
+E/-W: 0.00USft  Easting: 793516.15USft  Longitude: -103°31'9.8"
Elevation Above VRD: 3360.00USft

**Plan Data for Seawolf 12-1 Fed 1H Lat**

Target Set Information:
Name: Seawolf 12-1 Fed 1H
Position offsets from Slot centre

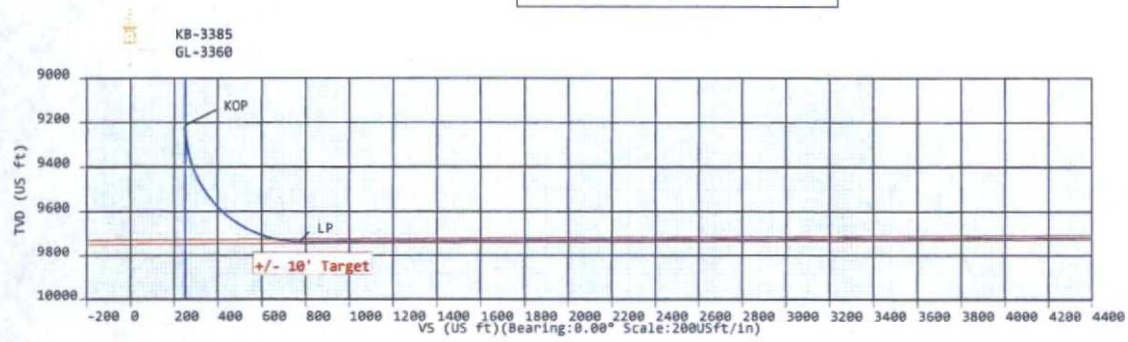
| Name | TVD (USft) | +N/-S (USft) | +E/-W (USft) | Northing (USft) | Easting (USft) | Shape | Comment |
|---|---|---|---|---|---|---|---|
| LP Tgt | 9734.02 | 775.16 | 142.78 | 383706.25 | 793658.93 | Cuboid | |
| PBHL 1H | 9685.00 | 10431.95 | 142.78 | 393363.04 | 793658.93 | Cuboid | |

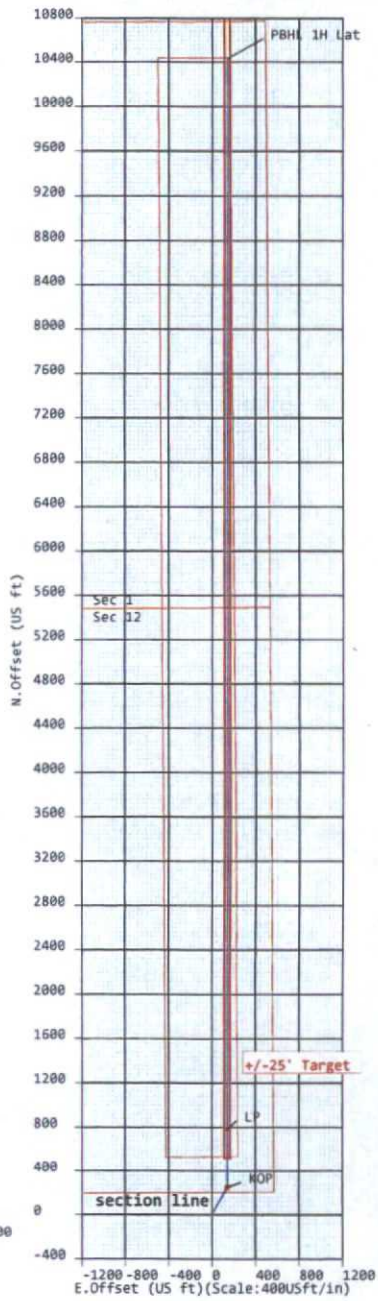
**Plan Data for Seawolf 12-1 Fed 1H Lat**

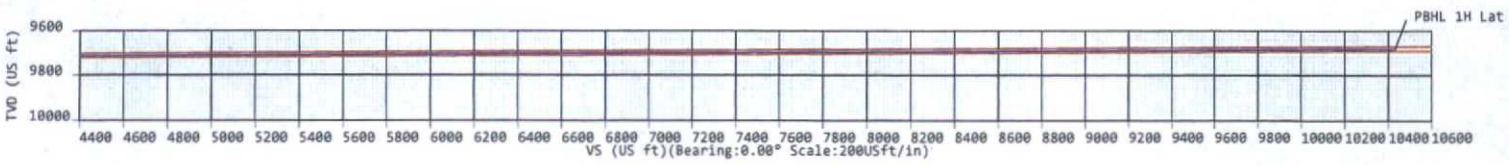
Well: Seawolf 12-1 Fed 1H Lat
Type: Side-Track
File Number:
Plan Folder: P1  Plan: P1:V4
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft  Azimuth: 0.00°
+E/-W: 0.00USft
Magnetic Parameters:

| Model: | Field Strength: | Declination: | Dip: | Date: |
|---|---|---|---|---|
| BGGM | 48086(nT) | 7.24° | 59.92° | 2015-06-15 |

Seawolf 12-1 Fed 1H Lat
Seawolf 12-1 Fed 1H Pilot




Sign Off: Russell Joyner

# Seawolf 12-1 Fed 1H Lat

**Field:** Lea Co, NM Nad 83 NMEZ

| | | | | | |
|---|---|---|---|---|---|
| **Map Units:** | US ft | | | | |
| **Vertical Reference Datum (VRD):** | Mean Sea Level | | | | |
| **Projected Coordinate System:** | NAD83 / New Mexico East (ftUS) | | | | |

**Site:** Seawolf 12-1 Fed 1H

| | | | | | |
|---|---|---|---|---|---|
| **Company Name:** | Devon Energy | | | | |
| **Units:** | US ft | | | | |
| **TVD Reference:** | | | | | |
| **Position:** | | | | | |
| | **Northing:** | 382931.09US ft | **Latitude:** | 32° 3' 0.52" | |
| | **Easting:** | 793516.15US ft | **Longitude:** | -103° 31' 9.81" | |
| **North Reference:** | Grid | **Convergence Angle:** 0.43 | | | |
| **Elevation above Mean Sea Level :** | 3360.00US ft | | | | |
| **Comment :** | | | | | |

**Slot:** Seawolf 12-1 Fed 1H

| | | | | | |
|---|---|---|---|---|---|
| **Position (Relative to Site centre)** | | | | | |
| **+N/-S:** 0.00US ft | **Northing:** | 382931.09US ft | **Latitude:** | 32°3'0.52" | |
| **+E/-W:** 0.00US ft | **Easting:** | 793516.15US ft | **Longitude:** | -103°31'9.81" | |
| **Elevation above Mean Sea Level :** | 3360.00US ft | | | | |
| **Comment :** | | | | | |

**Well:** Seawolf 12-1 Fed 1H Lat

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Type:** | Sidetrack | | **Rig Height ( Kelly Bushing):** | 25.00US ft | **Relative To Mean Sea Level:** | 3385.00US ft | |
| **File Number:** | | | | | | | |
| **Parent:** Seawolf 12-1 Fed 1H Pilot | **Tie Point Method:** TVD | **Tie Point:** 9213.16 US ft | | | | | |
| **Plan Folder:** | P1 | **Plan:** | P1:V4 | | | | |
| **Comment:** New BHL | | | | | | | |
| **Closure Distance:** | 10432.9US ft | **Closure Azimuth:** | 0.784147° | | | | |
| **Comment:** | | | | | | | |

| | | | |
|---|---|---|---|
| **Vertical Section:** | | | |
| **Position of Origin (Relative to Slot centre)** | **+N/-S:** 0.00US ft | **+E/-W:** 0.00US ft | |
| **Vertical Section Azimuth:** | 0.00° | | |
| **Magnetic Parameters:** | | | |
| **Model:** BGGM | **Field Strength:** 48086.2 nT | **Declination:** 7.24° | **Dip:** 59.92° **Date:** 15/Jun/2015 (dd/mmm/yyyy) |

**Target Set:** Seawolf 12-1 Fed 1H

| | | | |
|---|---|---|---|
| **Number of Targets:** 2 | | | |
| **Target: LP Tgt** | | | |
| **Position:** (Relative to Slot centre) | | | |
| +N/-S: 775.16 | Northing: 383706.25 | Latitude: 32°3'8.18" | |
| +E/-W: 142.78 | Easting: 793658.93 | Longitude: -103°31'8.08" | |
| **TVD (Kelly Bushing) :** | 9734.02 US ft | | |
| **Shape:** Cuboid | | | |
| **Orientation** | Inclination: 0.29° | Azimuth: 0.00° | |
| **Dimensions** | Length: 0.00 | Breadth: 50.00 | Height: 20.00 |
| **Target: PBHL 1H** | | | |
| **Position:** (Relative to Slot centre) | | | |
| +N/-S: 10431.95 | Northing: 393363.04 | Latitude: 32°4'43.74" | |
| +E/-W: 142.78 | Easting: 793658.93 | Longitude: -103°31'7.23" | |
| **TVD (Kelly Bushing) :** | 9685.00 US ft | | |
| **Shape:** Cuboid | | | |
| **Orientation** | Inclination: 0.29° | Azimuth: 0.00° | |
| **Dimensions** | Length: 19828.00 | Breadth: 50.00 | Height: 20.00 |

**Casing Points:** (Relative to Slot Centre, TVD Relative to Kelly Bushing)

| MD (US ft) | Inc (°) | Az (°) | TVD (US ft) | N.Offset (US ft) | E.Offset (US ft) | Northing (US ft) | Easting (US ft) | Name |
|---|---|---|---|---|---|---|---|---|

**Wellpath created using minimum curvature**

**Salient Points:** (Relative to Slot Centre, TVD Relative to Kelly Bushing)

| MD (US ft) | Inc (°) | Az (°) | TVD (US ft) | N.Offset (US ft) | E.Offset (US ft) | VS (US ft) | DLS (°/100 US ft) | B.Rate (°/100 US ft) | T.Rate (°/100 US ft) | T.Face (°) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9225.69 | 0 | 0 | 9213.16 | 251.65 | 142.78 | 251.65 | 0 | 0 | 0 | 0 | KOP |
| 10046.52 | 90.29 | 0 | 9734.02 | 775.16 | 142.78 | 775.16 | 11 | 11 | 0 | 0 | LP |
| 19703.43 | 90.29 | 0 | 9685 | 10431.95 | 142.78 | 10431.95 | 0 | 0 | 0 | 0 | PBHL 1H Lat |

**Interpolated Points:** (Relative to Slot Centre, TVD Relative to Kelly Bushing)

| MD (US ft) | Inc (°) | Az (°) | TVD (US ft) | N.Offset (US ft) | E.Offset (US ft) | VS (US ft) | DLS (°/100 US ft) | Northing (US ft) | Easting (US ft) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 9200 | 0 | 0 | 9187.47 | 251.65 | 142.78 | 251.65 | 0 | 383182.74 | 793658.93 | |
| 9225.69 | 0 | 0 | 9213.16 | 251.65 | 142.78 | 251.65 | 0 | 383182.74 | 793658.93 | KOP |
| 9300 | 8.17 | 0 | 9287.22 | 256.94 | 142.78 | 256.94 | 11 | 383188.03 | 793658.93 | |
| 9400 | 19.17 | 0 | 9384.23 | 280.55 | 142.78 | 280.55 | 11 | 383211.64 | 793658.93 | |
| 9500 | 30.17 | 0 | 9474.96 | 322.23 | 142.78 | 322.23 | 11 | 383253.32 | 793658.93 | |
| 9600 | 41.17 | 0 | 9556.07 | 380.45 | 142.78 | 380.45 | 11 | 383311.54 | 793658.93 | |
| 9700 | 52.17 | 0 | 9624.58 | 453.09 | 142.78 | 453.09 | 11 | 383384.18 | 793658.93 | |
| 9800 | 63.17 | 0 | 9677.98 | 537.46 | 142.78 | 537.46 | 11 | 383468.55 | 793658.93 | |
| 9900 | 74.17 | 0 | 9714.29 | 630.47 | 142.78 | 630.47 | 11 | 383561.56 | 793658.93 | |
| 10000 | 85.17 | 0 | 9732.18 | 728.7 | 142.78 | 728.7 | 11 | 383659.79 | 793658.93 | |
| 10046.52 | 90.29 | 0 | 9734.02 | 775.16 | 142.78 | 775.16 | 11 | 383706.25 | 793658.93 | LP |
| 10100 | 90.29 | 0 | 9733.75 | 828.65 | 142.78 | 828.65 | 0 | 383759.74 | 793658.93 | |
| 10200 | 90.29 | 0 | 9733.24 | 928.65 | 142.78 | 928.65 | 0 | 383859.74 | 793658.93 | |
| 10300 | 90.29 | 0 | 9732.74 | 1028.65 | 142.78 | 1028.65 | 0 | 383959.74 | 793658.93 | |
| 10400 | 90.29 | 0 | 9732.23 | 1128.64 | 142.78 | 1128.64 | 0 | 384059.73 | 793658.93 | |
| 10500 | 90.29 | 0 | 9731.72 | 1228.64 | 142.78 | 1228.64 | 0 | 384159.73 | 793658.93 | |
| 10600 | 90.29 | 0 | 9731.21 | 1328.64 | 142.78 | 1328.64 | 0 | 384259.73 | 793658.93 | |
| 10700 | 90.29 | 0 | 9730.71 | 1428.64 | 142.78 | 1428.64 | 0 | 384359.73 | 793658.93 | |
| 10800 | 90.29 | 0 | 9730.2 | 1528.64 | 142.78 | 1528.64 | 0 | 384459.73 | 793658.93 | |
| 10900 | 90.29 | 0 | 9729.69 | 1628.64 | 142.78 | 1628.64 | 0 | 384559.73 | 793658.93 | |
| 11000 | 90.29 | 0 | 9729.18 | 1728.64 | 142.78 | 1728.64 | 0 | 384659.73 | 793658.93 | |
| 11100 | 90.29 | 0 | 9728.68 | 1828.63 | 142.78 | 1828.63 | 0 | 384759.72 | 793658.93 | |
| 11200 | 90.29 | 0 | 9728.17 | 1928.63 | 142.78 | 1928.63 | 0 | 384859.72 | 793658.93 | |
| 11300 | 90.29 | 0 | 9727.66 | 2028.63 | 142.78 | 2028.63 | 0 | 384959.72 | 793658.93 | |
| 11400 | 90.29 | 0 | 9727.15 | 2128.63 | 142.78 | 2128.63 | 0 | 385059.72 | 793658.93 | |
| 11500 | 90.29 | 0 | 9726.65 | 2228.63 | 142.78 | 2228.63 | 0 | 385159.72 | 793658.93 | |
| 11600 | 90.29 | 0 | 9726.14 | 2328.63 | 142.78 | 2328.63 | 0 | 385259.72 | 793658.93 | |
| 11700 | 90.29 | 0 | 9725.63 | 2428.63 | 142.78 | 2428.63 | 0 | 385359.72 | 793658.93 | |
| 11800 | 90.29 | 0 | 9725.12 | 2528.63 | 142.78 | 2528.63 | 0 | 385459.72 | 793658.93 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 11900 | 90.29 | 0 | 9724.61 | 2628.62 | 142.78 | 2628.62 | 0 | 385559.71 | 793658.93 | |
| 12000 | 90.29 | 0 | 9724.11 | 2728.62 | 142.78 | 2728.62 | 0 | 385659.71 | 793658.93 | |
| 12100 | 90.29 | 0 | 9723.6 | 2828.62 | 142.78 | 2828.62 | 0 | 385759.71 | 793658.93 | |
| 12200 | 90.29 | 0 | 9723.09 | 2928.62 | 142.78 | 2928.62 | 0 | 385859.71 | 793658.93 | |
| 12300 | 90.29 | 0 | 9722.58 | 3028.62 | 142.78 | 3028.62 | 0 | 385959.71 | 793658.93 | |
| 12400 | 90.29 | 0 | 9722.08 | 3128.62 | 142.78 | 3128.62 | 0 | 386059.71 | 793658.93 | |
| 12500 | 90.29 | 0 | 9721.57 | 3228.62 | 142.78 | 3228.62 | 0 | 386159.71 | 793658.93 | |
| 12600 | 90.29 | 0 | 9721.06 | 3328.62 | 142.78 | 3328.62 | 0 | 386259.71 | 793658.93 | |
| 12700 | 90.29 | 0 | 9720.55 | 3428.61 | 142.78 | 3428.61 | 0 | 386359.7 | 793658.93 | |
| 12800 | 90.29 | 0 | 9720.05 | 3528.61 | 142.78 | 3528.61 | 0 | 386458.7 | 793658.93 | |
| 12900 | 90.29 | 0 | 9719.54 | 3628.61 | 142.78 | 3628.61 | 0 | 386558.7 | 793658.93 | |
| 13000 | 90.29 | 0 | 9719.03 | 3728.61 | 142.78 | 3728.61 | 0 | 386659.7 | 793658.93 | |
| 13100 | 90.29 | 0 | 9718.52 | 3828.61 | 142.78 | 3828.61 | 0 | 386758.7 | 793658.93 | |
| 13200 | 90.29 | 0 | 9718.02 | 3928.61 | 142.78 | 3928.61 | 0 | 386859.7 | 793658.93 | |
| 13300 | 90.29 | 0 | 9717.51 | 4028.61 | 142.78 | 4028.61 | 0 | 386959.7 | 793658.93 | |
| 13400 | 90.29 | 0 | 9717 | 4128.61 | 142.78 | 4128.61 | 0 | 387059.7 | 793658.93 | |
| 13500 | 90.29 | 0 | 9716.49 | 4228.6 | 142.78 | 4228.6 | 0 | 387159.69 | 793658.93 | |
| 13600 | 90.29 | 0 | 9715.98 | 4328.6 | 142.78 | 4328.6 | 0 | 387259.69 | 793658.93 | |
| 13700 | 90.29 | 0 | 9715.48 | 4428.6 | 142.78 | 4428.6 | 0 | 387359.69 | 793658.93 | |
| 13800 | 90.29 | 0 | 9714.97 | 4528.6 | 142.78 | 4528.6 | 0 | 387459.69 | 793658.93 | |
| 13900 | 90.29 | 0 | 9714.46 | 4628.6 | 142.78 | 4628.6 | 0 | 387559.69 | 793658.93 | |
| 14000 | 90.29 | 0 | 9713.95 | 4728.6 | 142.78 | 4728.6 | 0 | 387659.69 | 793658.93 | |
| 14100 | 90.29 | 0 | 9713.45 | 4828.6 | 142.78 | 4828.6 | 0 | 387758.69 | 793658.93 | |
| 14200 | 90.29 | 0 | 9712.94 | 4928.59 | 142.78 | 4928.59 | 0 | 387858.68 | 793658.93 | |
| 14300 | 90.29 | 0 | 9712.43 | 5028.59 | 142.78 | 5028.59 | 0 | 387958.68 | 793658.93 | |
| 14400 | 90.29 | 0 | 9711.92 | 5128.59 | 142.78 | 5128.59 | 0 | 388058.68 | 793658.93 | |
| 14500 | 90.29 | 0 | 9711.42 | 5228.59 | 142.78 | 5228.59 | 0 | 388158.68 | 793658.93 | |
| 14600 | 90.29 | 0 | 9710.91 | 5328.59 | 142.78 | 5328.59 | 0 | 388258.68 | 793658.93 | |
| 14700 | 90.29 | 0 | 9710.4 | 5428.59 | 142.78 | 5428.59 | 0 | 388358.68 | 793658.93 | |
| 14800 | 90.29 | 0 | 9709.89 | 5528.59 | 142.78 | 5528.59 | 0 | 388458.68 | 793658.93 | |
| 14900 | 90.29 | 0 | 9709.38 | 5628.59 | 142.78 | 5628.59 | 0 | 388558.68 | 793658.93 | |
| 15000 | 90.29 | 0 | 9708.88 | 5728.58 | 142.78 | 5728.58 | 0 | 388659.67 | 793658.93 | |
| 15100 | 90.29 | 0 | 9708.37 | 5828.58 | 142.78 | 5828.58 | 0 | 388759.67 | 793658.93 | |
| 15200 | 90.29 | 0 | 9707.86 | 5928.58 | 142.78 | 5928.58 | 0 | 388859.67 | 793658.93 | |
| 15300 | 90.29 | 0 | 9707.35 | 6028.58 | 142.78 | 6028.58 | 0 | 388959.67 | 793658.93 | |
| 15400 | 90.29 | 0 | 9706.85 | 6128.58 | 142.78 | 6128.58 | 0 | 389059.67 | 793658.93 | |
| 15500 | 90.29 | 0 | 9706.34 | 6228.58 | 142.78 | 6228.58 | 0 | 389159.67 | 793658.93 | |
| 15600 | 90.29 | 0 | 9705.83 | 6328.58 | 142.78 | 6328.58 | 0 | 389259.67 | 793658.93 | |
| 15700 | 90.29 | 0 | 9705.32 | 6428.58 | 142.78 | 6428.58 | 0 | 389359.67 | 793658.93 | |
| 15800 | 90.29 | 0 | 9704.82 | 6528.57 | 142.78 | 6528.57 | 0 | 389459.66 | 793658.93 | |
| 15900 | 90.29 | 0 | 9704.31 | 6628.57 | 142.78 | 6628.57 | 0 | 389558.66 | 793658.93 | |
| 16000 | 90.29 | 0 | 9703.8 | 6728.57 | 142.78 | 6728.57 | 0 | 389658.66 | 793658.93 | |
| 16100 | 90.29 | 0 | 9703.29 | 6828.57 | 142.78 | 6828.57 | 0 | 389758.66 | 793658.93 | |
| 16200 | 90.29 | 0 | 9702.79 | 6928.57 | 142.78 | 6928.57 | 0 | 389858.66 | 793658.93 | |
| 16300 | 90.29 | 0 | 9702.28 | 7028.57 | 142.78 | 7028.57 | 0 | 389958.66 | 793658.93 | |
| 16400 | 90.29 | 0 | 9701.77 | 7128.57 | 142.78 | 7128.57 | 0 | 390058.66 | 793658.93 | |
| 16500 | 90.29 | 0 | 9701.26 | 7228.57 | 142.78 | 7228.57 | 0 | 390158.66 | 793658.93 | |
| 16600 | 90.29 | 0 | 9700.75 | 7328.56 | 142.78 | 7328.56 | 0 | 390258.65 | 793658.93 | |
| 16700 | 90.29 | 0 | 9700.25 | 7428.56 | 142.78 | 7428.56 | 0 | 390358.65 | 793658.93 | |
| 16800 | 90.29 | 0 | 9699.74 | 7528.56 | 142.78 | 7528.56 | 0 | 390458.65 | 793658.93 | |
| 16900 | 90.29 | 0 | 9699.23 | 7628.56 | 142.78 | 7628.56 | 0 | 390558.65 | 793658.93 | |
| 17000 | 90.29 | 0 | 9698.72 | 7728.56 | 142.78 | 7728.56 | 0 | 390659.65 | 793658.93 | |
| 17100 | 90.29 | 0 | 9698.22 | 7828.56 | 142.78 | 7828.56 | 0 | 390759.65 | 793658.93 | |
| 17200 | 90.29 | 0 | 9697.71 | 7928.56 | 142.78 | 7928.56 | 0 | 390859.65 | 793658.93 | |
| 17300 | 90.29 | 0 | 9697.2 | 8028.55 | 142.78 | 8028.55 | 0 | 390959.64 | 793658.93 | |
| 17400 | 90.29 | 0 | 9696.69 | 8128.55 | 142.78 | 8128.55 | 0 | 391058.64 | 793658.93 | |
| 17500 | 90.29 | 0 | 9696.19 | 8228.55 | 142.78 | 8228.55 | 0 | 391158.64 | 793658.93 | |
| 17600 | 90.29 | 0 | 9695.68 | 8328.55 | 142.78 | 8328.55 | 0 | 391258.64 | 793658.93 | |
| 17700 | 90.29 | 0 | 9695.17 | 8428.55 | 142.78 | 8428.55 | 0 | 391358.64 | 793658.93 | |
| 17800 | 90.29 | 0 | 9694.66 | 8528.55 | 142.78 | 8528.55 | 0 | 391458.64 | 793658.93 | |
| 17900 | 90.29 | 0 | 9694.16 | 8628.55 | 142.78 | 8628.55 | 0 | 391558.64 | 793658.93 | |
| 18000 | 90.29 | 0 | 9693.65 | 8728.55 | 142.78 | 8728.55 | 0 | 391658.64 | 793658.93 | |
| 18100 | 90.29 | 0 | 9693.14 | 8828.54 | 142.78 | 8828.54 | 0 | 391758.63 | 793658.93 | |
| 18200 | 90.29 | 0 | 9692.63 | 8928.54 | 142.78 | 8928.54 | 0 | 391858.63 | 793658.93 | |
| 18300 | 90.29 | 0 | 9692.13 | 9028.54 | 142.78 | 9028.54 | 0 | 391958.63 | 793658.93 | |
| 18400 | 90.29 | 0 | 9691.62 | 9128.54 | 142.78 | 9128.54 | 0 | 392058.63 | 793658.93 | |
| 18500 | 90.29 | 0 | 9691.11 | 9228.54 | 142.78 | 9228.54 | 0 | 392159.63 | 793658.93 | |
| 18600 | 90.29 | 0 | 9690.6 | 9328.54 | 142.78 | 9328.54 | 0 | 392259.63 | 793658.93 | |
| 18700 | 90.29 | 0 | 9690.09 | 9428.54 | 142.78 | 9428.54 | 0 | 392359.63 | 793658.93 | |
| 18800 | 90.29 | 0 | 9689.59 | 9528.54 | 142.78 | 9528.54 | 0 | 392459.63 | 793658.93 | |
| 18900 | 90.29 | 0 | 9689.08 | 9628.53 | 142.78 | 9628.53 | 0 | 392559.62 | 793658.93 | |
| 19000 | 90.29 | 0 | 9688.57 | 9728.53 | 142.78 | 9728.53 | 0 | 392659.62 | 793658.93 | |
| 19100 | 90.29 | 0 | 9688.06 | 9828.53 | 142.78 | 9828.53 | 0 | 392759.62 | 793658.93 | |
| 19200 | 90.29 | 0 | 9687.56 | 9928.53 | 142.78 | 9928.53 | 0 | 392859.62 | 793658.93 | |
| 19300 | 90.29 | 0 | 9687.05 | 10028.53 | 142.78 | 10028.53 | 0 | 392959.62 | 793658.93 | |
| 19400 | 90.29 | 0 | 9686.54 | 10128.53 | 142.78 | 10128.53 | 0 | 393059.62 | 793658.93 | |
| 19500 | 90.29 | 0 | 9686.03 | 10228.53 | 142.78 | 10228.53 | 0 | 393159.62 | 793658.93 | |
| 19600 | 90.29 | 0 | 9685.53 | 10328.53 | 142.78 | 10328.53 | 0 | 393259.62 | 793658.93 | |
| 19700 | 90.29 | 0 | 9685.02 | 10428.52 | 142.78 | 10428.52 | 0 | 393360.61 | 793658.93 | |
| 19703.43 | 90.29 | 0 | 9685 | 10431.95 | 142.78 | 10431.95 | 0 | 393363.04 | 793658.93 | PBHL 1H Lat |

**Formation Points:** (Relative to Slot Centre, TVD Relative to Kelly Bushing)

| MD (US ft) | Inc (°) | Az (°) | TVD (US ft) | N.Offset (US ft) | E.Offset (US ft) | Northing (US ft) | Easting (US ft) | Name | Comment |
|---|---|---|---|---|---|---|---|---|---|