**District I**
1625 N. French Dr., Hobbs, NM 88240
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Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 277388

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

| 1. Operator Name and Address | 2. OGRID Number |
|---|---|
| Spur Energy Partners LLC<br>920 Memorial City Way<br>Houston, TX 77024 | 328947 |
| | 3. API Number: 30-015-46624 |

| 4. Property Code | 5. Property Name | 6. Well No. |
|---|---|---|
| 325897 | SHELBY 23 | 002H |

**7. Surface Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet From | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| B | 26 | 19S | 25E | | 1246 | N | 1961 | E | Eddy |

**8. Proposed Bottom Hole Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet From | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| B | 23 | 19S | 25E | B | 50 | N | 2250 | E | Eddy |

**9. Pool Information**

| | |
|---|---|
| N. SEVEN RIVERS; GLORIETA-YESO | 97565 |

**Additional Well Information**

| 11. Work Type | 12. Well Type | 13. Cable/Rotary | 14. Lease Type | 15. Ground Level Elevation |
|---|---|---|---|---|
| New Well | OIL | | Private | 3422 |
| **16. Multiple** | **17. Proposed Depth** | **18. Formation** | **19. Contractor** | **20. Spud Date** |
| N | 8517 | Paddock | | 2/20/2020 |
| Depth to Ground water | | Distance from nearest fresh water well | | Distance to nearest surface water |

☒ **We will be using a closed-loop system in lieu of lined pits**

**21. Proposed Casing and Cement Program**

| Type | Hole Size | Casing Size | Casing Weight/ft | Setting Depth | Sacks of Cement | Estimated TOC |
|---|---|---|---|---|---|---|
| Surf | 12.25 | 9.625 | 36 | 1200 | 550 | 0 |
| Prod | 8.75 | 7 | 32 | 2973 | 1490 | 0 |
| Prod | 8.75 | 5.5 | 20 | 8517 | 1490 | 0 |

**Casing/Cement Program: Additional Comments**

**22. Proposed Blowout Prevention Program**

| Type | Working Pressure | Test Pressure | Manufacturer |
|---|---|---|---|
| Blind | 5 | 70 | Control Technology Inc. |

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
**I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.**

Signature:

**OIL CONSERVATION DIVISION**

| | | | | |
|---|---|---|---|---|
| Printed Name: | Electronically filed by Sarah Chapman | Approved By: | Raymond Podany | |
| Title: | Regulatory Director | Title: | Geologist | |
| Email Address: | schapman@spurepllc.com | Approved Date: | 1/23/2020 | Expiration Date: 1/23/2022 |
| Date: | 1/23/2020 Phone: 832-930-8613 | Conditions of Approval Attached | | |

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

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| 1 API Number | 2 Pool Code | 3 Pool Name |
|---|---|---|
| | 97565 | N. Seven Rivers; Glorieta-Yeso |

| 4 Property Code | 5 Property Name | 6 Well Number |
|---|---|---|
| | SHELBY 23 | 2H |

| 7 OGRID NO. | 8 Operator Name | 9 Elevation |
|---|---|---|
| 328947 | SPUR ENERGY PARTNERS LLC | 3422' |

## 10 Surface Location

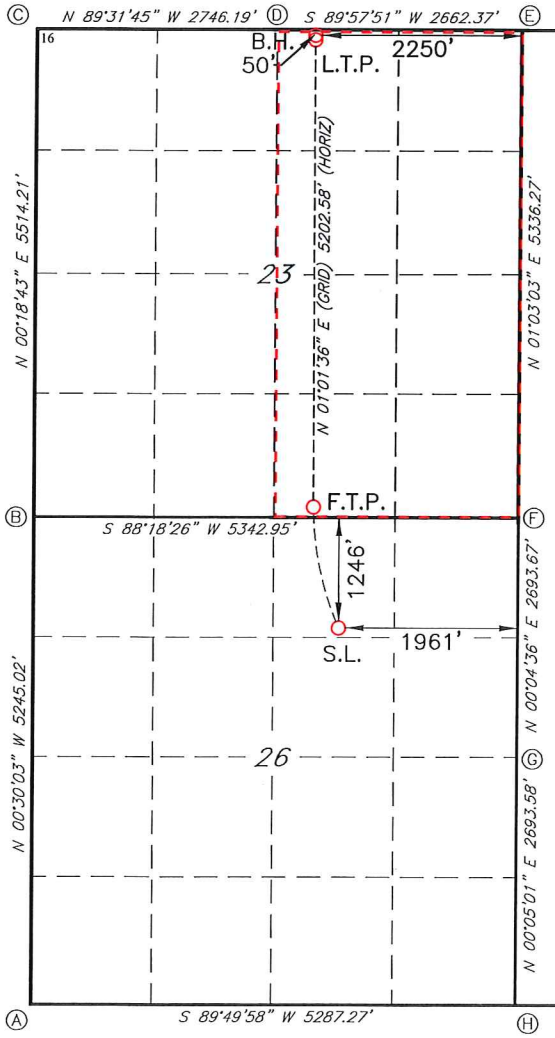
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet From the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| B | 26 | 19S | 25E | | 1246 | NORTH | 1961 | EAST | EDDY |

## 11 Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| B | 23 | 19S | 25E | | 50 | NORTH | 2250 | EAST | EDDY |

| 12 Dedicated Acres | 13 Joint or Infill | 14 Consolidation Code | 15 Order No. |
|---|---|---|---|
| 320 | I | | |

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.




GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION
N: 594944.6 – E: 504431.0
LAT: 32.6354944° N
LONG: 104.4532253° W

FIRST TAKE POINT
100' FSL 2250' & FEL (Sec. 23)
N: 596282.5 – E: 504146.9
LAT: 32.6391711° N
LONG: 104.4541532° W

LAST TAKE POINT
100' FNL 2250' & FEL (Sec. 23)
N: 601481.6 – E: 504240.1
LAT: 32.6534623° N
LONG: 104.4538697° W

BOTTOM HOLE
N: 601531.6 – E: 504241.0
LAT: 32.6535998° N
LONG: 104.4538669° W

CORNER DATA
NAD 83 GRID – NM EAST

A: FOUND 1/2" REBAR
N: 590847.7 – E: 501100.1

B: FOUND 1/2" REBAR
N: 596091.2 – E: 501054.3

C: FOUND 600D NAIL
N: 601603.9 – E: 501084.3

D: FOUND SPIKE NAIL
N: 601581.4 – E: 503829.7

E: FOUND 1/2" REBAR
N: 601583.0 – E: 506491.4

F: FOUND 5/8" REBAR
N: 596249.0 – E: 506393.5

G: FOUND YPC "PS 12641"
N: 593556.0 – E: 506389.9

H: FOUND YPC "PS 12641"
N: 590863.1 – E: 506386.0

## 17 OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Sarah Chapman 1/9/2020
Signature Date

Sarah Chapman
Printed Name

schapman@spurenergy.com
E-mail Address

## 18 SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

12-11-2019
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR

19680
Certificate Number

RRC–Job No: LS19121144

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

## GAS CAPTURE PLAN

Date: 1/23/2020

☒ Original

☐ Amended - Reason for Amendment:

Operator & OGRID No.: [328947] Spur Energy Partners LLC

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

**Well(s)/Production Facility – Name of facility**

The well(s) that will be located at the production facility are shown in the table below.

| Well Name | API | Well Location (ULSTR) | Footages | Expected MCF/D | Flared or Vented | Comments |
|---|---|---|---|---|---|---|
| SHELBY 23 #002H | 30-015-46624 | B-26-19S-25E | 1246N 1961E | 600 | Flared | Will flare until tie-in constructed. |

**Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP Low Pressure gathering system located in Eddy County, New Mexico. It will require 1100' of pipeline to connect the facility to Low Pressure gathering system. Spur Energy Partners LLC provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Spur Energy Partners LLC and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 36, Twn. 19S, Rng. 24E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

**Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is Spur Energy Partners LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

**Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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

Form APD Comments

Permit 277388

## PERMIT COMMENTS

| Operator Name and Address: | API Number: |
|---|---|
| Spur Energy Partners LLC [328947]<br>920 Memorial City Way<br>Houston, TX 77024 | 30-015-46624 |
| | Well: SHELBY 23 #002H |

| Created By | Comment | Comment Date |
|---|---|---|
| schapman01 | Mailed in hard copies of the attachments. | 1/20/2020 |
| rpodany | bad input of BHL. 2 different BHL listed | 1/22/2020 |
| schapman01 | I have corrected the BHLs. Thanks. | 1/23/2020 |

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

Form APD Conditions

Permit 277388

## PERMIT CONDITIONS OF APPROVAL

| Operator Name and Address: | API Number: |
|---|---|
| Spur Energy Partners LLC [328947]<br>920 Memorial City Way<br>Houston, TX 77024 | 30-015-46624 |
| | Well:<br>SHELBY 23 #002H |

| OCD Reviewer | Condition |
|---|---|
| rpodany | Will require a directional survey with the C-104 |
| rpodany | Cement is required to circulate on both surface and intermediate1 strings of casing |

# Spur Energy Partners, LLC

**Eddy County, NM (NAD 83 - NME)**
**Shelby 23**
**#2H**
**OH**

**Plan: Plan #1**

# Standard Plan With Toolface

**14 January, 2020**

SPUR ENERGY PARTNERS

# Wellbenders

## Standard Plan With Toolface

| | | | |
|---|---|---|---|
| **Company:** | Spur Energy Partners, LLC | **Local Co-ordinate Reference:** | Well #2H |
| **Project:** | Eddy County, NM (NAD 83 - NME) | **TVD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Site:** | Shelby 23 | **MD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Well:** | #2H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | WBDS_SQL_2 |

**Project** Eddy County, NM (NAD 83 - NME)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

**Site** Shelby 23

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 594,944.60 usft | **Latitude:** | 32.635495 |
| **From:** | Map | **Easting:** | 504,431.00 usft | **Longitude:** | -104.453225 |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | -0.065 ° |

**Well** #2H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 594,944.60 usft | **Latitude:** | 32.635495 |
| | **+E/-W** | 0.00 usft | **Easting:** | 504,431.00 usft | **Longitude:** | -104.453225 |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 3,422.00 usft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2015 | 1/14/2020 | 7.116 | 60.266 | 47,821.53727025 |

**Design** Plan #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 1.03 |

**Survey Tool Program** **Date** 1/14/2020

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.00 | 8,517.70 | Plan #1 (OH) | MWD+IGRF | OWSG MWD + IGRF or WMM |

SPUR ENERGY PARTNERS

# Wellbenders

## Standard Plan With Toolface

| | | | |
|---|---|---|---|
| **Company:** | Spur Energy Partners, LLC | **Local Co-ordinate Reference:** | Well #2H |
| **Project:** | Eddy County, NM (NAD 83 - NME) | **TVD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Site:** | Shelby 23 | **MD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Well:** | #2H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | WBDS_SQL_2 |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 |
| 400.00 | 2.00 | 333.17 | 399.98 | 1.56 | -0.79 | 1.54 | 2.00 | 2.00 | 0.00 | 333.167 |
| 500.00 | 4.00 | 333.17 | 499.84 | 6.23 | -3.15 | 6.17 | 2.00 | 2.00 | 0.00 | 0.000 |
| 600.00 | 6.00 | 333.17 | 599.45 | 14.00 | -7.08 | 13.87 | 2.00 | 2.00 | 0.00 | 0.000 |
| 700.00 | 8.00 | 333.17 | 698.70 | 24.88 | -12.58 | 24.65 | 2.00 | 2.00 | 0.00 | 0.000 |
| 800.00 | 10.00 | 333.17 | 797.47 | 38.84 | -19.65 | 38.48 | 2.00 | 2.00 | 0.00 | 0.000 |
| 900.00 | 12.00 | 333.17 | 895.62 | 55.86 | -28.26 | 55.34 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,000.00 | 14.00 | 333.17 | 993.06 | 75.93 | -38.41 | 75.23 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,100.00 | 16.00 | 333.17 | 1,089.64 | 99.03 | -50.09 | 98.11 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,200.00 | 18.00 | 333.17 | 1,185.27 | 125.12 | -63.29 | 123.96 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,300.00 | 20.00 | 333.17 | 1,279.82 | 154.17 | -77.99 | 152.74 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,400.00 | 22.00 | 333.17 | 1,373.17 | 186.14 | -94.16 | 184.42 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,500.00 | 24.00 | 333.17 | 1,465.21 | 221.01 | -111.80 | 218.96 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,574.26 | 25.49 | 333.17 | 1,532.66 | 248.74 | -125.83 | 246.44 | 2.00 | 2.00 | 0.00 | 0.000 |
| 1,600.00 | 25.49 | 333.17 | 1,555.89 | 258.62 | -130.83 | 256.23 | 0.00 | 0.00 | 0.00 | 0.000 |
| 1,700.00 | 25.49 | 333.17 | 1,646.16 | 297.02 | -150.25 | 294.27 | 0.00 | 0.00 | 0.00 | 0.000 |
| 1,800.00 | 25.49 | 333.17 | 1,736.43 | 335.41 | -169.67 | 332.31 | 0.00 | 0.00 | 0.00 | 0.000 |
| 1,900.00 | 25.49 | 333.17 | 1,826.70 | 373.81 | -189.09 | 370.35 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,000.00 | 25.49 | 333.17 | 1,916.97 | 412.20 | -208.52 | 408.39 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,100.00 | 25.49 | 333.17 | 2,007.24 | 450.60 | -227.94 | 446.43 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,123.31 | 25.49 | 333.17 | 2,028.28 | 459.55 | -232.47 | 455.29 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,150.00 | 26.72 | 335.47 | 2,052.25 | 470.13 | -237.55 | 465.78 | 6.00 | 4.64 | 8.64 | 40.372 |
| 2,200.00 | 29.13 | 339.29 | 2,096.42 | 491.75 | -246.52 | 487.24 | 6.00 | 4.82 | 7.64 | 38.300 |
| 2,250.00 | 31.64 | 342.57 | 2,139.56 | 515.65 | -254.76 | 510.99 | 6.00 | 5.00 | 6.55 | 34.923 |

SPUR ENERGY PARTNERS

# Wellbenders

## Standard Plan With Toolface

| | | | |
|---|---|---|---|
| **Company:** | Spur Energy Partners, LLC | **Local Co-ordinate Reference:** | Well #2H |
| **Project:** | Eddy County, NM (NAD 83 - NME) | **TVD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Site:** | Shelby 23 | **MD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Well:** | #2H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | WBDS_SQL_2 |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,300.00 | 34.21 | 345.40 | 2,181.53 | 541.77 | -262.23 | 536.97 | 6.00 | 5.15 | 5.67 | 32.098 |
| 2,350.00 | 36.84 | 347.88 | 2,222.22 | 570.03 | -268.92 | 565.11 | 6.00 | 5.26 | 4.96 | 29.717 |
| 2,400.00 | 39.52 | 350.07 | 2,261.52 | 600.37 | -274.81 | 595.33 | 6.00 | 5.35 | 4.38 | 27.698 |
| 2,450.00 | 42.23 | 352.03 | 2,299.32 | 632.69 | -279.88 | 627.55 | 6.00 | 5.43 | 3.91 | 25.976 |
| 2,500.00 | 44.98 | 353.79 | 2,335.53 | 666.90 | -284.12 | 661.69 | 6.00 | 5.49 | 3.52 | 24.497 |
| 2,550.00 | 47.75 | 355.39 | 2,370.03 | 702.92 | -287.53 | 697.64 | 6.00 | 5.54 | 3.20 | 23.223 |
| 2,600.00 | 50.53 | 356.85 | 2,402.74 | 740.65 | -290.08 | 735.31 | 6.00 | 5.58 | 2.93 | 22.120 |
| 2,650.00 | 53.34 | 358.20 | 2,433.56 | 779.97 | -291.77 | 774.60 | 6.00 | 5.61 | 2.70 | 21.163 |
| 2,700.00 | 56.16 | 359.45 | 2,462.42 | 820.79 | -292.60 | 815.40 | 6.00 | 5.64 | 2.51 | 20.330 |
| 2,750.00 | 58.99 | 0.63 | 2,489.22 | 862.99 | -292.56 | 857.59 | 6.00 | 5.66 | 2.35 | 19.606 |
| 2,767.76 | 60.00 | 1.03 | 2,498.24 | 878.29 | -292.34 | 872.89 | 6.00 | 5.68 | 2.25 | 18.977 |
| 2,800.00 | 60.00 | 1.03 | 2,514.36 | 906.21 | -291.84 | 900.81 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,900.00 | 60.00 | 1.03 | 2,564.36 | 992.79 | -290.29 | 987.42 | 0.00 | 0.00 | 0.00 | 0.000 |
| 2,967.76 | 60.00 | 1.03 | 2,598.24 | 1,051.47 | -289.23 | 1,046.10 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,000.00 | 63.22 | 1.03 | 2,613.56 | 1,079.82 | -288.73 | 1,074.46 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,050.00 | 68.22 | 1.03 | 2,634.11 | 1,125.38 | -287.91 | 1,120.02 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,100.00 | 73.22 | 1.03 | 2,650.62 | 1,172.55 | -287.06 | 1,167.20 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,150.00 | 78.22 | 1.03 | 2,662.94 | 1,220.99 | -286.20 | 1,215.64 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,200.00 | 83.22 | 1.03 | 2,671.00 | 1,270.31 | -285.31 | 1,264.97 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,250.00 | 88.22 | 1.03 | 2,674.72 | 1,320.15 | -284.42 | 1,314.82 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,267.76 | 90.00 | 1.03 | 2,675.00 | 1,337.90 | -284.10 | 1,332.58 | 10.00 | 10.00 | 0.00 | 0.000 |
| 3,300.00 | 90.00 | 1.03 | 2,675.00 | 1,370.13 | -283.52 | 1,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,400.00 | 90.00 | 1.03 | 2,675.00 | 1,470.12 | -281.73 | 1,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,500.00 | 90.00 | 1.03 | 2,675.00 | 1,570.10 | -279.94 | 1,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,600.00 | 90.00 | 1.03 | 2,675.00 | 1,670.09 | -278.14 | 1,664.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,700.00 | 90.00 | 1.03 | 2,675.00 | 1,770.07 | -276.35 | 1,764.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 3,800.00 | 90.00 | 1.03 | 2,675.00 | 1,870.05 | -274.56 | 1,864.82 | 0.00 | 0.00 | 0.00 | 0.000 |

SPUR ENERGY PARTNERS

# Wellbenders

## Standard Plan With Toolface

| | | | |
|---|---|---|---|
| **Company:** | Spur Energy Partners, LLC | **Local Co-ordinate Reference:** | Well #2H |
| **Project:** | Eddy County, NM (NAD 83 - NME) | **TVD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Site:** | Shelby 23 | **MD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Well:** | #2H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | WBDS_SQL_2 |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3,900.00 | 90.00 | 1.03 | 2,675.00 | 1,970.04 | -272.77 | 1,964.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,000.00 | 90.00 | 1.03 | 2,675.00 | 2,070.02 | -270.98 | 2,064.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,100.00 | 90.00 | 1.03 | 2,675.00 | 2,170.01 | -269.18 | 2,164.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,200.00 | 90.00 | 1.03 | 2,675.00 | 2,269.99 | -267.39 | 2,264.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,300.00 | 90.00 | 1.03 | 2,675.00 | 2,369.97 | -265.60 | 2,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,400.00 | 90.00 | 1.03 | 2,675.00 | 2,469.96 | -263.81 | 2,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,500.00 | 90.00 | 1.03 | 2,675.00 | 2,569.94 | -262.01 | 2,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,600.00 | 90.00 | 1.03 | 2,675.00 | 2,669.93 | -260.22 | 2,664.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,700.00 | 90.00 | 1.03 | 2,675.00 | 2,769.91 | -258.43 | 2,764.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,800.00 | 90.00 | 1.03 | 2,675.00 | 2,869.89 | -256.64 | 2,864.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 4,900.00 | 90.00 | 1.03 | 2,675.00 | 2,969.88 | -254.84 | 2,964.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,000.00 | 90.00 | 1.03 | 2,675.00 | 3,069.86 | -253.05 | 3,064.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,100.00 | 90.00 | 1.03 | 2,675.00 | 3,169.85 | -251.26 | 3,164.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,200.00 | 90.00 | 1.03 | 2,675.00 | 3,269.83 | -249.47 | 3,264.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,300.00 | 90.00 | 1.03 | 2,675.00 | 3,369.81 | -247.67 | 3,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,400.00 | 90.00 | 1.03 | 2,675.00 | 3,469.80 | -245.88 | 3,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,500.00 | 90.00 | 1.03 | 2,675.00 | 3,569.78 | -244.09 | 3,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,600.00 | 90.00 | 1.03 | 2,675.00 | 3,669.77 | -242.30 | 3,664.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,700.00 | 90.00 | 1.03 | 2,675.00 | 3,769.75 | -240.50 | 3,764.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,800.00 | 90.00 | 1.03 | 2,675.00 | 3,869.73 | -238.71 | 3,864.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 5,900.00 | 90.00 | 1.03 | 2,675.00 | 3,969.72 | -236.92 | 3,964.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,000.00 | 90.00 | 1.03 | 2,675.00 | 4,069.70 | -235.13 | 4,064.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,100.00 | 90.00 | 1.03 | 2,675.00 | 4,169.68 | -233.33 | 4,164.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,200.00 | 90.00 | 1.03 | 2,675.00 | 4,269.67 | -231.54 | 4,264.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,300.00 | 90.00 | 1.03 | 2,675.00 | 4,369.65 | -229.75 | 4,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,400.00 | 90.00 | 1.03 | 2,675.00 | 4,469.64 | -227.96 | 4,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,500.00 | 90.00 | 1.03 | 2,675.00 | 4,569.62 | -226.17 | 4,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |

SPUR ENERGY PARTNERS

# Wellbenders

## Standard Plan With Toolface

| | | | |
|---|---|---|---|
| **Company:** | Spur Energy Partners, LLC | **Local Co-ordinate Reference:** | Well #2H |
| **Project:** | Eddy County, NM (NAD 83 - NME) | **TVD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Site:** | Shelby 23 | **MD Reference:** | RKB=18.9' @ 3440.90usft (Akita 57) |
| **Well:** | #2H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | WBDS_SQL_2 |

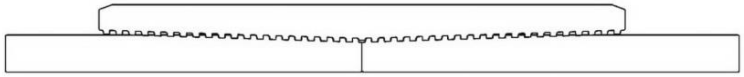
**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6,600.00 | 90.00 | 1.03 | 2,675.00 | 4,669.60 | -224.37 | 4,664.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,700.00 | 90.00 | 1.03 | 2,675.00 | 4,769.59 | -222.58 | 4,764.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,800.00 | 90.00 | 1.03 | 2,675.00 | 4,869.57 | -220.79 | 4,864.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 6,900.00 | 90.00 | 1.03 | 2,675.00 | 4,969.56 | -219.00 | 4,964.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,000.00 | 90.00 | 1.03 | 2,675.00 | 5,069.54 | -217.20 | 5,064.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,100.00 | 90.00 | 1.03 | 2,675.00 | 5,169.52 | -215.41 | 5,164.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,200.00 | 90.00 | 1.03 | 2,675.00 | 5,269.51 | -213.62 | 5,264.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,300.00 | 90.00 | 1.03 | 2,675.00 | 5,369.49 | -211.83 | 5,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,400.00 | 90.00 | 1.03 | 2,675.00 | 5,469.48 | -210.03 | 5,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,500.00 | 90.00 | 1.03 | 2,675.00 | 5,569.46 | -208.24 | 5,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,600.00 | 90.00 | 1.03 | 2,675.00 | 5,669.44 | -206.45 | 5,664.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,700.00 | 90.00 | 1.03 | 2,675.00 | 5,769.43 | -204.66 | 5,764.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,800.00 | 90.00 | 1.03 | 2,675.00 | 5,869.41 | -202.86 | 5,864.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 7,900.00 | 90.00 | 1.03 | 2,675.00 | 5,969.40 | -201.07 | 5,964.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,000.00 | 90.00 | 1.03 | 2,675.00 | 6,069.38 | -199.28 | 6,064.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,100.00 | 90.00 | 1.03 | 2,675.00 | 6,169.36 | -197.49 | 6,164.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,200.00 | 90.00 | 1.03 | 2,675.00 | 6,269.35 | -195.69 | 6,264.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,300.00 | 90.00 | 1.03 | 2,675.00 | 6,369.33 | -193.90 | 6,364.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,400.00 | 90.00 | 1.03 | 2,675.00 | 6,469.32 | -192.11 | 6,464.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,467.70 | 90.00 | 1.03 | 2,675.00 | 6,537.00 | -190.90 | 6,532.51 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,500.00 | 90.00 | 1.03 | 2,675.00 | 6,569.30 | -190.32 | 6,564.82 | 0.00 | 0.00 | 0.00 | 0.000 |
| 8,517.70 | 90.00 | 1.03 | 2,675.00 | 6,587.00 | -190.00 | 6,582.52 | 0.00 | 0.00 | 0.00 | 0.000 |

Checked By: _____ Approved By: _____ Date: _____

PRECISION

*Keeping You Connected.*



SEMI PREMIUMCONNECTIONS
FIELD TESTED. FIELD PROVEN.

# Precision Connections BK-HT
## 5.5 in. 20 lb/ft L-80 with 6.3 in. Coupling OD

### Pipe Body

| | | |
|---|---|---|
| Nominal OD | 5.500 | inches |
| Nominal Weight | 20.00 | lb/ft |
| Wall Thickness | 0.361 | inches |
| Plain End Weight | 19.81 | lb/ft |
| Drift | 4.653 | inches |
| Nominal ID | 4.778 | inches |
| Grade | L-80 | |
| Min Yield | 80,000 | lbf/in² |
| Min Tensile | 95,000 | lbf/in² |
| Critical Section Area | 5.828 | in² |
| Pipe Body Yield Strength | 466 | kips |
| Min Internal Yield Pressure | 9,190 | psi |
| Collapse Pressure | 8,830 | psi |

### Connection

| | | |
|---|---|---|
| Coupling OD | 6.300 | inches |
| Coupling Length | 8.250 | inches |
| Make Up Loss | 4.125 | inches |
| Critical Section Area | 8.456 | in² |
| Internal Pressure Rating | 100% | |
| External Pressure Rating | 100% | |
| Tension Efficiency | 100% | |
| Connection Strength | 466 | kips |
| Compression Efficiency | 100% | |
| Uniaxial Bend Rating | 58.2 | ° / 100 ft |
| Min Make Up Torque | 6,050 | ft-lbs |
| Yield Torque | 23,250 | ft-lbs |

v1.2 7/26/2018

PRECISION

*Keeping You Connected.*

SEMI PREMIUMCONNECTIONS

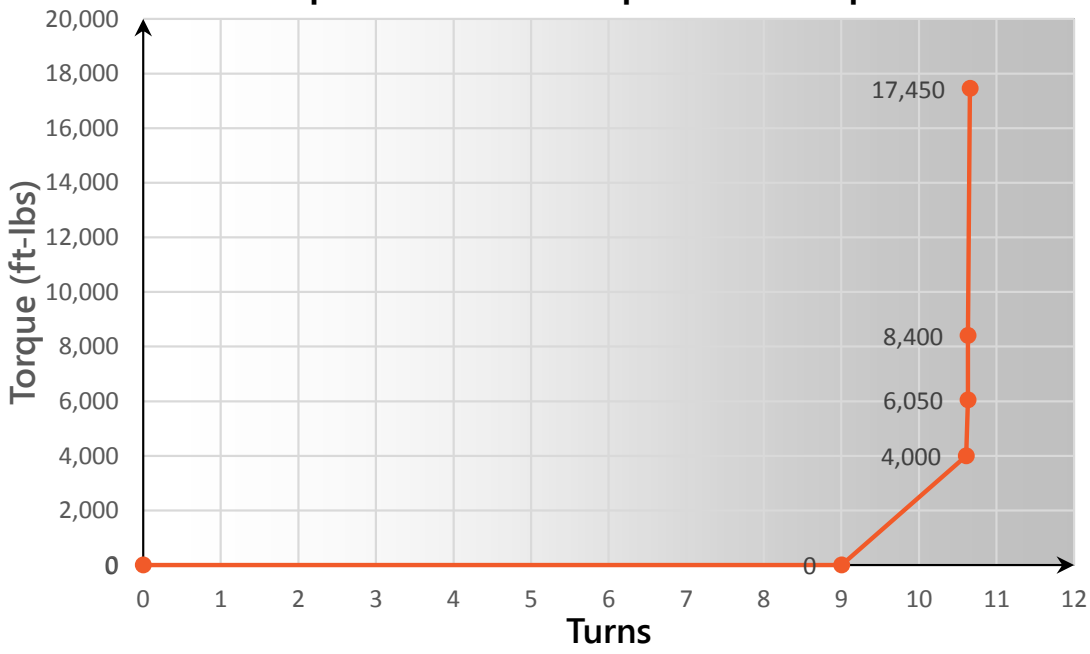
FIELD TESTED. FIELD PROVEN.

# Torque Data Sheet - Precision Connections BK-HT

## 5.5 in. 20 lb/ft L-80 with 6.3 in. Coupling OD

| | | | | | |
|---|---|---|---|---|---|
| Min Make Up Torque | 6,050 | ft-lbs | Max Operating Torque | 19,800 | ft-lbs |
| Max Make Up Torque | 17,450 | ft-lbs | Yield Torque | 23,250 | ft-lbs |
| Optimum Torque | 8,400 | ft-lbs | | | |

### Representative Torque Turn Graph




v1.2 7/26/2018

# Hydrogen Sulfide (H2S)

# Contingency Plan

## For

# Spur Energy Partners

# New Mexico Operations

# Spur Energy Partners

# New Mexico Operations

# Hydrogen Sulfide Operation Plan

**Introduction:**

H2S is a toxic, poisonous gas that could cause death or injury. The objective of this contingency plan is to provide an organized plan of action for alerting and protecting the public from H2S exposure in the event a potentially hazardous volume is accidentally released to the atmosphere. This plan should be activated immediately if any such release occurs. The Superintendent is responsible for initiating and carrying out the plan.

**Characteristics of H2S and SO2:**

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | H2S | 1.189 Air= 1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | S02 | 2.21 Air= 1 | 2 ppm | N/A | 1000 ppm |

**Scope:**

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas ($H_2S$).

**Objective:**

Prevent any and all accidents, and prevent the uncontrolled release of $H_2S$ into the atmosphere. Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

**$H_2S$ Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of $H_2S$ detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of $H_2S$ metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the $H_2S$ Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable $H_2S$ zone (within 3 days or 500 feet) and weekly $H_2S$ and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific $H_2S$ Drilling Operations Plan and the Public Protection Plan.

Note: All $H_2S$ safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

**Well Control Equipment**

A. Flare Line installed
B. Choke Manifold
C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

**Protective equipment for essential personnel:**

30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

**H2S detection and monitoring equipment:**

Portable $H_2S$ monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H2S levels of 20 PPM are reached. These units are usually capable of detecting $SO_2$, which is a byproduct of burning H2S.

**Visual warning systems:**

A. Wind direction indicators as shown on well site diagram
B. Caution/ Danger signs shall be posted on roads providing direct access to locations Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

**Mud program:**

The mud program has been designed to minimize the volume of $H_2S$ circulated to surface. Proper mud weight, safe drilling practices and the use of $H_2S$ scavengers will minimize hazards when penetrating $H_2S$ bearing zones.

**Metallurgy:**

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H2S trim.

B. All elastomers used for packing and seals shall be H2S trim.

**Communication:**

A. Radio communications in company vehicles including cellular telephones and 2-way radio

B. Land line (telephone) communications at Office

**Well testing:**

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

B. There will be no drill stem testing.

## Emergency Procedures

Assumed 100 ppm Radius Of Exposure (ROE) =3000'

100 ppm H2S concentration shall trigger activation of this plan.

In the event of a release of gas containing H2S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H2S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (S02). Intentional ignition must be

coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

**Contacting Authorities**

Company personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Spur Energy Partners response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

## Spur Energy Partners Company Call List

| | |
|---|---|
| Superintendent - Jerry Mathews | 575-748-5234 |
| Engineer – Michael Sliva | 281-723-1473 |
| Vice President Oper. - Todd Mucha | 832-930-8515 |
| HSE Manager – Mike Schoch | 713-816-6350 |

## Lea County Agency Call List - (575)

### Hobbs

| | |
|---|---|
| State Police | 392-5588 |
| City Police | 397-9265 |
| Sheriff's Office | 393-2515 |
| Ambulance | 911 |
| Fire Department | 397-9308 |
| LEPC (Local Emergency Planning Committee) | 393-2870 |
| NMOCD | 393-6161 |
| US Bureau of Land Management | 393-3612 |

## Eddy County Agency Call List - (575)

### Carlsbad

| | |
|---|---|
| State Police | 885-3137 |
| City Police | 885-2111 |
| Sheriff's Office | 887-7551 |
| Ambulance | 911 |
| Fire Department | 885-2111 |
| LEPC (Local Emergency Planning Committee) | 887-3798 |
| US Bureau of Land Management | 887-6544 |
| NM Emergency Response Commission (Santa Fe). | (505) 476-9600 |
| 24 HR | (505) 827-9126 |
| National Emergency Response Center (Washington, DC) | (800) 424-8802 |

## Emergency Services

| | |
|---|---|
| Hungry Hock Environmental | (575)-393-3386 |
| Flight For Life - Lubbock, TX | (806) 743-9911 |
| Aerocare - Lubbock, TX | (806) 747-8923 |
| Med Flight Air Amb - Albuquerque, NM | (575) 842-4433 |
| Lifeguard Air Med Svc. Albuquerque, NM | (575) 272-3115 |

# Hydrogen Sulfide (H2S)

# Contingency Plan

## For

# Spur Energy Partners

# New Mexico Operations

# Spur Energy Partners

# New Mexico Operations

# Hydrogen Sulfide Operation Plan

**Introduction:**

H2S is a toxic, poisonous gas that could cause death or injury. The objective of this contingency plan is to provide an organized plan of action for alerting and protecting the public from H2S exposure in the event a potentially hazardous volume is accidentally released to the atmosphere. This plan should be activated immediately if any such release occurs. The Superintendent is responsible for initiating and carrying out the plan.

**Characteristics of H2S and SO2:**

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | H2S | 1.189 Air= 1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | S02 | 2.21 Air= 1 | 2 ppm | N/A | 1000 ppm |

**Scope:**

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas ($H_2S$).

**Objective:**

Prevent any and all accidents, and prevent the uncontrolled release of $H_2S$ into the atmosphere. Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

**$H_2S$ Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of $H_2S$ detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of $H_2S$ metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the $H_2S$ Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable $H_2S$ zone (within 3 days or 500 feet) and weekly $H_2S$ and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific $H_2S$ Drilling Operations Plan and the Public Protection Plan.

Note: All $H_2S$ safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

**Well Control Equipment**

A. Flare Line installed
B. Choke Manifold
C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

**Protective equipment for essential personnel:**

30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

**H2S detection and monitoring equipment:**

Portable $H_2S$ monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H2S levels of 20 PPM are reached. These units are usually capable of detecting $SO_2$, which is a byproduct of burning H2S.

**Visual warning systems:**

A. Wind direction indicators as shown on well site diagram
B. Caution/ Danger signs shall be posted on roads providing direct access to locations Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

**Mud program:**

The mud program has been designed to minimize the volume of $H_2S$ circulated to surface. Proper mud weight, safe drilling practices and the use of $H_2S$ scavengers will minimize hazards when penetrating $H_2S$ bearing zones.

**Metallurgy:**

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H2S trim.

B. All elastomers used for packing and seals shall be H2S trim.

**Communication:**

A. Radio communications in company vehicles including cellular telephones and 2-way radio

B. Land line (telephone) communications at Office

**Well testing:**

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

B. There will be no drill stem testing.

## Emergency Procedures

Assumed 100 ppm Radius Of Exposure (ROE) =3000'

100 ppm H2S concentration shall trigger activation of this plan.

In the event of a release of gas containing H2S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H2S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (S02). Intentional ignition must be

coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

**Contacting Authorities**

Company personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Spur Energy Partners response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

## Spur Energy Partners Company Call List

| | |
|---|---|
| Superintendent - Jerry Mathews | 575-748-5234 |
| Engineer – Michael Sliva | 281-723-1473 |
| Vice President Oper. - Todd Mucha | 832-930-8515 |
| HSE Manager – Mike Schoch | 713-816-6350 |

## Lea County Agency Call List - (575)

**Hobbs**

| | |
|---|---|
| State Police | 392-5588 |
| City Police | 397-9265 |
| Sheriff's Office | 393-2515 |
| Ambulance | 911 |
| Fire Department | 397-9308 |
| LEPC (Local Emergency Planning Committee) | 393-2870 |
| NMOCD | 393-6161 |
| US Bureau of Land Management | 393-3612 |

## Eddy County Agency Call List - (575)

**Carlsbad**

| | |
|---|---|
| State Police | 885-3137 |
| City Police | 885-2111 |
| Sheriff's Office | 887-7551 |
| Ambulance | 911 |
| Fire Department | 885-2111 |
| LEPC (Local Emergency Planning Committee) | 887-3798 |
| US Bureau of Land Management | 887-6544 |
| NM Emergency Response Commission (Santa Fe). | (505) 476-9600 |
| 24 HR | (505) 827-9126 |
| National Emergency Response Center (Washington, DC) | (800) 424-8802 |

## Emergency Services

| | |
|---|---|
| Hungry Hock Environmental | (575)-393-3386 |
| Flight For Life - Lubbock, TX | (806) 743-9911 |
| Aerocare - Lubbock, TX | (806) 747-8923 |
| Med Flight Air Amb - Albuquerque, NM | (575) 842-4433 |
| Lifeguard Air Med Svc. Albuquerque, NM | (575) 272-3115 |