

Submit 1 Copy To Appropriate District Office  
District I - (575) 393-6161  
1625 N. French Dr., Hobbs, NM 88240  
District II - (575) 748-1283  
811 S. First St., Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV - (505) 476-3460  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
October 13, 2009

HOBBS OCD

JUL 25 2011

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

|                                                                                                     |
|-----------------------------------------------------------------------------------------------------|
| WELL API NO.<br>30-041-20647                                                                        |
| 5. Indicate Type of Lease<br>STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/> |
| 6. State Oil & Gas Lease No.                                                                        |
| 7. Lease Name or Unit Agreement Name<br>Milnesand Unit                                              |
| 8. Well Number #522                                                                                 |
| 9. OGRID Number<br>257420                                                                           |
| 10. Pool name or Wildcat<br>46930 - Milnesand-San Andres                                            |

SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

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

2. Name of Operator  
EOR Operating Company

3. Address of Operator  
200 N. Loraine, STE 1440 Midland, TX 79701

4. Well Location

Unit Letter B : 90 feet from the N line and 1360 feet from the E line  
Section 13 Township 8S Range 34E NMPM County Roosevelt

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐  
DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: Recomplete Horizontally ☒

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

The MSU #522 is currently producing from the San Andres perforations located @ 4524'-4570' & 4580'-4625'. Current PBTD is 4702'. EOR proposes to perform the attached operation in order to recomplete this well horizontally in the San Andres formation.

April 17, 2012  
Permit Expires 2 Years From Approval  
Date Unless Drilling Underway Per ACD-274  
Horizontal

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Jana True TITLE Prod. Asst. DATE 6/27/11

Type or print name Jana True E-mail address: jtrue@enhancedoilres.com PHONE: 432-687-0303

For State Use Only

APPROVED BY: [Signature] TITLE PETROLEUM ENGINEER DATE OCT 27 2011

OCD CONDITIONS OF APPROVAL==  
Approval For Record Only, Intent requires  
BLM Approval

OCT 27 2011



Milnesand Unit Well #522  
Proposed Horizontal Drilling Program  
API # 30-041-20647  
90 FNL 1360 FEL  
B-13-08S-34E  
Roosevelt Co, NM

**Proposed Procedure**

1. NU 3k BOPE and POH with rods and tubing.
2. RUWL and RIH with 5 ½" CIBP. Correlate depth, and set CIBP at KOP of 4250'. POH and RDWL.
3. PU 4 3/4" bit and 5 ½" scraper on tubing. RIH and tag CIBP and test with weight. POH and LD bit and scraper.
4. Run 5 ½" whipstock on tubing to CIBP. Orient whipstock with gyro and set bottom trip anchor on CIBP, POH.
5. PU milling BHA, tag whipstock, and mill window in 5 ½" casing and 8' of new hole. POH with mill assembly.
6. PU drilling BHA and commence drilling with a 20°/100' build rate as per the attached directional plan and survey.
7. At TD, run 3 ½" 9.3# L80 FJ liner and set from TD to vertical section of 5 ½" casing. Liner will have packers (PEAK or equivalent) with frac ports and will not be cemented. Number of ports and packers run will be dictated by length and number of shows and porous interval drilled.
8. Fracture treat through ports separated by packers.

**Mud Program**

This lateral will be drilled with a closed loop mud system. After milling out the casing window with clear fresh water, the directional interval will be drilled with a polymer based fresh water system using the following parameters:

| Hole Size<br>(Inches) | Depth<br>MD/TVD<br>(ft) | Mud<br>Density<br>(ppg) | Viscosity<br>(sec/1000cc) | Plastic<br>Viscosity<br>(cP) | Yield Point<br>(lb/100ft^2) | API<br>Fluid<br>Loss<br>(ml) | pH       | LGS% |
|-----------------------|-------------------------|-------------------------|---------------------------|------------------------------|-----------------------------|------------------------------|----------|------|
| 4.75                  | KOP-TD                  | 8.4-8.7                 | 34-36                     | 4-10                         | 4-12                        | 10-12                        | 9.5-10.0 | <6   |



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**HOBBS OCD**

**JUL 25 2011**

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## **Drilling Services**

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## **Proposal**

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## **EOR OPERATING**

MILNESAND UNIT 522

ROOSEVELT CO, NM

WELL FILE: **PLAN 1**

MAY 25, 2011

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**Weatherford International, Ltd.**

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Midland, TX 79711 USA

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[www.weatherford.com](http://www.weatherford.com)

# EOR Operating

Milnesand Unit 522  
Roosevelt Co, NM

## SECTION DETAILS

| Sec | MD      | Inc   | Azi    | TVD     | +N/-S | +E/-W    | DLeg  | TFace  | VSec    | Target |
|-----|---------|-------|--------|---------|-------|----------|-------|--------|---------|--------|
| 1   | 0.00    | 0.00  | 0.00   | 0.00    | 0.00  | 0.00     | 0.00  | 0.00   | 0.00    |        |
| 2   | 4234.90 | 0.00  | 0.00   | 4234.90 | 0.00  | 0.00     | 0.00  | 0.00   | 0.00    |        |
| 3   | 4234.90 | 3.00  | 270.00 | 4249.89 | 0.00  | -0.39    | 20.00 | 270.00 | 0.39    |        |
| 4   | 4254.90 | 3.00  | 270.00 | 4254.89 | 0.00  | -0.65    | 0.00  | 0.00   | 0.65    |        |
| 5   | 4678.26 | 87.67 | 270.00 | 4536.14 | 0.00  | -275.11  | 20.00 | 0.00   | 275.11  |        |
| 6   | 6965.04 | 87.67 | 270.00 | 4619.00 | 0.00  | -2560.00 | 0.00  | 0.00   | 2560.00 | Pbhl   |

## WELL DETAILS

| Name    | +N/-S | +E/-W | Northing  | Easting   | Latitude      | Longitude      | Slot |
|---------|-------|-------|-----------|-----------|---------------|----------------|------|
| MSU 522 | 0.00  | 0.00  | 957289.90 | 780147.37 | 33°37'41.232N | 103°24'46.800W | N/A  |

## TARGET DETAILS

| Name | TVD     | +N/-S | +E/-W    | Northing  | Easting   | Shape |
|------|---------|-------|----------|-----------|-----------|-------|
| Pbhl | 4619.00 | 0.00  | -2560.00 | 957267.12 | 777587.47 | Point |

## FIELD DETAILS

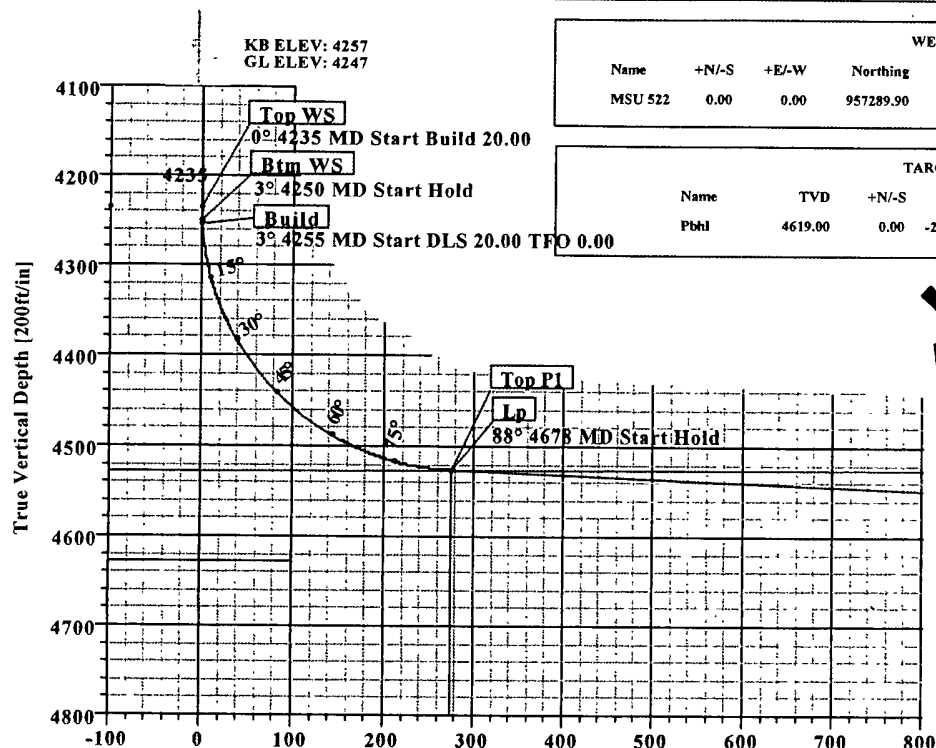
Roosevelt Co, NM (Nad 27)  
Geodetic System: US State Plane Coordinate System 1927  
Ellipsoid: NAD27 (Clarke 1866)  
Zone: New Mexico, Eastern Zone  
Magnetic Model: IGRF2010  
System Datum: Mean Sea Level  
Local North: True North

## SITE DETAILS

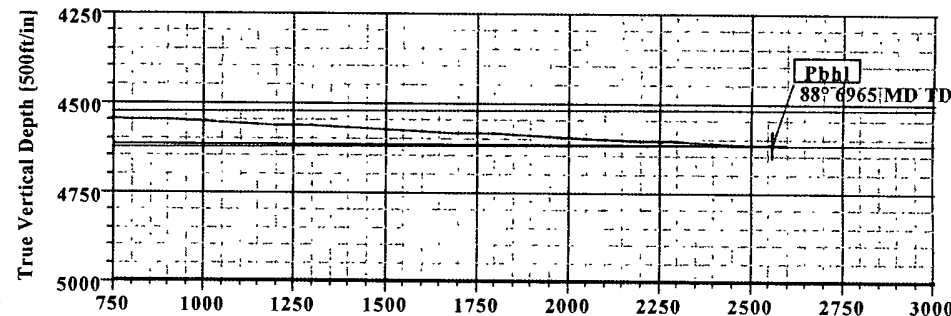
Milnesand Unit 522  
Site Centre Latitude: 33°37'41.232N  
Longitude: 103°24'46.800W  
Ground Level: 4247.00  
Positional Uncertainty: 0.00  
Convergence: 0.51

## FORMATION TOP DETAILS

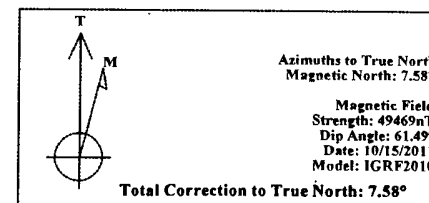
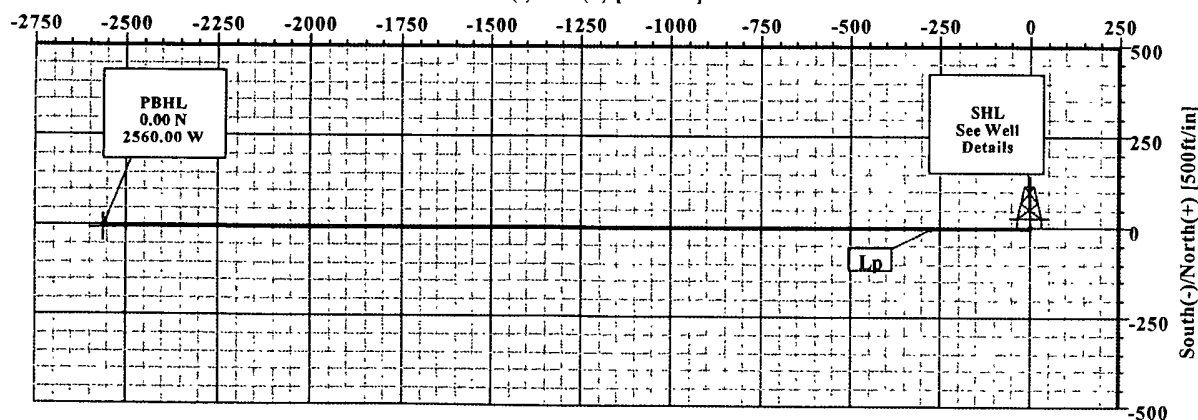
| No. | TVDPath | MDPath  | Formation |
|-----|---------|---------|-----------|
| 1   | 4526.14 | 4678.26 | Top P1    |



Vertical Section at 270.00° [200ft/in]  
West(-)/East(+) [500ft/in]



Vertical Section at 270.00° [500ft/in]



Plan: Plan #1 (MSU 522/1)

Created By: Russell W. Joyner

Date: 5/25/2011

# Weatherford International Ltd.

## WFT Plan Report Lat, Long



**Weatherford**

|                                                                                                                                                           |                                                                                                                                                                                                                                                             |                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Company:</b> EOR Operating<br><b>Field:</b> Roosevelt Co, NM (Nad 27)<br><b>Site:</b> Milnesand Unit 522<br><b>Well:</b> MSU 522<br><b>Wellpath:</b> 1 | <b>Date:</b> 5/25/2011<br><b>Co-ordinate(NE) Reference:</b> Well: MSU 522, True North<br><b>Vertical (TVD) Reference:</b> SITE 4257.0<br><b>Section (VS) Reference:</b> Well (0.00N,0.00E,270.00Azi)<br><b>Survey Calculation Method:</b> Minimum Curvature | <b>Time:</b> 14:33 58<br><b>Page:</b> 1<br><b>Db:</b> Sybase |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|

|                                                   |                                                                                      |
|---------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Plan:</b> Plan #1<br><br><b>Principal:</b> Yes | <b>Date Composed:</b> 5/25/2011<br><b>Version:</b> 1<br><b>Tied-to:</b> From Surface |
|---------------------------------------------------|--------------------------------------------------------------------------------------|

**Field:** Roosevelt Co, NM (Nad 27)

|                                                                                                                                       |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Map System:</b> US State Plane Coordinate System 1927<br><b>Geo Datum:</b> NAD27 (Clarke 1866)<br><b>Sys Datum:</b> Mean Sea Level | <b>Map Zone:</b> New Mexico, Eastern Zone<br><b>Coordinate System:</b> Well Centre<br><b>Geomagnetic Model:</b> IGRF2010 |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|

**Site:** Milnesand Unit 522

|                                                                                                                             |                                                               |                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Position:</b><br><b>From:</b> Geographic<br><b>Position Uncertainty:</b> 0.00 ft<br><b>Ground Level:</b> 4247.00 ft | <b>Northing:</b> 957289.90 ft<br><b>Easting:</b> 780147.37 ft | <b>Latitude:</b> 33 37 41.232 N<br><b>Longitude:</b> 103 24 46.800 W<br><b>North Reference:</b> True<br><b>Grid Convergence:</b> 0.51 deg |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|

**Well:** MSU 522

**Slot Name:**

|                                                                                              |                                                               |                                                                      |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|
| <b>Well Position:</b> +N/-S 0.00 ft<br>+E/-W 0.00 ft<br><b>Position Uncertainty:</b> 0.00 ft | <b>Northing:</b> 957289.90 ft<br><b>Easting:</b> 780147.37 ft | <b>Latitude:</b> 33 37 41.232 N<br><b>Longitude:</b> 103 24 46.800 W |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|

**Wellpath:** 1

|                                                                                                                                                   |                                              |                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Current Datum:</b> SITE<br><b>Magnetic Data:</b> 10/15/2011<br><b>Field Strength:</b> 49469 nT<br><b>Vertical Section:</b> Depth From (TVD) ft | <b>Height</b> 4257.00 ft<br>+N/-S ft<br>0.00 | <b>Drilled From:</b> Surface<br><b>Tie-on Depth:</b> 0.00 ft<br><b>Above System Datum:</b> Mean Sea Level<br><b>Declination:</b> 7.58 deg<br><b>Mag Dip Angle:</b> 61.49 deg<br>+E/-W ft<br>0.00<br>Direction deg<br>270.00 |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Plan Section Information

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg | Target |
|----------|-------------|-------------|-----------|-------------|-------------|------------------|--------------------|-------------------|------------|--------|
| 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00               | 0.00              | 0.00       |        |
| 4234.90  | 0.00        | 0.00        | 4234.90   | 0.00        | 0.00        | 0.00             | 0.00               | 0.00              | 0.00       |        |
| 4249.90  | 3.00        | 270.00      | 4249.89   | 0.00        | -0.39       | 20.00            | 20.00              | 0.00              | 270.00     |        |
| 4254.90  | 3.00        | 270.00      | 4254.89   | 0.00        | -0.65       | 0.00             | 0.00               | 0.00              | 0.00       |        |
| 4678.26  | 87.67       | 270.00      | 4526.14   | 0.00        | -275.11     | 20.00            | 20.00              | 0.00              | 0.00       |        |
| 6965.04  | 87.67       | 270.00      | 4619.00   | 0.00        | -2560.00    | 0.00             | 0.00               | 0.00              | 0.00       | Pbhl   |

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | N/S<br>ft | E/W<br>ft | VS<br>ft | DLS<br>deg/100ft | Lat | Min | Sec    | Long | Min | Sec    | Comment |
|----------|-------------|-------------|-----------|-----------|-----------|----------|------------------|-----|-----|--------|------|-----|--------|---------|
| 4200.00  | 0.00        | 0.00        | 4200.00   | 0.00      | 0.00      | 0.00     | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 46.800 |         |
| 4234.90  | 0.00        | 0.00        | 4234.90   | 0.00      | 0.00      | 0.00     | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 46.800 | Top WS  |
| 4249.90  | 3.00        | 270.00      | 4249.89   | 0.00      | -0.39     | 0.39     | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 46.805 | Btm WS  |
| 4254.90  | 3.00        | 270.00      | 4254.89   | 0.00      | -0.65     | 0.65     | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 46.808 | Build   |
| 4300.00  | 12.02       | 270.00      | 4299.55   | 0.00      | -6.54     | 6.54     | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 46.877 |         |
| 4400.00  | 32.02       | 270.00      | 4391.79   | 0.00      | -43.85    | 43.85    | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 47.319 |         |
| 4500.00  | 52.02       | 270.00      | 4465.70   | 0.00      | -110.45   | 110.45   | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 48.106 |         |
| 4600.00  | 72.02       | 270.00      | 4512.38   | 0.00      | -198.31   | 198.31   | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 49.145 |         |
| 4678.26  | 87.67       | 270.00      | 4526.14   | 0.00      | -275.11   | 275.11   | 20.00            | 33  | 37  | 41.232 | 103  | 24  | 50.053 | Top P1  |
| 4700.00  | 87.67       | 270.00      | 4527.02   | 0.00      | -296.83   | 296.83   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 50.310 |         |
| 4800.00  | 87.67       | 270.00      | 4531.08   | 0.00      | -396.74   | 396.74   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 51.492 |         |
| 4900.00  | 87.67       | 270.00      | 4535.14   | 0.00      | -496.66   | 496.66   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 52.673 |         |
| 5000.00  | 87.67       | 270.00      | 4539.20   | 0.00      | -596.58   | 596.58   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 53.855 |         |
| 5100.00  | 87.67       | 270.00      | 4543.26   | 0.00      | -696.50   | 696.50   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 55.037 |         |
| 5200.00  | 87.67       | 270.00      | 4547.32   | 0.00      | -796.41   | 796.41   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 56.218 |         |

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## WFT Plan Report Lat, Long



**Weatherford**

|                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Company:</b> EOR Operating<br><b>Field:</b> Roosevelt Co, NM (Nad 27)<br><b>Site:</b> Milnesand Unit 522<br><b>Well:</b> MSU 522<br><b>Wellpath:</b> 1 | <b>Date:</b> 5/25/2011 <b>Time:</b> 14.33:58 <b>Page:</b> 2<br><b>Co-ordinate(NE) Reference:</b> Well: MSU 522, True North<br><b>Vertical (TVD) Reference:</b> SITE 4257.0<br><b>Section (VS) Reference:</b> Well (0.00N,0.00E,270.00Azi)<br><b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Sybase |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | N/S<br>ft | E/W<br>ft | VS<br>ft | DLS<br>deg/100ft | Lat | Min | Sec    | Long | Min | Sec    | Comment |
|----------|-------------|-------------|-----------|-----------|-----------|----------|------------------|-----|-----|--------|------|-----|--------|---------|
| 5300.00  | 87.67       | 270.00      | 4551.38   | 0.00      | -896.33   | 896.33   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 57.400 |         |
| 5400.00  | 87.67       | 270.00      | 4555.44   | 0.00      | -996.25   | 996.25   | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 58.581 |         |
| 5500.00  | 87.67       | 270.00      | 4559.51   | 0.00      | -1096.17  | 1096.17  | 0.00             | 33  | 37  | 41.232 | 103  | 24  | 59.763 |         |
| 5600.00  | 87.67       | 270.00      | 4563.57   | 0.00      | -1196.08  | 1196.08  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 0.945  |         |
| 5700.00  | 87.67       | 270.00      | 4567.63   | 0.00      | -1296.00  | 1296.00  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 2.126  |         |
| 5800.00  | 87.67       | 270.00      | 4571.69   | 0.00      | -1395.92  | 1395.92  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 3.308  |         |
| 5900.00  | 87.67       | 270.00      | 4575.75   | 0.00      | -1495.84  | 1495.84  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 4.489  |         |
| 6000.00  | 87.67       | 270.00      | 4579.81   | 0.00      | -1595.75  | 1595.75  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 5.671  |         |
| 6100.00  | 87.67       | 270.00      | 4583.87   | 0.00      | -1695.67  | 1695.67  | 0.00             | 33  | 37  | 41.232 | 103  | 25  | 6.853  |         |
| 6200.00  | 87.67       | 270.00      | 4587.93   | 0.00      | -1795.59  | 1795.59  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 8.034  |         |
| 6300.00  | 87.67       | 270.00      | 4591.99   | 0.00      | -1895.51  | 1895.51  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 9.216  |         |
| 6400.00  | 87.67       | 270.00      | 4596.05   | 0.00      | -1995.42  | 1995.42  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 10.397 |         |
| 6500.00  | 87.67       | 270.00      | 4600.11   | 0.00      | -2095.34  | 2095.34  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 11.579 |         |
| 6600.00  | 87.67       | 270.00      | 4604.18   | 0.00      | -2195.26  | 2195.26  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 12.761 |         |
| 6700.00  | 87.67       | 270.00      | 4608.24   | 0.00      | -2295.18  | 2295.18  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 13.942 |         |
| 6800.00  | 87.67       | 270.00      | 4612.30   | 0.00      | -2395.09  | 2395.09  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 15.124 |         |
| 6900.00  | 87.67       | 270.00      | 4616.36   | 0.00      | -2495.01  | 2495.01  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 16.305 |         |
| 6965.04  | 87.67       | 270.00      | 4619.00   | 0.00      | -2560.00  | 2560.00  | 0.00             | 33  | 37  | 41.231 | 103  | 25  | 17.074 | Pbhl    |

### Targets

| Name | Description<br>Dip. Dir. | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | Map<br>Northing<br>ft | Map<br>Easting<br>ft | <--- Latitude ---><br>Deg Min Sec |    |          | <--- Longitude ---><br>Deg Min Sec |    |          |
|------|--------------------------|-----------|-------------|-------------|-----------------------|----------------------|-----------------------------------|----|----------|------------------------------------|----|----------|
| Pbhl |                          | 4619.00   | 0.00        | -2560.00    | 957267.12             | 777587.47            | 33                                | 37 | 41.231 N | 103                                | 25 | 17.074 W |

### Casing Points

| MD | TVD | Diameter | Hole Size | Name |
|----|-----|----------|-----------|------|
|    |     |          |           |      |
|    |     |          |           |      |

### Formations

| MD<br>ft | TVD<br>ft | Formations | Lithology | Dip Angle<br>deg | Dip Direction<br>deg |
|----------|-----------|------------|-----------|------------------|----------------------|
| 4678.26  | 4526.14   | Top P1     |           | -0.18            | 270.00               |
|          | 0.00      | P3         |           | -0.17            | 270.00               |

### Annotation

| MD<br>ft | TVD<br>ft |        |
|----------|-----------|--------|
| 4234.90  | 4234.90   | Top WS |
| 4249.90  | 4249.89   | Btm WS |
| 4254.90  | 4254.89   | Build  |
| 4678.26  | 4526.14   | Lp     |
| 6965.04  | 4619.00   | Pbhl   |

**Weatherford<sup>®</sup>****Weatherford Drilling Services**

GeoDec v5.03

---

Report Date: May 24, 2011  
Job Number: \_\_\_\_\_  
Customer: EOR Operating  
Well Name: Milnesand Unit MSU 522  
API Number: \_\_\_\_\_  
Rig Name: \_\_\_\_\_  
Location: Roosevelt Co, NM  
Block: \_\_\_\_\_  
Engineer: RWJ

---

|                                             |                                             |
|---------------------------------------------|---------------------------------------------|
| Geodetic Latitude / Longitude               | Geodetic Latitude / Longitude               |
| System: Latitude / Longitude                | System: Latitude / Longitude                |
| Projection: Geodetic Latitude and Longitude | Projection: Geodetic Latitude and Longitude |
| Datum: NAD 1927 (NADCON CONUS)              | Datum: NAD 1927 (NADCON CONUS)              |
| Ellipsoid: Clarke 1866                      | Ellipsoid: Clarke 1866                      |
| Latitude 33.6281200 DEG                     | Latitude 33.6281200 DEG                     |
| Longitude -103.4130000 DEG                  | Longitude -103.4130000 DEG                  |

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Geodetic Location WGS84      Elevation = 0.0 Meters  
Latitude = 33.62812° N      33° 37 min 41.232 sec  
Longitude = 103.41300° W      103° 24 min 46.800 sec

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|                        |              |                     |          |
|------------------------|--------------|---------------------|----------|
| Magnetic Declination = | 7.58°        | [True North Offset] |          |
| Local Gravity =        | .9989 g      | Checksum =          | 6758     |
| Local Field Strength = | 49465 nT     | Magnetic Vector X = | 23402 nT |
| Magnetic Dip =         | 61.49°       | Magnetic Vector Y = | 3112 nT  |
| Magnetic Model =       | IGRF-2010g11 | Magnetic Vector Z = | 43468 nT |
| Spud Date =            | Oct 15, 2011 | Magnetic Vector H = | 23608 nT |

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Signed: \_\_\_\_\_

Date: \_\_\_\_\_

MILNESAND UNIT 522 P1 SVY

Weatherford International Ltd.  
WFT Plan Report Lat, Long

Company: EOR Operating  
Time: 14:34:34 Page: 1  
Field: Roosevelt Co, NM (Nad 27)  
Reference: Well: MSU 522, True North  
Site: Milnesand Unit 522  
Reference: SITE 4257.0  
Well: MSU 522  
Reference: Well (0.00N,0.00E,270.00Azi)  
Wellpath: 1  
Method: Minimum Curvature Db: Sybase

Date: 5/25/2011  
Co-ordinate(NE)  
Vertical (TVD)  
Section (VS)  
Survey Calculation

Plan: Plan #1  
5/25/2011

Date Composed:

1  
Principal: Yes  
From Surface

Version:

Tied-to:

Field: Roosevelt Co, NM (Nad 27)

Map System: US State Plane Coordinate System 1927  
New Mexico, Eastern Zone  
Geo Datum: NAD27 (Clarke 1866)  
Well Centre  
Sys Datum: Mean Sea Level  
IGRF2010

Map Zone:

Coordinate System:

Geomagnetic Model:

Site: Milnesand Unit 522

Site Position:  
33 37 41.232 N  
From: Geographic  
103 24 46.800 W  
Position Uncertainty: 0.00 ft  
True  
Ground Level: 4247.00 ft  
0.51 deg

Northing: 957289.90 ft  
Easting: 780147.37 ft

Latitude:  
Longitude:  
North Reference:  
Grid Convergence:

Well: MSU 522

Slot Name:

Well Position: +N/-S 0.00 ft  
33 37 41.232 N  
+E/-W 0.00 ft  
103 24 46.800 W  
Position Uncertainty: 0.00 ft

Northing: 957289.90 ft  
Easting: 780147.37 ft

Latitude:  
Longitude:

Wellpath: 1  
Surface

Drilled From:

Tie-on Depth:

0.00 ft  
Current Datum: SITE  
Datum: Mean Sea Level  
Magnetic Data: 10/15/2011

Height 4257.00 ft

Above System

Declination:



## MILNESAND UNIT 522 P1 SVY

7.58 deg

Field Strength:

49469 nT

Mag Dip Angle:

61.49 deg

Vertical Section:Depth From (TVD)

+N/-S

+E/-W

Direction

ft

ft

ft

deg

0.00

0.00

0.00

270.00

## Plan Section Information

| Turn    | MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | DLS<br>deg/100ft | Build |
|---------|----------|-------------|-------------|-----------|-------------|-------------|------------------|-------|
| 0.00    | 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 0.00    | 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 4234.90 | 0.00     | 0.00        | 0.00        | 4234.90   | 0.00        | 0.00        | 0.00             | 0.00  |
| 0.00    | 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 4249.90 | 3.00     | 270.00      | 4249.89     | 0.00      | -0.39       | 20.00       | 20.00            | 0.00  |
| 0.00    | 270.00   | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 4254.90 | 3.00     | 270.00      | 4254.89     | 0.00      | -0.65       | 0.00        | 0.00             | 0.00  |
| 0.00    | 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 4678.26 | 87.67    | 270.00      | 4526.14     | 0.00      | -275.11     | 20.00       | 20.00            | 0.00  |
| 0.00    | 0.00     | 0.00        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |
| 6965.04 | 87.67    | 270.00      | 4619.00     | 0.00      | -2560.00    | 0.00        | 0.00             | 0.00  |
| 0.00    | 0.00     | Pbhl        | 0.00        | 0.00      | 0.00        | 0.00        | 0.00             | 0.00  |

Survey

| Min | MD<br>Sec<br>ft | Incl<br>Long<br>deg | Azim<br>Min<br>deg | Sec    | TVD<br>ft | N/S<br>Comment<br>ft | E/W<br>ft | VS<br>ft | DLS<br>deg/100ft | Lat |
|-----|-----------------|---------------------|--------------------|--------|-----------|----------------------|-----------|----------|------------------|-----|
|     | 4200.00         | 0.00                | 0.00               |        | 4200.00   | 0.00                 | 0.00      | 0.00     | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 46.800 |           |                      |           |          |                  |     |
|     | 4234.90         | 0.00                | 0.00               |        | 4234.90   | 0.00                 | 0.00      | 0.00     | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 46.800 | Top ws    |                      |           |          |                  |     |
|     | 4249.90         | 3.00                | 270.00             |        | 4249.89   | 0.00                 | -0.39     | 0.39     | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 46.805 | Btm ws    |                      |           |          |                  |     |
|     | 4254.90         | 3.00                | 270.00             |        | 4254.89   | 0.00                 | -0.65     | 0.65     | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 46.808 | Build     |                      |           |          |                  |     |
|     | 4300.00         | 12.02               | 270.00             |        | 4299.55   | 0.00                 | -6.54     | 6.54     | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 46.877 |           |                      |           |          |                  |     |
|     | 4400.00         | 32.02               | 270.00             |        | 4391.79   | 0.00                 | -43.85    | 43.85    | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 47.319 |           |                      |           |          |                  |     |
|     | 4500.00         | 52.02               | 270.00             |        | 4465.70   | 0.00                 | -110.45   | 110.45   | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 48.106 |           |                      |           |          |                  |     |
|     | 4600.00         | 72.02               | 270.00             |        | 4512.38   | 0.00                 | -198.31   | 198.31   | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 49.145 |           |                      |           |          |                  |     |
|     | 4678.26         | 87.67               | 270.00             |        | 4526.14   | 0.00                 | -275.11   | 275.11   | 20.00            | 33  |
| 37  | 41.232          | 103                 | 24                 | 50.053 | Top P1    |                      |           |          |                  |     |
|     | 4700.00         | 87.67               | 270.00             |        | 4527.02   | 0.00                 | -296.83   | 296.83   | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 50.310 |           |                      |           |          |                  |     |
|     | 4800.00         | 87.67               | 270.00             |        | 4531.08   | 0.00                 | -396.74   | 396.74   | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 51.492 |           |                      |           |          |                  |     |
|     | 4900.00         | 87.67               | 270.00             |        | 4535.14   | 0.00                 | -496.66   | 496.66   | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 52.673 |           |                      |           |          |                  |     |
|     | 5000.00         | 87.67               | 270.00             |        | 4539.20   | 0.00                 | -596.58   | 596.58   | 0.00             | 33  |
| 37  | 41.232          | 103                 | 24                 | 53.855 |           |                      |           |          |                  |     |
|     | 5100.00         | 87.67               | 270.00             |        | 4543.26   | 0.00                 | -696.50   | 696.50   | 0.00             | 33  |

| MILNESAND UNIT 522 P1 SVY |         |       |        |         |      |          |         |      |    |
|---------------------------|---------|-------|--------|---------|------|----------|---------|------|----|
| 37                        | 41.232  | 103   | 24     | 55.037  |      |          |         |      |    |
|                           | 5200.00 | 87.67 | 270.00 | 4547.32 | 0.00 | -796.41  | 796.41  | 0.00 | 33 |
| 37                        | 41.232  | 103   | 24     | 56.218  |      |          |         |      |    |
|                           | 5300.00 | 87.67 | 270.00 | 4551.38 | 0.00 | -896.33  | 896.33  | 0.00 | 33 |
| 37                        | 41.232  | 103   | 24     | 57.400  |      |          |         |      |    |
|                           | 5400.00 | 87.67 | 270.00 | 4555.44 | 0.00 | -996.25  | 996.25  | 0.00 | 33 |
| 37                        | 41.232  | 103   | 24     | 58.581  |      |          |         |      |    |
|                           | 5500.00 | 87.67 | 270.00 | 4559.51 | 0.00 | -1096.17 | 1096.17 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 24     | 59.763  |      |          |         |      |    |
|                           | 5600.00 | 87.67 | 270.00 | 4563.57 | 0.00 | -1196.08 | 1196.08 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 0.945   |      |          |         |      |    |
|                           | 5700.00 | 87.67 | 270.00 | 4567.63 | 0.00 | -1296.00 | 1296.00 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 2.126   |      |          |         |      |    |
|                           | 5800.00 | 87.67 | 270.00 | 4571.69 | 0.00 | -1395.92 | 1395.92 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 3.308   |      |          |         |      |    |
|                           | 5900.00 | 87.67 | 270.00 | 4575.75 | 0.00 | -1495.84 | 1495.84 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 4.489   |      |          |         |      |    |
|                           | 6000.00 | 87.67 | 270.00 | 4579.81 | 0.00 | -1595.75 | 1595.75 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 5.671   |      |          |         |      |    |
|                           | 6100.00 | 87.67 | 270.00 | 4583.87 | 0.00 | -1695.67 | 1695.67 | 0.00 | 33 |
| 37                        | 41.232  | 103   | 25     | 6.853   |      |          |         |      |    |
|                           | 6200.00 | 87.67 | 270.00 | 4587.93 | 0.00 | -1795.59 | 1795.59 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 8.034   |      |          |         |      |    |
|                           | 6300.00 | 87.67 | 270.00 | 4591.99 | 0.00 | -1895.51 | 1895.51 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 9.216   |      |          |         |      |    |
|                           | 6400.00 | 87.67 | 270.00 | 4596.05 | 0.00 | -1995.42 | 1995.42 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 10.397  |      |          |         |      |    |
|                           | 6500.00 | 87.67 | 270.00 | 4600.11 | 0.00 | -2095.34 | 2095.34 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 11.579  |      |          |         |      |    |
|                           | 6600.00 | 87.67 | 270.00 | 4604.18 | 0.00 | -2195.26 | 2195.26 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 12.761  |      |          |         |      |    |
|                           | 6700.00 | 87.67 | 270.00 | 4608.24 | 0.00 | -2295.18 | 2295.18 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 13.942  |      |          |         |      |    |
|                           | 6800.00 | 87.67 | 270.00 | 4612.30 | 0.00 | -2395.09 | 2395.09 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 15.124  |      |          |         |      |    |
|                           | 6900.00 | 87.67 | 270.00 | 4616.36 | 0.00 | -2495.01 | 2495.01 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 16.305  |      |          |         |      |    |
|                           | 6965.04 | 87.67 | 270.00 | 4619.00 | 0.00 | -2560.00 | 2560.00 | 0.00 | 33 |
| 37                        | 41.231  | 103   | 25     | 17.074  | Pbh1 |          |         |      |    |

#### Targets

| Map       | <---- |     | Latitude | --<----     |      | Longitude | --- |      |          |       | Map       |
|-----------|-------|-----|----------|-------------|------|-----------|-----|------|----------|-------|-----------|
| Name      |       |     |          | Description |      |           |     |      | +N/-S    | +E/-W |           |
| Easting   | Deg   | Min | Sec      | Deg         | Min  | Sec       | TVD |      |          |       | Northing  |
| ft        |       |     | Dip.     |             | Dir. | ft        |     |      | ft       | ft    | ft        |
| Pbh1      |       |     |          |             |      | 4619.00   |     |      |          |       |           |
| 777587.47 | 33    | 37  | 41.231 N | 103         | 25   | 17.074 W  |     | 0.00 | -2560.00 |       | 957267.12 |

#### Casing Points

| MD | TVD | Diameter | Hole Size | Name |
|----|-----|----------|-----------|------|
|----|-----|----------|-----------|------|

#### Formations

MILNESAND UNIT 522 P1 SVY

| MD         | TVD             | Formations    | Lithology |
|------------|-----------------|---------------|-----------|
| ft         | Dip Angle<br>ft | Dip Direction |           |
|            | deg             | deg           |           |
| 4678.26    | 4526.14         | Top P1        |           |
|            | -0.18           | 270.00        |           |
|            | 0.00            | P3            |           |
|            | -0.17           | 270.00        |           |
| Annotation |                 |               |           |
| MD         | TVD             |               |           |
| ft         | ft              |               |           |
| 4234.90    | 4234.90         | Top WS        |           |
| 4249.90    | 4249.89         | Btm WS        |           |
| 4254.90    | 4254.89         | Build         |           |
| 4678.26    | 4526.14         | Lp            |           |
| 6965.04    | 4619.00         | Pbh1          |           |