

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*

5. Lease Serial No.  
NMNM100549

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

7. If Unit or CA/Agreement, Name and/or No.  
NMNM138618

8. Well Name and No.  
HH SO 17 20 FED 002 4H

9. API Well No.  
30-015-45107-00-X1

10. Field and Pool or Exploratory Area  
PURPLE SAGE-WOLFCAMP (GAS)

11. County or Parish, State  
EDDY COUNTY, NM

1. Type of Well  
 Oil Well  Gas Well  Other

2. Name of Operator  
CHEVRON USA INCORPORATED  
Contact: LAURA BECERRA  
E-Mail: LBECERRA@CHEVRON.COM

3a. Address  
6301 DEAUVILLE BLVD  
MIDLAND, TX 79706

3b. Phone No. (include area code)  
Ph: 432-687-7655

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
Sec 17 T26S R27E NWNE 212FNL 1650FEL  
32.049168 N Lat, 104.209061 W Lon

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

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                |                                               |                                                    |                                           |
|------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen               | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off   |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Hydraulic Fracturing | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity   |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair        | <input type="checkbox"/> New Construction     | <input type="checkbox"/> Recomplete                | <input checked="" type="checkbox"/> Other |
|                                                      | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon     | <input type="checkbox"/> Temporarily Abandon       | Change to Original A<br>PD                |
|                                                      | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back            | <input type="checkbox"/> 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Chevron USA Inc respectfully requests the following changes to the original APD approved 7/6/2018:

FTP - From: 330' FNL, 2,430' FEL (LAT: 32.048851/LONG: -104.211577)  
TO: 330' FNL, 1,170' FEL (LAT: 32.048840/LONG: -104.207510)

LTP - From: 330' FSL, 2,430' FEL (LAT: 32.021373/LONG: -104.211348)  
TO: 330' FSL, 1,170' FEL (LAT: 32.035106/LONG: -104.207376)

BHL - From: 280' FSL, 2,430' FEL (LAT: 32.021236/LONG: -104.211347)  
TO: 25' FSL, 1,170' FEL (LAT: 32.020530/LONG: -104.207276)

TVD/MD: 9,709'/20,044' to 9,849'/20,594'

**Carlsbad Field Office  
OCD Artesia**

*See Additional COAs*

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

Electronic Submission #487971 verified by the BLM Well Information System  
For CHEVRON USA INCORPORATED, sent to the Carlsbad  
Committed to AFMSS for processing by PRISCILLA PEREZ on 10/15/2019 (20PP0117SE)

|                                    |                             |
|------------------------------------|-----------------------------|
| Name (Printed/Typed) LAURA BECERRA | Title REGULATORY SPECIALIST |
| Signature (Electronic Submission)  | Date 10/14/2019             |

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

|                                 |                                 |                        |
|---------------------------------|---------------------------------|------------------------|
| Approved By <u>NDUNGU KAMAU</u> | Title <u>PETROLEUM ENGINEER</u> | Date <u>10/25/2019</u> |
|---------------------------------|---------------------------------|------------------------|

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Carlsbad

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

*RW10-3019*

**Additional data for EC transaction #487971 that would not fit on the form**

**32. Additional remarks, continued**

We also propose to break test if able to finish the next hole section within 21 days of the previous full BOP test. Details attached.

Copies of revised certified plat, directional survey, and drilling plan with updated casing and cement details are attached.

**Revisions to Operator-Submitted EC Data for Sundry Notice #487971**

|                | <b>Operator Submitted</b>                                                                      | <b>BLM Revised (AFMSS)</b>                                                                          |
|----------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Sundry Type:   | APDCH<br>NOI                                                                                   | APDCH<br>NOI                                                                                        |
| Lease:         | NMNM100549                                                                                     | NMNM100549                                                                                          |
| Agreement:     |                                                                                                | NMNM138618 (NMNM138618)                                                                             |
| Operator:      | CHEVRON USA INC<br>6301 DEAUVILLE BLVD<br>MIDLAND, TX 79706<br>Ph: 432-687-7665                | CHEVRON USA INCORPORATED<br>6301 DEAUVILLE BLVD<br>MIDLAND, TX 79706<br>Ph: 432 687 7100            |
| Admin Contact: | LAURA BECERRA<br>REGULATORY SPECIALIST<br>E-Mail: LBECERRA@CHEVRON.COM<br><br>Ph: 432-687-7665 | LAURA BECERRA<br>REGULATORY SPECIALIST<br>E-Mail: LBECERRA@CHEVRON.COM<br><br>Ph: 432-687-7655      |
| Tech Contact:  | LAURA BECERRA<br>REGULATORY SPECIALIST<br>E-Mail: LBECERRA@CHEVRON.COM<br><br>Ph: 432-687-7665 | LAURA BECERRA<br>REGULATORY SPECIALIST<br>E-Mail: LBECERRA@CHEVRON.COM<br><br>Ph: 432-687-7655      |
| Location:      |                                                                                                |                                                                                                     |
| State:         | NM                                                                                             | NM                                                                                                  |
| County:        | EDDY                                                                                           | EDDY                                                                                                |
| Field/Pool:    | PURPLE SAGE;WOLFCAMP (GAS)                                                                     | PURPLE SAGE-WOLFCAMP (GAS)                                                                          |
| Well/Facility: | HH SO 17 20 FED 002 4H<br>Sec 17 T26S R27E Mer NMP NWNE 212FNL 1650FEL                         | HH SO 17 20 FED 002 4H<br>Sec 17 T26S R27E NWNE 212FNL 1650FEL<br>32.049168 N Lat, 104.209061 W Lon |

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

|                              |                                     |
|------------------------------|-------------------------------------|
| <b>OPERATOR'S NAME:</b>      | CHEVRON USA INC                     |
| <b>LEASE NO.:</b>            | NMNM100549                          |
| <b>WELL NAME &amp; NO.:</b>  | HH SO 17 20 FED 002 4H              |
| <b>SURFACE HOLE FOOTAGE:</b> | 212' FNL & 1650' FEL                |
| <b>BOTTOM HOLE FOOTAGE:</b>  | 25' FSL & 1170' FEL; Sec. 20        |
| <b>LOCATION:</b>             | Section 17, T. 26 S., R 27 E., NMPM |
| <b>COUNTY:</b>               | Eddy County, New Mexico             |

COA

|                      |                                                   |                                            |                                       |
|----------------------|---------------------------------------------------|--------------------------------------------|---------------------------------------|
| H2S                  | <input type="radio"/> Yes                         | <input checked="" type="radio"/> No        |                                       |
| Potash               | <input checked="" type="radio"/> None             | <input type="radio"/> Secretary            | <input type="radio"/> R-111-P         |
| Cave/Karst Potential | <input type="radio"/> Low                         | <input type="radio"/> Medium               | <input checked="" type="radio"/> High |
| Cave/Karst Potential | <input type="radio"/> Critical                    |                                            |                                       |
| Variance             | <input type="radio"/> None                        | <input checked="" type="radio"/> Flex Hose | <input type="radio"/> Other           |
| Wellhead             | <input type="radio"/> Conventional                | <input checked="" type="radio"/> Multibowl | <input type="radio"/> Both            |
| Other                | <input checked="" type="checkbox"/> 4 String Area | <input type="checkbox"/> Capitan Reef      | <input type="checkbox"/> WIPP         |
| Other                | <input type="checkbox"/> Fluid Filled             | <input type="checkbox"/> Cement Squeeze    | <input type="checkbox"/> Pilot Hole   |
| Special Requirements | <input type="checkbox"/> Water Disposal           | <input type="checkbox"/> COM               | <input type="checkbox"/> Unit         |

|               |                                      |                          |
|---------------|--------------------------------------|--------------------------|
| Break Testing | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
|---------------|--------------------------------------|--------------------------|

**ALL PREVIOUS COAs STILL APPLY.**

### A. CASING

#### Primary Casing Design:

1. The 13-3/8 inch surface casing shall be set at approximately **450 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
  - ❖ **In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.**
3. The minimum required fill of cement behind the 7-5/8 inch 2<sup>nd</sup> intermediate liner is:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

## **B. PRESSURE CONTROL**

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'**
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

### **C. SPECIAL REQUIREMENT (S)**

#### **BOP Break Testing Variance (Note: For 5M BOP or less)**

- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any-BOP-Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

**OTA10252019**

**Delaware Basin  
Changes to APD/COA for Federal  
Well**



**Well Name:**

| Well Name           |    | API #        |
|---------------------|----|--------------|
| HH SO 17 20 FED 002 | 4H | 30-015-45107 |

**Rig: Patterson 257**

**CVX CONTACT:**

**Hannah Wardo**  
MCBU D&C Engineer – Patterson 257  
Chevron North America Exploration and Production Co.  
MidContinent Business Unit  
Office: (713) 372-9032  
Cell: (832) 963-9814  
Email: Hannah.wardo@chevron.com

## Summary of Changes to original APD

Chevron USA Inc is requesting the following changes to the original APD approved 7/6/2018:

- FTP - From: 330' FNL, 2,430' FEL (LAT: 32.048851/LONG: -104.211577)  
To: 330' FNL, 1,170' FEL (LAT: 32.048840/LONG: -104.207510)
- LTP - From: 330' FSL, 2,430' FEL (LAT: 32.021373/LONG: -104.211348)  
To: 330' FSL, 1,170' FEL (LAT: 32.035106/LONG: -104.207376)
- BHL - From: 280' FSL, 2,430' FEL (LAT: 32.021236/LONG: -104.211347)  
To: 25' FSL, 1,170' FEL (LAT: 32.020530/LONG: -104.207276)

TVD/MD: 9,709'/20,044' to 9,849'/20,594'

- A variance from the Onshore Order 2 where it states "(A full BOP Test) shall be performed: when initially installed and whenever any seal subject to test pressure is broken." We propose to break test if able to finish the next hole section within 21 days of the previous full BOP test. Upon the first nipple up of the pad a full BOP test will be performed. A break test will consist of a 250 psi low /  $\geq$  5,000 psi high 10 min ea test against the connection that was broken when skidding the rig. A break test will not be performed on our last production section. A break test will only be performed on operations where BLM documentation states a 5M or less BOP can be utilized.

See drilling sequence below that indicates the potential hole sections break testing can be performed given they meet the above criteria.



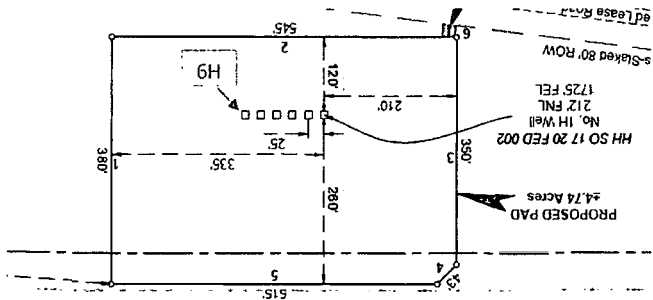
\* = offline

Drilling Sequence & Slot Designation

HNM 26 27 Sec 17 20 Pad 93, Pkg 6

|                                  | 6H (WCC) | 5H (WCA) | 4H (WCD) | 3H (WCA) | 2H (WCC) | 1H (WCA) | ↑<br>SOUTH |
|----------------------------------|----------|----------|----------|----------|----------|----------|------------|
| Surface (drilled by surface rig) | X        | X        | X        | X        | X        | X        |            |
| Int1                             | 11       | 9        | 7        | 5        | 3        | 1        | brine      |
| Int2                             | 12       | 10       | 8        | 6        | 4        | 2        | cut brine  |
| Production                       | 17*      | 13*      | 18       | 14*      | 16       | 15       | OBM        |

trailers



District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

|                                         |  |                                                   |  |                                                       |                                 |
|-----------------------------------------|--|---------------------------------------------------|--|-------------------------------------------------------|---------------------------------|
| <sup>1</sup> API Number<br>30-015-45107 |  | <sup>2</sup> Pool Code<br>98220                   |  | <sup>3</sup> Pool Name<br>PURPLE SAGE; WOLFCAMP (GAS) |                                 |
| <sup>4</sup> Property Code<br>98220     |  | <sup>5</sup> Property Name<br>HH SO 17 20 FED 002 |  |                                                       | <sup>6</sup> Well Number<br>4H  |
| <sup>7</sup> OGRID No.<br>4323          |  | <sup>8</sup> Operator Name<br>CHEVRON U.S.A. INC. |  |                                                       | <sup>9</sup> Elevation<br>3248' |

<sup>10</sup> 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             | 17      | 26 SOUTH | 27 EAST, N.M.P.M. |         | 212'          | NORTH            | 1650'         | EAST           | EDDY   |

<sup>11</sup> 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 |
|---------------|---------|----------|-------------------|---------|---------------|------------------|---------------|----------------|--------|
| P             | 20      | 26 SOUTH | 27 EAST, N.M.P.M. |         | 25'           | SOUTH            | 1170'         | EAST           | EDDY   |

|                                      |                               |                                  |                         |
|--------------------------------------|-------------------------------|----------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres<br>640 | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code | <sup>15</sup> Order No. |
|--------------------------------------|-------------------------------|----------------------------------|-------------------------|

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

|                                  |                  |
|----------------------------------|------------------|
| <b>PROPOSED FIRST TAKE POINT</b> |                  |
| X= 539,137 NAD 27                | Y= 381,472       |
| LAT. 32.048718                   | LONG. 104.207016 |
| X= 580,321 NAD83                 | Y= 381,529       |
| LAT. 32.048840                   | LONG. 104.207510 |
| <b>MID POINT</b>                 |                  |
| X= 539,184 NAD 27                | Y= 376,476       |
| LAT. 32.034984                   | LONG. 104.206883 |
| X= 580,368 NAD83                 | Y= 376,533       |
| LAT. 32.035106                   | LONG. 104.207376 |
| <b>PROPOSED LAST TAKE POINT</b>  |                  |
| X= 539,219 NAD 27                | Y= 371,479       |
| LAT. 32.021246                   | LONG. 104.206789 |
| X= 580,403 NAD83                 | Y= 371,536       |
| LAT. 32.021369                   | LONG. 104.207282 |

|                                    |                  |
|------------------------------------|------------------|
| <b>HH SO 17 20 FED 002 4H WELL</b> |                  |
| X= 538,656 NAD 27                  | Y= 381,591       |
| LAT. 32.049046                     | LONG. 104.208567 |
| X= 579,840 NAD83                   | Y= 381,648       |
| LAT. 32.049168                     | LONG. 104.209060 |
| ELEVATION +3248' NAVD 88           |                  |

|                                      |                  |
|--------------------------------------|------------------|
| <b>PROPOSED BOTTOM HOLE LOCATION</b> |                  |
| X= 539,221 NAD 27                    | Y= 371,174       |
| LAT. 32.020408                       | LONG. 104.206783 |
| X= 580,405 NAD83                     | Y= 371,231       |
| LAT. 32.020530                       | LONG. 104.207276 |

**<sup>17</sup> 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.

*[Signature]*      9/18/2019  
Signature      Date

**Laura Becerra**  
Printed Name

**L.Becerra@Chevron.com**  
E-mail Address

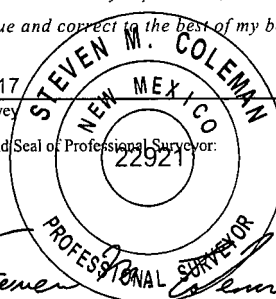
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**<sup>18</sup> SURVEYOR CERTIFICATION**

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.

06/15/2017  
Date of Survey

*[Signature]*  
Signature and Seal of Professional Surveyor



*[Signature]*  
Certificate Number      07/22/2019

Rep. 10-30-19

**Pad Summary**

The table below lists all the wells for the given pad and their respective name and TVD's (ft) for their production target intervals:

| Well Name(s)           | Target TVD | Formation Desc. |
|------------------------|------------|-----------------|
| HH SO 17 20 FED 002 1H | 9,109      | Wolfcamp A      |
| HH SO 17 20 FED 002 2H | 9,718      | Wolfcamp C      |
| HH SO 17 20 FED 002 3H | 9,188      | Wolfcamp A      |
| HH SO 17 20 FED 002 4H | 9,849      | Wolfcamp D      |
| HH SO 17 20 FED 002 5H | 9,111      | Wolfcamp A      |
| HH SO 17 20 FED 002 6H | 9,720      | Wolfcamp C      |

**1. FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

Elevation: 3275 ft

| FORMATION             | SUB-SEA TVD | TVD   | MD     | LITHOLOGIES | MIN. RESOURCES | PROD. FORMATION |
|-----------------------|-------------|-------|--------|-------------|----------------|-----------------|
| Rustler               | 3275        |       | -      | ANHYD       | N/A            |                 |
| Salado                | 2630        | 645   | 645    | SALT        | N/A            |                 |
| Lamar                 | 1177        | 2,098 | 2,098  | LIMESTONE   | N/A            |                 |
| Bell Canyon           | 1148        | 2,127 | 2,127  | SAND STONE  | N/A            |                 |
| Cherry Canyon         | 325         | 2,950 | 2,950  | SAND STONE  | N/A            |                 |
| Brushy Canyon         | -791        | 4,066 | 4,066  | SAND STONE  | N/A            |                 |
| Bone Spring Limestone | -2400       | 5,675 | 5,675  | LIMESTONE   | N/A            |                 |
| Avalon                | -2543       | 5,818 | 5,818  | SHALE       | Oil            |                 |
| Top Bone Spring 1     | -3324       | 6,599 | 6,599  | SHALE       | Oil            |                 |
| Top Bone Spring 2     | -3857       | 7,132 | 7,132  | SHALE       | Oil            |                 |
| Top Bone Spring 3     | -4973       | 8,248 | 8,248  | SHALE       | Oil            |                 |
| WCA                   | -5577       | 8,852 | 8,852  | SHALE       | Oil            |                 |
| WCAB                  | -6045       | 9,320 | 9,320  | SHALE       | Oil            |                 |
| WCAC                  | -6374       | 9,649 | 9,800  | SHALE       | Oil            |                 |
| WCAD                  | -6475       | 9,750 | 10,001 | SHALE       | Oil            | Yes             |

| WELLBORE LOCATIONS | SUB-SEA TVD | RKB TVD | MD     |
|--------------------|-------------|---------|--------|
| SHL                | 3275        | -       | -      |
| KOP                | -5932       | 9,207   | 9,258  |
| FTP                | -6573       | 9,848   | 10,295 |
| LTP                | -6573       | 9,848   | 20,549 |

Bottom hole temperature: 150 degrees F

**2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

| Substance                            | Formation             | Depth |
|--------------------------------------|-----------------------|-------|
| Deepest Expected Base of Fresh Water |                       | 450   |
| Water                                | Rustler               | -     |
| Water                                | Salado                | 645   |
| Water                                | Lamar                 | 2,098 |
| Oil/Gas                              | Bell Canyon           | 2,127 |
| Oil/Gas                              | Cherry Canyon         | 2,950 |
| Oil/Gas                              | Brushy Canyon         | 4,066 |
| Oil/Gas                              | Bone Spring Limestone | 5,675 |
| Oil/Gas                              | Avalon                | 5,818 |
| Oil/Gas                              | Top Bone Spring 1     | 6,599 |
| Oil/Gas                              | Top Bone Spring 2     | 7,132 |
| Oil/Gas                              | Top Bone Spring 3     | 8,248 |
| Oil/Gas                              | WCA                   | 8,852 |
| Oil/Gas                              | WCAB                  | 9,320 |
| Oil/Gas                              | WCAC                  | 9,649 |
| Oil/Gas                              | WCAD                  | 9,750 |

All shows of fresh water and minerals will be reported and protected.

**3. BOP EQUIPMENT**

Chevron will have a minimum of a 5,000 psi rig stack (see proposed schematic) for drill out below surface casing. The stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed per hole section, unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test will be conducted by a third party.

Chevron requests a variance to use a FMC Technologies UH-S Multibowl wellhead, which will be run through the rig floor on surface casing. BOPE will be nipples up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal. All tests performed by third party.

**4. CASING PROGRAM**

a. The proposed casing program will be as follows:

| Purpose                     | From   | To      | Hole Size | Csg Size | Weight | Grade | Thread  | Condition |
|-----------------------------|--------|---------|-----------|----------|--------|-------|---------|-----------|
| Surface                     | 0'     | 450'    | 17-1/2"   | 13-3/8"  | 54.5 # | J-55  | STC/BTC | New       |
| Intermediate                | 0'     | 2,100'  | 12-1/4"   | 9-5/8"   | 43.5 # | L-80  | LTC     | New       |
| INT2 Liner                  | 1,800' | 9,100'  | 8-1/2"    | 7-5/8"   | 29.7 # | P-110 | W-513   | New       |
| Production (Tapered String) | 0'     | 8,600'  | 6-3/4"    | 5-1/2"   | 20.0 # | P-110 | TXP-BTC | New       |
|                             | 0'     | 20,549' | 6-3/4"    | 5"       | 18.0 # | P-110 | W-521   | New       |

| Purpose                     | Hole Size | Casing Size | Top (MD) | Btm (MD) | Top (TVD) | Btm (TVD) | Top (SSTVD) | Btm (SSTVD) | Grade | Weight | Joint type |
|-----------------------------|-----------|-------------|----------|----------|-----------|-----------|-------------|-------------|-------|--------|------------|
| Surface                     | 17-1/2"   | 13-3/8"     | 0'       | 450'     | 0'        | 450'      | 3,275'      | -2,825'     | J-55  | 54.5 # | STC/BTC    |
| Intermediate                | 12-1/4"   | 9-5/8"      | 0'       | 2,100'   | 0'        | 2,100'    | 3,275'      | 1,175'      | L-80  | 43.5 # | LTC        |
| Intermediate Liner          | 8-1/2"    | 7-5/8"      | 1,800'   | 9,100'   | 1,800'    | 9,100'    | 1,475'      | -5,825'     | P110  | 29.7 # | W-513      |
| Production (Tapered String) | 6-3/4"    | 5-1/2"      | 0'       | 8,600'   | 0'        | 8,600'    | 3,275'      | -5,325'     | P110  | 20.0 # | TXP-BTC    |
|                             | 6-3/4"    | 5"          | 8,600'   | 20,549'  | 8,600'    | 9,848'    | -5,325'     | -6,573'     | P110  | 18.0 # | W-521      |

- b. Casing design subject to revision based on geologic conditions encountered.
- c. A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.
- d. Chevron will fill casing at a minimum of every 20 jts (~840') while running for intermediate and production casing in order to maintain collapse SF.

**SF Calculations based on the following "Worst Case" casing design:**

|                      |         |                  |
|----------------------|---------|------------------|
| Surface Casing:      | 450'    | RTVD             |
| Intermediate Casing: | 2,100'  | RTVD             |
| INT2 Liner:          | 9,100'  | RTVD             |
| Production Casing:   | 20,549' | RTMD (10422' VS) |

| Casing String | Min SF Burst | Min SF Collapse | Min SF Tension | Min SF Tri-Axial |
|---------------|--------------|-----------------|----------------|------------------|
| Surface       | 1.48         | 2.10            | 4.91           | 1.80             |
| Intermediate  | 1.52         | 1.87            | 2.79           | 1.83             |
| Intermediate  | 1.33         | 2.59            | 1.60           | 1.66             |
| Production    | 1.10         | 1.39            | 1.61           | 1.32             |

The following worst case load cases were considered for calculation of the above Min. Safety Factors:

| Burst Design                                                                                                                                    | Surf | Int | Prod |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|------|
| Pressure Test- Surface, Int, Prod Csg<br>P external: Mud weight above TOC, PP below<br>P internal: Test psi + next section heaviest mud in csg  | X    | X   | X    |
| Displace to Gas- Surf Csg<br>P external: Mud weight above TOC, PP below<br>P internal: Dry Gas from Next Csg Point                              | X    |     |      |
| Gas over mud (60/40) - Int Csg<br>P external: Mud weight above TOC, PP below<br>P internal: 60% gas over 40% mud from hole TD PP                |      | X   |      |
| Stimulation (Frac) Pressures- Prod Csg<br>P external: Mud weight above TOC, PP below<br>P internal: Max inj pressure w/ heaviest injected fluid |      |     | X    |
| Tubing leak- Prod Csg (packer at KOP)<br>P external: Mud weight above TOC, PP below<br>P internal: Leak just below surf, 8.45 ppg packer fluid  |      |     | X    |
| Collapse Design                                                                                                                                 | Surf | Int | Prod |
| Full Evacuation<br>P external: Mud weight gradient<br>P internal: none                                                                          | X    | X   | X    |
| Cementing- Surf, Int, Prod Csg<br>P external: Wet cement<br>P internal: displacement fluid - water                                              | X    | X   | X    |
| Tension Design                                                                                                                                  | Surf | Int | Prod |
| 100k lb overpull                                                                                                                                | X    | X   | X    |

**5. CEMENTING PROGRAM**

| Slurry                    | Type    | Top     | Bottom  | Sacks | Yield      | Density | %Excess   | Water  | Volume | Additives                                 |
|---------------------------|---------|---------|---------|-------|------------|---------|-----------|--------|--------|-------------------------------------------|
| Surface                   |         |         |         |       | (cu ft/sk) | (ppg)   | Open Hole | gal/sk | cuft   |                                           |
| Tail                      | Class C | 0'      | 450'    | 488   | 1.34       | 14.8    | 50        | 6.40   | 654    | Extender, Antifoam, Retarder              |
| <b>Intermediate Csg</b>   |         |         |         |       |            |         |           |        |        |                                           |
| Lead                      | Class C | 0'      | 1,100'  | 398   | 1.73       | 12.8    | 100       | 9.26   | 689    | Extender, Antifoam, Retarder, Viscosifier |
| Tail                      | Class C | 1,100'  | 2,100'  | 334   | 1.33       | 14.8    | 30        | 6.38   | 445    | Extender, Antifoam, Retarder, Viscosifier |
| <b>Intermediate 2 Csg</b> |         |         |         |       |            |         |           |        |        |                                           |
| Lead                      | Class C | 1,800'  | 8,600'  | 517   | 2.43       | 11.9    | 140       | 12.54  | 1256   | Extender, Antifoam, Retarder, Viscosifier |
| Tail                      | Class C | 8,600'  | 9,100'  | 43    | 1.335      | 14.8    | 50        | 6.29   | 58     | Extender, Antifoam, Retarder, Viscosifier |
| <b>Production</b>         |         |         |         |       |            |         |           |        |        |                                           |
| Lead                      | Class H | 8,600'  | 18,673' | 1436  | 1.18       | 15.6    | 50        | 9.85   | 1695   | Extender, Antifoam, Retarder, Viscosifier |
| Tail                      | Class H | 18,673' | 20,549' | 166   | 1.9        | 16      | 50        | 9.22   | 316    | Extender, Antifoam, Retarder, Viscosifier |

- Final cement volumes will be determined by caliper.
- Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
- Production casing will have one solid body type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

**6. MUD PROGRAM**

| From   | To      | TVD Top | TVD Btm | Type            | Weight     | Viscosity | Filtrate |
|--------|---------|---------|---------|-----------------|------------|-----------|----------|
| 0'     | 450'    | 0'      | 880'    | Fresh water mud | 8.3 - 9.0  | 28-30     | N/C      |
| 450'   | 2,100'  | 880'    | 2,100'  | Brine/OBM       | 8.8 - 10.6 | 28-70     | 15-30    |
| 2,100' | 9,100'  | 2,100'  | 9,100'  | Cut Brine/OBM   | 8.8 - 10.0 | 28-70     | 15-30    |
| 9,100' | 20,549' | 9,100'  | 9,848'  | OBM             | 9.5 - 13.6 | 50-70     | 10 - 25  |

A closed system will be used consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transporting of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

**7. TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

- Drill stem tests are not planned.
- The logging program will be as follows:

| TYPE    | Logs         | Interval                                 | Timing                        |
|---------|--------------|------------------------------------------|-------------------------------|
| Mudlogs | 2 man mudlog | Surface casing shoe through prod hole TD | While drilling or circulating |
| LWD     | MWD Gamma    | Int. and Prod. Hole                      | While Drilling                |

- Conventional whole core samples are not planned.
- A directional survey will be run.

**8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

- No abnormal pressure or temperatures are expected. Estimated BHP is:  psi (MASP)
- Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

PLANNED WELLPATH REPORT (CSV version)

Prepared by Baker Hughes, a GE company  
Software System: WellArchitect® 5.1

REFERENCE WELLPATH IDENTIFICATION

Operator Chevron U.S.A. Inc.  
Area Eddy County, NM  
Field Purple Sage, Wolfcamp (Eddy Co., NM) NAD 27  
Facility HNM 26 27 Pkg 6 Pad 93  
Slot HH SO 17 20 Fed 002 No. 4H  
Well HH SO 17 20 Fed 002 No. 4H  
Wellbore HH SO 17 20 Fed 002 No. 4H PWB  
Wellpath HH SO 17 20 Fed 002 No. 4H Rev-A.0  
Sidetrack (none)

REPORT SETUP INFORMATION

Projection NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet  
North Refe Grid  
Scale 0.999911  
Convergen 0.07° East  
Software S WellArchitect® 5.1  
User Moyagusa  
Report Ger 27/Aug/2019 at 11:25  
DataBase/ WA\_HOU\_Midland\_Defn/ev1560.xml

| WELLPATH     | Local North | Local East | Easting  | Northing | Latitude                    | Longitude |
|--------------|-------------|------------|----------|----------|-----------------------------|-----------|
|              | [ft]        | [ft]       | [US ft]  | [US ft]  |                             |           |
| Slot Locati  | 0           | 75.01      | 538656   | 381591   | 32°02'56.5" 104°12'30.845"W |           |
| Facility Ref |             |            | 538581   | 381591   | 32°02'56.5" 104°12'31.716"W |           |
| Field Refer  |             |            | 152400.3 | 0        | 30°59'42.8" 105°26'33.659"W |           |

WELLPATH DATUM

Calculation Minimum curvature  
Horizontal Slot  
Vertical Re Patterson 257 (KB)  
MD Refere Patterson 257 (KB)  
Field Vertic Mean Sea Level  
Patterson † 3276.00ft  
Patterson ‡ 3276.00ft  
Patterson † 28.00ft  
Section Ori N 0.00, E 0.00 ft  
Section Azi 179.53°

WELLPATH DATA † = interpolated, ‡ = extrapolated station

| MD   | Inclination | Azimuth | TVD    | Vert Sect | North   | East   | Grid East | Grid North | Latitude | Longitude               | DLS       | Build Rate | Turn Rate | Comments    |
|------|-------------|---------|--------|-----------|---------|--------|-----------|------------|----------|-------------------------|-----------|------------|-----------|-------------|
| [ft] | [°]         | [°]     | [ft]   | [ft]      | [ft]    | [ft]   | [US ft]   | [US ft]    |          |                         | [°/100ft] | [°/100ft]  | [°/100ft] |             |
| †    | 0           | 0       | 86.5   | 0         | 0       | 0      | 0         | 538656     | 381591   | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         |             |
|      | 28          | 0       | 86.5   | 28        | 0       | 0      | 0         | 538656     | 381591   | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         |             |
|      | 169.4       | 1.2     | 86.5   | 169.39    | -0.08   | 0.09   | 1.48      | 538657.5   | 381591.1 | 32°02'56.5" 104°12'30.8 | 0.85      | 0.85       | 61.17     |             |
|      | 259.4       | 1.3     | 85.5   | 259.37    | -0.2    | 0.23   | 3.44      | 538659.4   | 381591.2 | 32°02'56.5" 104°12'30.8 | 0.11      | 0.11       | -1.11     |             |
|      | 353.4       | 1.5     | 84.5   | 353.34    | -0.38   | 0.43   | 5.72      | 538661.7   | 381591.4 | 32°02'56.5" 104°12'30.8 | 0.21      | 0.21       | -1.06     |             |
|      | 411.4       | 1.4     | 87.5   | 411.32    | -0.47   | 0.53   | 7.19      | 538663.2   | 381591.5 | 32°02'56.5" 104°12'30.8 | 0.22      | -0.17      | 5.17      | Tie On      |
| †    | 511.4       | 1.4     | 87.5   | 511.29    | -0.56   | 0.64   | 9.63      | 538665.6   | 381591.6 | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         |             |
|      | 550         | 1.4     | 87.5   | 549.88    | -0.59   | 0.68   | 10.57     | 538666.6   | 381591.7 | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         | Drop to Ve  |
| †    | 611.4       | 0.479   | 87.5   | 611.27    | -0.63   | 0.72   | 11.58     | 538667.6   | 381591.7 | 32°02'56.5" 104°12'30.8 | 1.5       | -1.5       | 0         |             |
|      | 643.33      | 0       | 22.515 | 643.2     | -0.63   | 0.73   | 11.71     | 538667.7   | 381591.7 | 32°02'56.5" 104°12'30.8 | 1.5       | -1.5       | -274.01   | Hold Inc    |
| †    | 711.4       | 0       | 22.515 | 711.27    | -0.63   | 0.73   | 11.71     | 538667.7   | 381591.7 | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         |             |
| †    | 811.4       | 0       | 22.515 | 811.27    | -0.63   | 0.73   | 11.71     | 538667.7   | 381591.7 | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         |             |
|      | 850.13      | 0       | 22.515 | 850       | -0.63   | 0.73   | 11.71     | 538667.7   | 381591.7 | 32°02'56.5" 104°12'30.8 | 0         | 0          | 0         | Start Build |
| †    | 911.4       | 0.919   | 22.515 | 911.27    | -1.09   | 1.18   | 11.9      | 538667.9   | 381592.2 | 32°02'56.5" 104°12'30.8 | 1.5       | 1.5        | 36.75     |             |
| †    | 1011.4      | 2.419   | 22.515 | 1011.22   | -3.77   | 3.88   | 13.01     | 538669     | 381594.9 | 32°02'56.6" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1111.4      | 3.919   | 22.515 | 1111.07   | -8.86   | 8.98   | 15.13     | 538671.1   | 381600   | 32°02'56.6" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1211.4      | 5.419   | 22.515 | 1210.73   | -16.35  | 16.5   | 18.25     | 538674.3   | 381607.5 | 32°02'56.7" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1311.4      | 6.919   | 22.515 | 1310.15   | -26.24  | 26.43  | 22.36     | 538678.4   | 381617.4 | 32°02'56.8" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1411.4      | 8.419   | 22.515 | 1409.25   | -38.53  | 38.76  | 27.47     | 538683.5   | 381629.8 | 32°02'56.9" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1511.4      | 9.919   | 22.515 | 1507.97   | -53.2   | 53.48  | 33.57     | 538689.6   | 381644.5 | 32°02'57.0" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
| †    | 1611.4      | 11.419  | 22.515 | 1606.24   | -70.24  | 70.58  | 40.66     | 538696.7   | 381661.6 | 32°02'57.2" 104°12'30.8 | 1.5       | 1.5        | 0         |             |
|      | 1674.28     | 12.362  | 22.515 | 1667.77   | -82.17  | 82.55  | 45.62     | 538701.6   | 381673.5 | 32°02'57.3" 104°12'30.8 | 1.5       | 1.5        | 0         | End Build   |
| †    | 1711.4      | 12.362  | 22.515 | 1704.03   | -89.48  | 89.89  | 48.67     | 538704.7   | 381680.9 | 32°02'57.4" 104°12'30.8 | 0         | 0          | 0         |             |
| †    | 1811.4      | 12.362  | 22.515 | 1801.71   | -109.19 | 109.66 | 56.87     | 538712.9   | 381700.7 | 32°02'57.6" 104°12'30.8 | 0         | 0          | 0         |             |
| †    | 1911.4      | 12.362  | 22.515 | 1899.39   | -128.9  | 129.44 | 65.06     | 538721.1   | 381720.4 | 32°02'57.8" 104°12'30.8 | 0         | 0          | 0         |             |
| †    | 2011.4      | 12.362  | 22.515 | 1997.07   | -148.61 | 149.22 | 73.26     | 538729.3   | 381740.2 | 32°02'58.0" 104°12'29.8 | 0         | 0          | 0         |             |
| †    | 2111.4      | 12.362  | 22.515 | 2094.76   | -168.32 | 169    | 81.46     | 538737.5   | 381760   | 32°02'58.2" 104°12'29.8 | 0         | 0          | 0         |             |
| †    | 2211.4      | 12.362  | 22.515 | 2192.44   | -188.03 | 188.77 | 89.66     | 538745.7   | 381779.8 | 32°02'58.4" 104°12'29.8 | 0         | 0          | 0         |             |
| †    | 2311.4      | 12.362  | 22.515 | 2290.12   | -207.74 | 208.55 | 97.86     | 538753.9   | 381799.5 | 32°02'58.6" 104°12'29.8 | 0         | 0          | 0         |             |

|   |         |        |        |         |         |        |        |          |          |            |             |     |      |                  |
|---|---------|--------|--------|---------|---------|--------|--------|----------|----------|------------|-------------|-----|------|------------------|
| † | 2411.4  | 12.362 | 22.515 | 2387.8  | -227.45 | 228.33 | 106.06 | 538762.1 | 381819.3 | 32°02'58.8 | 104°12'29.1 | 0   | 0    | 0                |
| † | 2511.4  | 12.362 | 22.515 | 2485.48 | -247.16 | 248.11 | 114.25 | 538770.2 | 381839.1 | 32°02'59.0 | 104°12'29.1 | 0   | 0    | 0                |
| † | 2611.4  | 12.362 | 22.515 | 2583.16 | -266.87 | 267.88 | 122.45 | 538778.4 | 381858.9 | 32°02'59.2 | 104°12'29.1 | 0   | 0    | 0                |
| † | 2711.4  | 12.362 | 22.515 | 2680.84 | -286.58 | 287.66 | 130.65 | 538786.6 | 381878.6 | 32°02'59.4 | 104°12'29.1 | 0   | 0    | 0                |
| † | 2811.4  | 12.362 | 22.515 | 2778.53 | -306.29 | 307.44 | 138.85 | 538794.8 | 381898.4 | 32°02'59.6 | 104°12'29.1 | 0   | 0    | 0                |
| † | 2911.4  | 12.362 | 22.515 | 2876.21 | -326    | 327.22 | 147.05 | 538803   | 381918.2 | 32°02'59.8 | 104°12'29.1 | 0   | 0    | 0                |
| † | 3011.4  | 12.362 | 22.515 | 2973.89 | -345.71 | 346.99 | 155.25 | 538811.2 | 381938   | 32°03'00.0 | 104°12'29.1 | 0   | 0    | 0                |
| † | 3111.4  | 12.362 | 22.515 | 3071.57 | -365.42 | 366.77 | 163.44 | 538819.4 | 381957.7 | 32°03'00.1 | 104°12'29.1 | 0   | 0    | 0                |
| † | 3211.4  | 12.362 | 22.515 | 3169.25 | -385.13 | 386.55 | 171.64 | 538827.6 | 381977.5 | 32°03'00.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 3293.28 | 12.362 | 22.515 | 3249.23 | -401.26 | 402.74 | 178.35 | 538834.3 | 381993.7 | 32°03'00.5 | 104°12'29.1 | 0   | 0    | 0 Start Drop     |
| † | 3311.4  | 12.09  | 22.515 | 3266.94 | -404.8  | 406.29 | 179.82 | 538835.8 | 381997.3 | 32°03'00.5 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3411.4  | 10.59  | 22.515 | 3364.99 | -422.9  | 424.45 | 187.35 | 538843.3 | 382015.4 | 32°03'00.7 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3511.4  | 9.09   | 22.515 | 3463.51 | -438.63 | 440.24 | 193.9  | 538849.9 | 382031.2 | 32°03'00.9 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3611.4  | 7.59   | 22.515 | 3562.45 | -451.99 | 453.64 | 199.45 | 538855.4 | 382044.6 | 32°03'01.0 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3711.4  | 6.09   | 22.515 | 3661.74 | -462.95 | 464.64 | 204.01 | 538860   | 382055.6 | 32°03'01.1 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3811.4  | 4.59   | 22.515 | 3761.3  | -471.52 | 473.24 | 207.58 | 538863.6 | 382064.2 | 32°03'01.2 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 3911.4  | 3.09   | 22.515 | 3861.07 | -477.68 | 479.42 | 210.14 | 538866.1 | 382070.4 | 32°03'01.3 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 4011.4  | 1.59   | 22.515 | 3960.99 | -481.44 | 483.2  | 211.71 | 538867.7 | 382074.2 | 32°03'01.3 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 4111.4  | 0.09   | 22.515 | 4060.97 | -482.79 | 484.55 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 1.5 | -1.5 | 0                |
| † | 4117.43 | 0      | 133    | 4067    | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 1.5 | -1.5 | -373.55 End Drop |
| † | 4211.4  | 0      | 133    | 4160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4311.4  | 0      | 133    | 4260.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4411.4  | 0      | 133    | 4360.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4511.4  | 0      | 133    | 4460.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4611.4  | 0      | 133    | 4560.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4711.4  | 0      | 133    | 4660.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4811.4  | 0      | 133    | 4760.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 4911.4  | 0      | 133    | 4860.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5011.4  | 0      | 133    | 4960.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5111.4  | 0      | 133    | 5060.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5211.4  | 0      | 133    | 5160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5311.4  | 0      | 133    | 5260.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5411.4  | 0      | 133    | 5360.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5511.4  | 0      | 133    | 5460.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5611.4  | 0      | 133    | 5560.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5711.4  | 0      | 133    | 5660.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5811.4  | 0      | 133    | 5760.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 5911.4  | 0      | 133    | 5860.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6011.4  | 0      | 133    | 5960.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6111.4  | 0      | 133    | 6060.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6211.4  | 0      | 133    | 6160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6311.4  | 0      | 133    | 6260.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6411.4  | 0      | 133    | 6360.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6511.4  | 0      | 133    | 6460.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6611.4  | 0      | 133    | 6560.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6711.4  | 0      | 133    | 6660.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6811.4  | 0      | 133    | 6760.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 6911.4  | 0      | 133    | 6860.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7011.4  | 0      | 133    | 6960.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7111.4  | 0      | 133    | 7060.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7211.4  | 0      | 133    | 7160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7311.4  | 0      | 133    | 7260.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7411.4  | 0      | 133    | 7360.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7511.4  | 0      | 133    | 7460.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7611.4  | 0      | 133    | 7560.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7711.4  | 0      | 133    | 7660.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7811.4  | 0      | 133    | 7760.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 7911.4  | 0      | 133    | 7860.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8011.4  | 0      | 133    | 7960.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8111.4  | 0      | 133    | 8060.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8211.4  | 0      | 133    | 8160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8311.4  | 0      | 133    | 8260.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8411.4  | 0      | 133    | 8360.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8511.4  | 0      | 133    | 8460.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8611.4  | 0      | 133    | 8560.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8711.4  | 0      | 133    | 8660.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8811.4  | 0      | 133    | 8760.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 8911.4  | 0      | 133    | 8860.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 9011.4  | 0      | 133    | 8960.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 9111.4  | 0      | 133    | 9060.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 9211.4  | 0      | 133    | 9160.97 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0                |
| † | 9258.37 | 0      | 133    | 9207.95 | -482.8  | 484.56 | 212.27 | 538868.3 | 382075.5 | 32°03'01.3 | 104°12'29.1 | 0   | 0    | 0 Curve KOP      |
| † | 9311.4  | 5.303  | 133    | 9260.9  | -481.11 | 482.88 | 214.06 | 538870   | 382073.8 | 32°03'01.3 | 104°12'29.1 | 10  | 10   | 250.81           |
| † | 9411.4  | 15.303 | 133    | 9359.16 | -468.82 | 470.7  | 227.13 | 538883.1 | 382061.7 | 32°03'01.2 | 104°12'29.1 | 10  | 10   | 0                |
| † | 9511.4  | 25.303 | 133    | 9452.83 | -444.98 | 447.07 | 252.47 | 538908.5 | 382038   | 32°03'00.9 | 104°12'29.1 | 10  | 10   | 0                |
| † | 9611.4  | 35.303 | 133    | 9539.06 | -410.31 | 412.7  | 289.33 | 538945.3 | 382003.7 | 32°03'00.6 | 104°12'29.1 | 10  | 10   | 0                |

|   |          |        |         |         |         |          |        |          |          |             |              |    |      |      |             |
|---|----------|--------|---------|---------|---------|----------|--------|----------|----------|-------------|--------------|----|------|------|-------------|
|   | 9658.37  | 40     | 133     | 9576.24 | -390.58 | 393.14   | 310.3  | 538966.3 | 381984.1 | 32°03'00.4" | 104°12'27.1" | 10 | 10   | 0    | Cont. Build |
| † | 9711.4   | 43.297 | 139.255 | 9615.87 | -364.96 | 367.72   | 334.65 | 538990.6 | 381958.7 | 32°03'00.2" | 104°12'26.1" | 10 | 6.22 | 11.8 |             |
| † | 9811.4   | 50.279 | 149.106 | 9684.39 | -305.49 | 308.59   | 376.89 | 539032.9 | 381899.6 | 32°02'59.6" | 104°12'26.1" | 10 | 6.98 | 9.85 |             |
| † | 9911.4   | 57.936 | 157.063 | 9743.03 | -232.98 | 236.38   | 413.24 | 539069.2 | 381827.4 | 32°02'58.9" | 104°12'26.1" | 10 | 7.66 | 7.96 |             |
| † | 10011.4  | 66.011 | 163.756 | 9790.02 | -149.65 | 153.29   | 442.61 | 539098.6 | 381744.3 | 32°02'58.0" | 104°12'25.7" | 10 | 8.08 | 6.69 |             |
| † | 10111.4  | 74.342 | 169.644 | 9823.93 | -58.03  | 61.84    | 464.09 | 539120.1 | 381652.8 | 32°02'57.1" | 104°12'25.7" | 10 | 8.33 | 5.89 |             |
| † | 10211.4  | 82.817 | 175.064 | 9843.73 | 39.1    | -35.19   | 477.05 | 539133   | 381555.8 | 32°02'56.2" | 104°12'25.7" | 10 | 8.48 | 5.42 |             |
|   | 10295.56 | 90     | 179.461 | 9849    | 122.95  | -119.01  | 481.04 | 539137   | 381472   | 32°02'55.3" | 104°12'25.7" | 10 | 8.54 | 5.22 | End Build/  |
| † | 10311.4  | 90     | 179.461 | 9849    | 138.8   | -134.85  | 481.19 | 539137.2 | 381456.2 | 32°02'55.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10411.4  | 90     | 179.461 | 9849    | 238.8   | -234.85  | 482.13 | 539138.1 | 381356.2 | 32°02'54.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10511.4  | 90     | 179.461 | 9849    | 338.8   | -334.84  | 483.07 | 539139   | 381256.2 | 32°02'53.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10611.4  | 90     | 179.461 | 9849    | 438.8   | -434.84  | 484.02 | 539140   | 381156.2 | 32°02'52.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10711.4  | 90     | 179.461 | 9849    | 538.8   | -534.84  | 484.96 | 539140.9 | 381056.2 | 32°02'51.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10811.4  | 90     | 179.461 | 9849    | 638.8   | -634.83  | 485.9  | 539141.9 | 380956.2 | 32°02'50.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 10911.4  | 90     | 179.461 | 9849    | 738.8   | -734.83  | 486.84 | 539142.8 | 380856.2 | 32°02'49.2" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11011.4  | 90     | 179.461 | 9849    | 838.8   | -834.82  | 487.78 | 539143.7 | 380756.3 | 32°02'48.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11111.4  | 90     | 179.461 | 9849    | 938.8   | -934.82  | 488.72 | 539144.7 | 380656.3 | 32°02'47.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11211.4  | 90     | 179.461 | 9849    | 1038.8  | -1034.81 | 489.66 | 539145.6 | 380556.3 | 32°02'46.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11311.4  | 90     | 179.461 | 9849    | 1138.8  | -1134.81 | 490.6  | 539146.6 | 380456.3 | 32°02'45.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11411.4  | 90     | 179.461 | 9849    | 1238.8  | -1234.8  | 491.54 | 539147.5 | 380356.3 | 32°02'44.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11511.4  | 90     | 179.461 | 9849    | 1338.8  | -1334.8  | 492.48 | 539148.4 | 380256.3 | 32°02'43.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11611.4  | 90     | 179.461 | 9849    | 1438.8  | -1434.8  | 493.42 | 539149.4 | 380156.3 | 32°02'42.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11711.4  | 90     | 179.461 | 9849    | 1538.8  | -1534.79 | 494.36 | 539150.3 | 380056.4 | 32°02'41.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11811.4  | 90     | 179.461 | 9849    | 1638.8  | -1634.79 | 495.3  | 539151.3 | 379956.4 | 32°02'40.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 11911.4  | 90     | 179.461 | 9849    | 1738.8  | -1734.78 | 496.24 | 539152.2 | 379856.4 | 32°02'39.3" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12011.4  | 90     | 179.461 | 9849    | 1838.79 | -1834.78 | 497.18 | 539153.1 | 379756.4 | 32°02'38.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12111.4  | 90     | 179.461 | 9849    | 1938.79 | -1934.77 | 498.13 | 539154.1 | 379656.4 | 32°02'37.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12211.4  | 90     | 179.461 | 9849    | 2038.79 | -2034.77 | 499.07 | 539155   | 379556.4 | 32°02'36.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12311.4  | 90     | 179.461 | 9849    | 2138.79 | -2134.77 | 500.01 | 539156   | 379456.4 | 32°02'35.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12411.4  | 90     | 179.461 | 9849    | 2238.79 | -2234.76 | 500.95 | 539156.9 | 379356.4 | 32°02'34.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12511.4  | 90     | 179.461 | 9849    | 2338.79 | -2334.76 | 501.89 | 539157.8 | 379256.5 | 32°02'33.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12611.4  | 90     | 179.461 | 9849    | 2438.79 | -2434.75 | 502.83 | 539158.8 | 379156.5 | 32°02'32.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12711.4  | 90     | 179.461 | 9849    | 2538.79 | -2534.75 | 503.77 | 539159.7 | 379056.5 | 32°02'31.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12811.4  | 90     | 179.461 | 9849    | 2638.79 | -2634.74 | 504.71 | 539160.7 | 378956.5 | 32°02'30.4" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 12911.4  | 90     | 179.461 | 9849    | 2738.79 | -2734.74 | 505.65 | 539161.6 | 378856.5 | 32°02'29.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13011.4  | 90     | 179.461 | 9849    | 2838.79 | -2834.73 | 506.59 | 539162.6 | 378756.5 | 32°02'28.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13111.4  | 90     | 179.461 | 9849    | 2938.79 | -2934.73 | 507.53 | 539163.5 | 378656.5 | 32°02'27.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13211.4  | 90     | 179.461 | 9849    | 3038.79 | -3034.73 | 508.47 | 539164.4 | 378556.6 | 32°02'26.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13311.4  | 90     | 179.461 | 9849    | 3138.79 | -3134.72 | 509.41 | 539165.4 | 378456.6 | 32°02'25.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13411.4  | 90     | 179.461 | 9849    | 3238.79 | -3234.72 | 510.35 | 539166.3 | 378356.6 | 32°02'24.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13511.4  | 90     | 179.461 | 9849    | 3338.79 | -3334.71 | 511.3  | 539167.3 | 378256.6 | 32°02'23.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13611.4  | 90     | 179.461 | 9849    | 3438.79 | -3434.71 | 512.24 | 539168.2 | 378156.6 | 32°02'22.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13711.4  | 90     | 179.461 | 9849    | 3538.79 | -3534.7  | 513.18 | 539169.1 | 378056.6 | 32°02'21.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13811.4  | 90     | 179.461 | 9849    | 3638.79 | -3634.7  | 514.12 | 539170.1 | 377956.6 | 32°02'20.5" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 13911.4  | 90     | 179.461 | 9849    | 3738.79 | -3734.69 | 515.06 | 539171   | 377856.7 | 32°02'19.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14011.4  | 90     | 179.461 | 9849    | 3838.79 | -3834.69 | 516    | 539172   | 377756.7 | 32°02'18.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14111.4  | 90     | 179.461 | 9849    | 3938.79 | -3934.69 | 516.94 | 539172.9 | 377656.7 | 32°02'17.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14211.4  | 90     | 179.461 | 9849    | 4038.79 | -4034.68 | 517.88 | 539173.8 | 377556.7 | 32°02'16.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14311.4  | 90     | 179.461 | 9849    | 4138.79 | -4134.68 | 518.82 | 539174.8 | 377456.7 | 32°02'15.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14411.4  | 90     | 179.461 | 9849    | 4238.79 | -4234.67 | 519.76 | 539175.7 | 377356.7 | 32°02'14.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14511.4  | 90     | 179.461 | 9849    | 4338.79 | -4334.67 | 520.7  | 539176.7 | 377256.7 | 32°02'13.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14611.4  | 90     | 179.461 | 9849    | 4438.79 | -4434.66 | 521.64 | 539177.6 | 377156.7 | 32°02'12.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14711.4  | 90     | 179.461 | 9849    | 4538.79 | -4534.66 | 522.58 | 539178.5 | 377056.8 | 32°02'11.6" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14811.4  | 90     | 179.461 | 9849    | 4638.79 | -4634.65 | 523.52 | 539179.5 | 376956.8 | 32°02'10.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 14911.4  | 90     | 179.461 | 9849    | 4738.79 | -4734.65 | 524.47 | 539180.4 | 376856.8 | 32°02'09.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15011.4  | 90     | 179.461 | 9849    | 4838.79 | -4834.65 | 525.41 | 539181.4 | 376756.8 | 32°02'08.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15111.4  | 90     | 179.461 | 9849    | 4938.79 | -4934.64 | 526.35 | 539182.3 | 376656.8 | 32°02'07.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15211.4  | 90     | 179.461 | 9849    | 5038.79 | -5034.64 | 527.29 | 539183.2 | 376556.8 | 32°02'06.7" | 104°12'25.7" | 0  | 0    | 0    |             |
|   | 15292.23 | 90     | 179.461 | 9849    | 5119.63 | -5115.47 | 528.05 | 539184   | 376476   | 32°02'05.9" | 104°12'25.7" | 0  | 0    | 0    | Start Turn  |
|   | 15299.2  | 90     | 179.6   | 9849    | 5126.59 | -5122.43 | 528.11 | 539184.1 | 376469   | 32°02'05.8" | 104°12'25.7" | 2  | 0    | 2    | End Turn    |
| † | 15311.4  | 90     | 179.6   | 9849    | 5138.79 | -5134.63 | 528.19 | 539184.1 | 376456.8 | 32°02'05.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15411.4  | 90     | 179.6   | 9849    | 5238.79 | -5234.63 | 528.89 | 539184.8 | 376356.9 | 32°02'04.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15511.4  | 90     | 179.6   | 9849    | 5338.79 | -5334.63 | 529.59 | 539185.5 | 376256.9 | 32°02'03.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15611.4  | 90     | 179.6   | 9849    | 5438.79 | -5434.63 | 530.28 | 539186.2 | 376156.9 | 32°02'02.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15711.4  | 90     | 179.6   | 9849    | 5538.79 | -5534.62 | 530.98 | 539186.9 | 376056.9 | 32°02'01.7" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15811.4  | 90     | 179.6   | 9849    | 5638.79 | -5634.62 | 531.68 | 539187.6 | 375956.9 | 32°02'00.8" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 15911.4  | 90     | 179.6   | 9849    | 5738.79 | -5734.62 | 532.38 | 539188.3 | 375856.9 | 32°01'59.8" | 104°12'25.7" | 0  | 0    | 0    |             |
| † | 16011.4  | 90     | 179.6   | 9849    | 5838.79 | -5834.62 | 533.07 | 539189   |          |             |              |    |      |      |             |



|   |          |    |       |      |          |           |        |          |          |            |             |   |   |              |
|---|----------|----|-------|------|----------|-----------|--------|----------|----------|------------|-------------|---|---|--------------|
| † | 16911.4  | 90 | 179.6 | 9849 | 6738.79  | -6734.59  | 539.35 | 539195.3 | 374857   | 32°01'49.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17011.4  | 90 | 179.6 | 9849 | 6838.79  | -6834.59  | 540.05 | 539196   | 374757   | 32°01'48.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17111.4  | 90 | 179.6 | 9849 | 6938.79  | -6934.59  | 540.75 | 539196.7 | 374657   | 32°01'47.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17211.4  | 90 | 179.6 | 9849 | 7038.79  | -7034.59  | 541.45 | 539197.4 | 374557.1 | 32°01'46.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17311.4  | 90 | 179.6 | 9849 | 7138.79  | -7134.58  | 542.14 | 539198.1 | 374457.1 | 32°01'45.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17411.4  | 90 | 179.6 | 9849 | 7238.79  | -7234.58  | 542.84 | 539198.8 | 374357.1 | 32°01'44.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17511.4  | 90 | 179.6 | 9849 | 7338.79  | -7334.58  | 543.54 | 539199.5 | 374257.1 | 32°01'43.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17611.4  | 90 | 179.6 | 9849 | 7438.79  | -7434.58  | 544.24 | 539200.2 | 374157.1 | 32°01'42.9 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17711.4  | 90 | 179.6 | 9849 | 7538.79  | -7534.57  | 544.93 | 539200.9 | 374057.1 | 32°01'42.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17811.4  | 90 | 179.6 | 9849 | 7638.79  | -7634.57  | 545.63 | 539201.6 | 373957.1 | 32°01'41.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 17911.4  | 90 | 179.6 | 9849 | 7738.79  | -7734.57  | 546.33 | 539202.3 | 373857.1 | 32°01'40.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18011.4  | 90 | 179.6 | 9849 | 7838.79  | -7834.57  | 547.03 | 539203.0 | 373757.2 | 32°01'39.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18111.4  | 90 | 179.6 | 9849 | 7938.79  | -7934.56  | 547.73 | 539203.7 | 373657.2 | 32°01'38.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18211.4  | 90 | 179.6 | 9849 | 8038.79  | -8034.56  | 548.42 | 539204.4 | 373557.2 | 32°01'37.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18311.4  | 90 | 179.6 | 9849 | 8138.79  | -8134.56  | 549.12 | 539205.1 | 373457.2 | 32°01'36.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18411.4  | 90 | 179.6 | 9849 | 8238.79  | -8234.56  | 549.82 | 539205.8 | 373357.2 | 32°01'35.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18511.4  | 90 | 179.6 | 9849 | 8338.79  | -8334.55  | 550.52 | 539206.5 | 373257.2 | 32°01'34.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18611.4  | 90 | 179.6 | 9849 | 8438.79  | -8434.55  | 551.21 | 539207.2 | 373157.2 | 32°01'33.0 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18711.4  | 90 | 179.6 | 9849 | 8538.79  | -8534.55  | 551.91 | 539207.9 | 373057.2 | 32°01'32.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18811.4  | 90 | 179.6 | 9849 | 8638.79  | -8634.55  | 552.61 | 539208.6 | 372957.2 | 32°01'31.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 18911.4  | 90 | 179.6 | 9849 | 8738.79  | -8734.54  | 553.31 | 539209.3 | 372857.3 | 32°01'30.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19011.4  | 90 | 179.6 | 9849 | 8838.79  | -8834.54  | 554    | 539210   | 372757.3 | 32°01'29.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19111.4  | 90 | 179.6 | 9849 | 8938.79  | -8934.54  | 554.7  | 539210.7 | 372657.3 | 32°01'28.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19211.4  | 90 | 179.6 | 9849 | 9038.79  | -9034.54  | 555.4  | 539211.4 | 372557.3 | 32°01'27.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19311.4  | 90 | 179.6 | 9849 | 9138.79  | -9134.54  | 556.1  | 539212.1 | 372457.3 | 32°01'26.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19411.4  | 90 | 179.6 | 9849 | 9238.79  | -9234.53  | 556.79 | 539212.7 | 372357.3 | 32°01'25.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19511.4  | 90 | 179.6 | 9849 | 9338.79  | -9334.53  | 557.49 | 539213.4 | 372257.3 | 32°01'24.1 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19611.4  | 90 | 179.6 | 9849 | 9438.79  | -9434.53  | 558.19 | 539214.1 | 372157.3 | 32°01'23.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19711.4  | 90 | 179.6 | 9849 | 9538.79  | -9534.53  | 558.89 | 539214.8 | 372057.3 | 32°01'22.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19811.4  | 90 | 179.6 | 9849 | 9638.79  | -9634.52  | 559.59 | 539215.5 | 371957.4 | 32°01'21.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 19911.4  | 90 | 179.6 | 9849 | 9738.79  | -9734.52  | 560.28 | 539216.2 | 371857.4 | 32°01'20.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20011.4  | 90 | 179.6 | 9849 | 9838.79  | -9834.52  | 560.98 | 539216.9 | 371757.4 | 32°01'19.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20111.4  | 90 | 179.6 | 9849 | 9938.79  | -9934.52  | 561.68 | 539217.6 | 371657.4 | 32°01'18.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20211.4  | 90 | 179.6 | 9849 | 10038.79 | -10034.51 | 562.38 | 539218.3 | 371557.4 | 32°01'17.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20311.4  | 90 | 179.6 | 9849 | 10138.79 | -10134.51 | 563.07 | 539219   | 371457.4 | 32°01'16.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20411.4  | 90 | 179.6 | 9849 | 10238.79 | -10234.51 | 563.77 | 539219.7 | 371357.4 | 32°01'15.2 | 104°12'24.1 | 0 | 0 | 0            |
| † | 20511.4  | 90 | 179.6 | 9849 | 10338.79 | -10334.51 | 564.47 | 539220.4 | 371257.4 | 32°01'14.2 | 104°12'24.1 | 0 | 0 | 0            |
|   | 20594.85 | 90 | 179.6 | 9849 | 10422.23 | -10417.95 | 565.05 | 539221   | 371174   | 32°01'13.4 | 104°12'24.1 | 0 | 0 | 0 PBHL (25') |

HOLE AND CASING SECTIONS Ref Wellbore: HH SO 17 20 Fed 002 No. 4H PWB Ref Wellpath: HH SO 17 20 Fed 002 No. 4H Rev-A.0

| String/Diar | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
|-------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| 13.375in C: | 28            | 441         | 413           | 28             | 440.91       | 0              | 0              | 0.56         | 7.91         |
| 9.625in Ca: | 28            | 8299.43     | 8271.43       | 28             | 8249         | 0              | 0              | 484.56       | 212.27       |
| 5.5in Casin | 28            | 20594.85    | 20566.85      | 28             | 9849         | 0              | 0              | -10417.95    | 565.05       |

TARGETS

| Name                | MD [ft]  | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude   | Longitude   | Shape | Comment |
|---------------------|----------|----------|------------|-----------|-------------------|--------------------|------------|-------------|-------|---------|
| (1) HH SO 1         | 10295.56 | 9849     | -119.01    | 481.04    | 539137            | 381472             | 32°02'55.3 | 104°12'25.1 | point |         |
| HH SO 17 20 Fed 002 | 10295.56 | 9849     | -10112.92  | 563.05    | 539219            | 371479             | 32°01'16.4 | 104°12'24.1 | point |         |
| (2) HH SO 1         | 15292.23 | 9849     | -5115.47   | 528.05    | 539184            | 376476             | 32°02'05.9 | 104°12'24.1 | point |         |
| (3) HH SO 1         | 20594.85 | 9849     | -10417.95  | 565.05    | 539221            | 371174             | 32°01'13.4 | 104°12'24.1 | point |         |

SURVEY PROGRAM Ref Wellbore: HH SO 17 20 Fed 002 No. 4H PWB Ref Wellpath: HH SO 17 20 Fed 002 No. 4H Rev-A.0

| Start MD [ft] | End MD [ft] | Pos Unc | Log Name/ Wellbore                                |
|---------------|-------------|---------|---------------------------------------------------|
| 28            | 411.4       |         | OWSG MW MWD Surv. HH SO 17 20 Fed 002 No. 4H AWB  |
| 411.4         | 8400        |         | OWSG MWD rev2 + HF HH SO 17 20 Fed 002 No. 4H PWB |
| 8400          | 21000       |         | OWSG MWD rev2 + HF HH SO 17 20 Fed 002 No. 4H PWB |

COMMENTS