

OCB - HOBBS  
04/13/2020  
RECEIVED

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
		8. Lease Name and Well No.  326326
2. Name of Operator  372224		9. API Well No.  30-025-47094
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory XX XXX 98234
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

Application approval 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.  
Conditions of approval, if any, are attached.

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.

GCP Rec 04/13/2020

NSL

(Continued on page 2)

**APPROVED WITH CONDITIONS**  
Approval Date: 04/08/2020

KZ  
04/21/2020

REQUIRES NSL

\*(Instructions on page 2)

# PECOS DISTRICT

## DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Ameredev Operating LLC
<b>WELL NAME &amp; NO.:</b>	Holly Fed Com 26 36 05 122
<b>SURFACE HOLE FOOTAGE:</b>	230 FNL / 2280 FWL
<b>BOTTOM HOLE FOOTAGE:</b>	50 FSL / 2440 FWL
<b>LOCATION:</b>	Sec 5 / T26S / R36E / NMP
<b>COUNTY:</b>	Lea, NM

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 checked="" type="radio"/> Low	<input type="radio"/> Medium	<input 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 type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input checked="" 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 checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately \_ feet (a minimum of 25 feet (Lea 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:
- a. Cement should tie-back at least **50 feet** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.
3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is: Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
  - b. Second stage above DV tool:
    - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
- ❖ In Capitan Reef 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.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
  - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

- ❖ **If alternate four-string casing design is utilized**, freshwater-based mud shall be used across the capitan interval.

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

- Cement should tie-back at least **50 feet** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.

### **C. 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 **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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.

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

#### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on

which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.



- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

04/09/2020

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Christie Hanna

**Signed on:** 05/28/2019

**Title:** Senior Engineering Technician

**Street Address:** 2901 VIA FORTUNA, SUITE 600

**City:** AUSTIN

**State:** TX

**Zip:** 78746

**Phone:** (737)300-4723

**Email address:** channa@ameredev.com

## Field Representative

**Representative Name:**

**Street Address:** 5707 SOUTHWEST PARKWAY, BLDG 1, STE. 275

**City:** AUSTIN

**State:** TX

**Zip:** 78735

**Phone:** (580)940-5054

**Email address:** zboyd@ameredev.com



APD ID: 10400042254

Submission Date: 05/28/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: AMEREDEV OPERATING LLC

Well Name: HOLLY FED COM 26 36 05

Well Number: 122H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
465569	RUSTLER ANHYDRITE	3004	1138	1138	ANHYDRITE	NONE	N
465563	SALADO	1414	1589	1589	SALT	NONE	N
465564	TANSILL	-402	3405	3405	LIMESTONE	NONE	N
465565	CAPITAN REEF	-857	3860	3860	LIMESTONE	USEABLE WATER	N
465566	LAMAR	-2068	5071	5071	LIMESTONE	NONE	N
465571	BELL CANYON	-2188	5191	5191	SANDSTONE	NATURAL GAS, OIL	N
465574	BRUSHY CANYON	-4169	7172	7172	SANDSTONE	NATURAL GAS, OIL	N
465575	BONE SPRING LIME	-5219	8222	8222	LIMESTONE	NONE	N
465572	BONE SPRING 1ST	-6595	9598	9598	SANDSTONE	NATURAL GAS, OIL	N
465567	BONE SPRING 2ND	-7111	10114	10114	SANDSTONE	NATURAL GAS, OIL	N
465568	BONE SPRING 3RD	-7666	10669	10669	LIMESTONE	NONE	N
465570	BONE SPRING 3RD	-8269	11272	11272	SANDSTONE	NATURAL GAS, OIL	N
465573	WOLFCAMP	-8539	11542	11542	SHALE	NATURAL GAS, OIL	N
465663	WOLFCAMP	-8855	11859	11859	SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

**Pressure Rating (PSI):** 10M

**Rating Depth:** 15000

**Equipment:** 10M BOPE SYSTEM WILL BE USED AFTER THE SURFACE CASING IS SET. A KELLY COCK WILL BE KEPT IN THE DRILL STRING AT ALL TIMES. A FULL OPENING DRILL PIPE STABBING VALVE WITH PROPER DRILL PIPE CONNECTIONS WILL BE ON THE RIG FLOOR AT ALL TIMES.

**Requesting Variance?** YES

**Variance request:** Co-Flex Choke Line, 5M Annular Preventer

**Testing Procedure:** See attachment

**Choke Diagram Attachment:**

10M\_Choke\_Manifold\_REV\_20190528150527.pdf

**BOP Diagram Attachment:**

5M\_Annular\_Preventer\_Variance\_and\_Well\_Control\_Plan\_20190528150540.pdf

5M\_BOP\_System\_20190528150541.pdf

Pressure\_Control\_Plan\_Single\_Well\_MB4\_3String\_Big\_Hole\_BLM\_20190528150541.pdf

4\_String\_MB\_Ameredev\_Wellhead\_Drawing\_net\_REV\_20190528150554.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1263	0	1263	3004		1263	J-55	68	OTHER - BTC	7.27	0.65	DRY	10.65	DRY	12.45
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	10794	0	10794			10794	HCL-80	40	OTHER - BTC	1.27	1.2	DRY	2.22	DRY	2.18
3	PRODUCTION	8.5	5.5	NEW	API	N	0	22935	0	12159			22935	OTHER	20	OTHER - BTC	1.71	1.82	DRY	2.69	DRY	2.99

### Casing Attachments

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

## Casing Attachments

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**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

13.375\_68.00\_\_\_J55\_BTC\_20190528150639.pdf

Holly\_Fed\_Com\_26\_36\_05\_122H\_\_\_Wellbore\_Diagram\_and\_CDA\_20190528150724.pdf

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**Casing ID:** 2      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

9.625\_40\_SeAH80HC\_4100\_Collapse\_20190528150649.pdf

Holly\_Fed\_Com\_26\_36\_05\_122H\_\_\_Wellbore\_Diagram\_and\_CDA\_20190528150716.pdf

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**Casing ID:** 3      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

5.50\_20\_USS\_P110\_HC\_BTC\_API\_20190528150658.pdf

Holly\_Fed\_Com\_26\_36\_05\_122H\_\_\_Wellbore\_Diagram\_and\_CDA\_20190528150709.pdf

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**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

#### Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	877	595	1.76	13.5	1046.93	50	CLASS C	Bentonite, Accelerator, Kolseal, Defoamer, Celloflake
SURFACE	Tail		877	1263	200	1.34	14.8	268	100	CLASS C	Salt
INTERMEDIATE	Lead	5121	0	4271	703	2.47	11.9	1737.18	25	Class C	Salt, Bentonite, Kolseal, Defoamer, Celloflake, Anti-Settling Expansion Additive
INTERMEDIATE	Tail		4271	5121	200	1.33	14.8	266	25	Class C	Retarder
INTERMEDIATE	Lead	5121	5121	9538	1550	2.47	11.9	3829.29	25	Class H	Bentonite, Salt, Kolseal, Defoamer, Celloflake, Retarder, Anti-Settling Expansion Additive
INTERMEDIATE	Tail		9538	10794	300	1.24	14.5	371.1	25	Class H	Salt, Bentonite, Retarder, Dispersant, Fluid Loss
PRODUCTION	Lead		0	22935	4897	1.34	14.2	6562.01	25	Class H	Salt, Bentonite, Fluid Loss, Dispersant, Retarder, Defoamer

#### Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** All necessary supplies (e.g. bentonite, cedar bark) for fluid control will be on site.

**Describe the mud monitoring system utilized:** An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure, and pump rate.

#### Circulating Medium Table

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1263	WATER-BASED MUD	8.4	8.6							
1263	1079 4	OTHER : Diesel Brine Emulsion	8.5	9.4							
1079 4	1215 9	OIL-BASED MUD	10.5	12.5							

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

A directional survey, measurement while drilling and a mudlog/geologic lithology log will all be run from surface to TD.

**List of open and cased hole logs run in the well:**

DS,MWD,MUDLOG

**Coring operation description for the well:**

No coring will be done on this well.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6639

**Anticipated Surface Pressure:** 3964.02

**Anticipated Bottom Hole Temperature(F):** 165

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

H2S\_Plan\_20190528151244.pdf

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

## Section 8 - Other Information

### **Proposed horizontal/directional/multi-lateral plan submission:**

Hol122\_DR\_20190528151300.pdf

Hol122\_LLR\_20190528151300.pdf

5M\_Annular\_Preventer\_Variance\_and\_Well\_Control\_Plan\_20190528151318.pdf

Pressure\_Control\_Plan\_Single\_Well\_MB4\_3String\_Big\_Hole\_BLM\_20190528151319.pdf

### **Other proposed operations facets description:**

4-STRING CONTINGENCY PLAN ATTACHED

### **Other proposed operations facets attachment:**

CAPITAN\_PROTECTION\_CONTINGENCY\_PLAN\_20190528151330.pdf

### **Other Variance attachment:**

R616\_\_\_CoC\_for\_hoses\_12\_18\_17\_20190528151354.pdf

Requested\_Exceptions\_\_\_3\_String\_Revised\_01312019\_20190528151354.pdf





# 5M Annular Preventer Variance Request and Well Control Procedures

Note: A copy of the Well Control Plan must be available at multiple locations on the rig for review by rig personnel, as well as review by the BLM PET/PE, and a copy must be maintained on the rig floor.

## Dual Isolation Design for 5M Annular Exception

Ameredev will utilize 13-5/8” 10M (5M Annular) BOPE System consisting of:

- 13-5/8” 5M Annular
- 13-5/8” 10M Upper Pipe Rams
  - 3-1/2” – 5-1/2” Variable Bore Ram
- 13-5/8” 10M Blind Rams
- 13-5/8” 10M Drilling Spool /w 2 - 4” 10M Outlets Double 10M Isolation Valves
- 13-5/8” 10M Lower Blind Rams
  - 3-1/2” – 5-1/2” Variable Bore Ram

All drilling components and casing associated to exposure > 5000 psi BHP requiring a 10M system will have a double isolation (secondary barrier) below the 5M Annular that would provide a barrier to flow. The mud system will always be primary barrier, it will be maintained by adjusting values based on tourly mud tests and monitoring a PVT System to maintain static wellbore conditions, displacement procedures will be followed and recorded on daily drilling reports during tripping operations. Surge and swab pressure values will be calculated and maintained and static flow check will be monitored at previous casing shoe and verified static well conditions prior to tripping out of hole and again prior to pulling last joint of drill pipe through BOPE. The below table, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Drill Components	Size	Primary Barrier	Secondary Barrier	Third Barrier
Drillpipe	3-1/2”-5-1/2”	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
HWDP Drillpipe	3-1/2”-5-1/2”	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Drill Collars	3-1/2”-5-1/2”	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Production Casing	3-1/2”-5-1/2”	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Open Hole	13-5/8	Drilling Fluid	Blind Rams	
All Drilling Components in 10M Environment will have OD that will allow full Operational RATED WORKING PRESSURE for system design. Kill line with minimum 2” ID will be available outside substructure with 10M Check Valve for OOH Kill Operations				

# Well Control Procedures

Proper well control procedures are dependent to differentiating well conditions, to cover the basic well control operations there are will be standard drilling ahead, tripping pipe, tripping BHA, running casing, and pipe out of the hole/open hole scenarios that will be defined by procedures below. Initial Shut In Pressure can be taken against the Uppermost BOPE component the 5M Annular, pressure control can be transferred from the lesser 5M Annular to the 10M Upper Pipe Rams if needed. Shut In Pressures may be equal to or less than the Rated Working Pressure but at no time will the pressure on the annular preventer exceed the Rated Working Pressure of the annular. The annular will be tested to 5,000 psi. This will be the Rated Working Pressure of the annular preventer. All scenarios will be written such as shut in will be performed by closing the 10,000 psi Upper Pipe Rams for faster Accumulator pressure recovery to allow safer reaction to controlling wellbore pressure.

## Shutting In While Drilling

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut down pumps
4. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves  
Open to working pressure gauge
5. Install open, full open safety valve and close valve, Close Chokes
6. Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

## Shutting In While Tripping

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves  
Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

### **Shutting In While Running Casing**

1. Sound alarm signaling well control event to Rig Crew
2. Space out casing to allow circulating swedge installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves  
Open to working pressure gauge
4. Install circulating swedge, Close high pressure, low torque valves, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold Pre-job safety meeting and discuss kill procedure

### **Shutting in while out of hole**

1. Sound alarm signaling well control event to Rig Crew
2. Shut-in well: close blind rams and open HCR against Open Chokes and Valves  
Open to working pressure gauge
3. Close Chokes, Verify well is shut-in and monitor pressures
4. Notify supervisory personnel
5. Record data (SIDP, SICP, Pit Gain, and Time)
6. Hold Pre-job safety meeting and discuss kill procedure

### **Shutting in prior to pulling BHA through stack**

Prior to pulling last joint of drill pipe thru the stack space out and check flow  
If flowing see steps below.

1. Sound alarm signaling well control event to Rig Crew
2. Shut in upper pipe ram and open HCR against Open Chokes and Valves Open  
to working pressure gauge
3. Install open, full open safety valve and close valve, Close Chokes
4. Verify well is shut-in and flow has stopped
5. Notify supervisory personnel
6. Record data (SIDP, SICP, Pit Gain, and Time)
7. Hold pre-job safety meeting and discuss kill procedure

**Shutting in while BHA is in the stack and ram preventer and combo immediately available**

1. Sound alarm signaling well control event to Rig Crew
2. Space out BHA with upset just beneath the compatible pipe ram
3. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

\*FOSV will be on rig floor in open position with operating handle for each type of connection utilized and tested to 10,000 psi

**Shutting in while BHA is in the stack and no ram preventer or combo immediately available**

1. Sound alarm signaling well control event to Rig Crew
2. If possible pick up high enough, to pull string clear and follow "Open Hole" scenario

If not possible to pick up high enough:

3. Stab Crossover, make up one joint/stand of drill pipe, and install open, full open safety valve (Leave Open)
4. Space out drill string with upset just beneath the compatible pipe ram.
5. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
6. Close FOSV, Close Chokes, Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

13 5/8" 5M BOP  
Configuration

CO-FLEX LINE TO  
CHOKE MANIFOLD

2" KILL LINE

4" 10M VALVES &

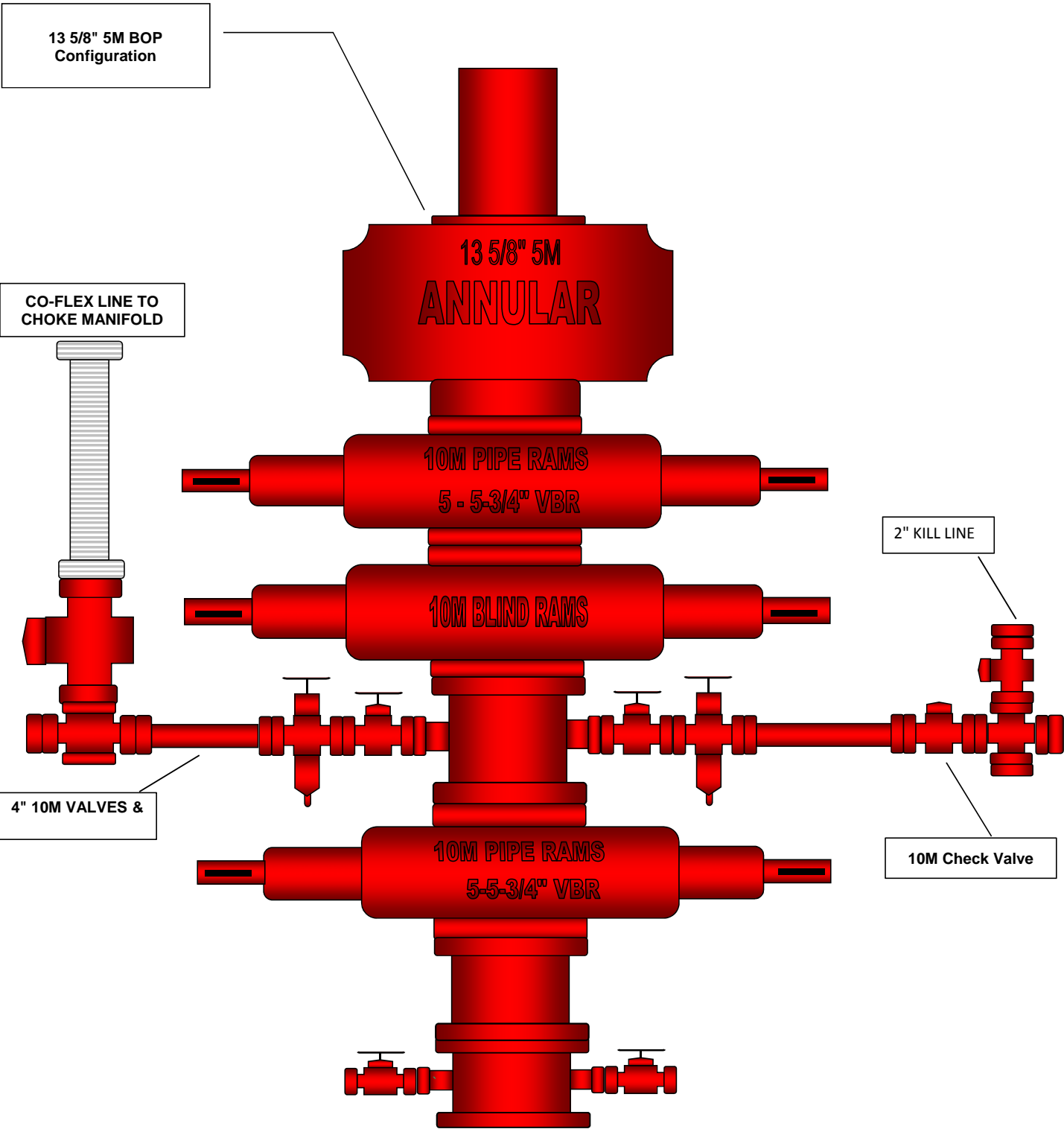
10M Check Valve

13 5/8" 5M  
ANNULAR

10M PIPE RAMS  
5 - 5-3/4" VBR

10M BLIND RAMS

10M PIPE RAMS  
5-5-3/4" VBR





## Pressure Control Plan

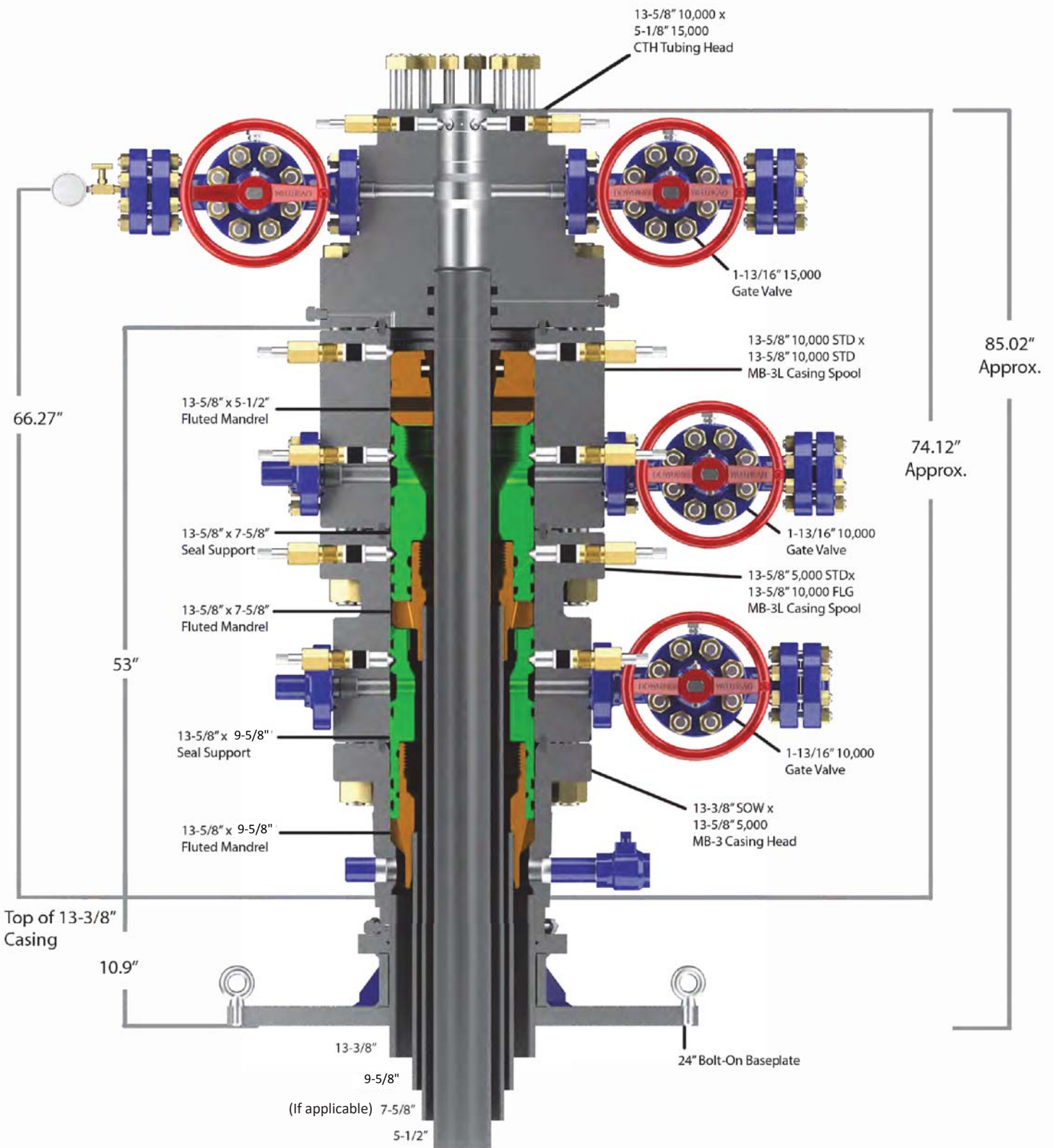
### Pressure Control Equipment

- Following setting of 13-3/8" Surface Casing Ameredev will install 13-5/8 MB4 Multi Bowl Casing Head by welding on a 13-5/8 SOW x 13-5/8" 5M in combination with 13-5/8 5M x 13-5/8 10M B-Sec to Land Intm #1 and a 13-5/8 10M x 13-5/8 10M shouldered to land C-Sec to Land Intm #2 (Installation procedure witnessed and verified by a manufacturer's representative).
- Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Ameredev will install a 5M System Blowout Preventer (BOPE) with a 5M Annular Preventer and related equipment (BOPE). Full testing will be performed utilizing a full isolation test plug and limited to 5,000 psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500 psi). Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Setting of 9-5/8" Intermediate will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Full testing will be performed utilizing a full isolation test plug to 10,000 psi MOP of MB4 Multi Bowl B-Section. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 100% of approved working pressure (5,000 psi).
- Before drilling >20ft of new formation under the 9-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.
- Following setting of 5-1/2" Production Casing and adequate WOC time Ameredev will break 10M System Blowout Preventer (BOP) from 10M DOL-2 Casing Head, install annulus casing slips and test same (Installation procedure witnessed and verified by a manufacturer's representative) and install 11" 10M x 5-1/8" 15M Tubing Head (Installation procedure witnessed and verified by a manufacturer's representative). Ameredev will test head to 70% casing design and install Dry Hole cap with needle valve and pressure gauge to monitor well awaiting completion.



## Pressure Control Plan

- Slow pump speeds will be taken daily by each crew and recorded on Daily Drilling Report after mudding up.
- A choke manifold and accumulator with floor and remote operating stations will be functional and in place after installation of BOPE, as well as full functioning mud gas separator.
- Weekly BOPE pit level drills will be conducted by each crew and recorded on Daily Drilling Report.
- BOP will be fully operated when out of hole and will be documented on the daily drilling log.
- All B.O.P.s and associated equipment will be tested in accordance with Onshore Order #2
- All B.O.P. testing will be done by an independent service company.
- The B.O.P. will be tested within 21 days of the original test if drilling takes more time than planned.
- Ameredev requests a variance to connect the B.O.P. choke outlet to the choke manifold using a co-flex hose with a 10,000 psi working pressure that has been tested to 15,000psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps. (certifications will be sent to Carlsbad BLM Office prior to install)
- Ameredev requests a variance to install a 5M Annular Preventer on the 10M System to drill the Production Hole below the 9-5/8" Intermediate Section. 5M Annular will be tested to 100% working pressure (5,000 psi). A full well control procedure will be included to isolate well bore.



## Quotation

## Downing Wellhead Equipment

Oklahoma City,  
Oklahoma - USA

Reference Data:

16925 AMEREDEV

### Proprietary and Confidential

The information contained in this drawing is the sole property of Downing Wellhead Equipment, any reproduction in part or in whole without the written permission of Downing Wellhead Equipment is prohibited.

TITLE:

AMEREDEV

DRAWN

CHECKED

APPROVED

SIZE

**A**

DWG. NO.

Scale:

Weight:

REV.

Sheet:





Ameradev II, LLC

## Wellbore Schematic

**Well:** Holly Fed Com 26-36-05 122H  
**SHL:** Sec. 05 26S-36E 230' FNL & 800' FWL  
**BHL:** Sec. 08 26S-36E 50' FSL & 1026' FWL  
 Lea, NM  
**Wellhead:** A - 13-5/8" 10M x 13-5/8" SOW  
 B - 13-5/8" 10M x 13-5/8" 10M  
 C - 13-5/8" 10M x 13-5/8" 10M  
 Tubing Spool - 5-1/8" 15M x 13-3/8" 10M  
**Xmas Tree:** 2-9/16" 10M  
**Tubing:** 2-7/8" L-80 6.5# 8rd EUE

**Co. Well ID:** xxxxx  
**AFE No.:** xxxx-xxx  
**API No.:** xxxxxxxxxxxx  
**GL:** 3,004'  
**Field:** Delaware  
**Objective:** Wolfcamp B  
**TVD:** 12,159'  
**MD:** 22,935'  
**Rig:** TBD **KB:** 27'  
**E-Mail:** [Wellsite2@ameradev.com](mailto:Wellsite2@ameradev.com)

Hole Size	Formation Tops	Logs Cement	Mud Weight
17.5"	Rustler 1,138'	795 Sacks TOC 0'	8.4-8.6 ppg WBM
	<b>13.375" 68# J-55 BTC 1,263'</b>		
12.25"	Salado 1,589'	903 Sacks TOC 0'	8.5 - 9.4 ppg Diesel Brine Emulsion
	Tansill 3,405'		
	Capitan Reef 3,860'		
	Lamar 5,071'		
	<b>DV Tool 5,121'</b>		
	Bell Canyon 5,191'		
	Brushy Canyon 7,172'		
	Bone Spring Lime 8,222'		
	First Bone Spring 9,598'		
	Second Bone Spring 10,114'	1,723 Sacks TOC 0'	
	Third Bone Spring Upper 10,669'	50% Excess	
	<b>9.625" 40# L-80HC BTC 10,794'</b>		
8.5"	Third Bone Spring 11,272'		
	Wolfcamp A 11,542'		
	Wolfcamp B 11,859'		
<b>12° Build @ 11,539' MD thru 12,522' MD</b>	<b>5.5" 20# P-110CYHP BTC 22,935'</b>	4,897 Sacks TOC 0'	10.5 - 12.5 ppg OBM
	<b>Target Wolfcamp B 12159 TVD // 22935 MD</b>	25% Excess	



## H<sub>2</sub>S Drilling Operation Plan

1. **All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:**
  - a. Characteristics of H<sub>2</sub>S
  - b. Physical effects and hazards
  - c. Principal and operation of H<sub>2</sub>S detectors, warning system and briefing areas
  - d. Evacuation procedure, routes and first aid
  - e. Proper use of safety equipment and life support systems
  - f. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.
2. **Briefing Area:**
  - a. Two perpendicular areas will be designated by signs and readily accessible.
  - b. Upon location entry there will be a designated area to establish all safety compliance criteria (1.) has been met.
3. **H<sub>2</sub>S Detection and Alarm Systems:**
  - a. H<sub>2</sub>S sensors/detectors shall be located on the drilling rig floor, in the base of the sub structure/cellar area, and on the mud pits in the shale shaker area. Additional H<sub>2</sub>S detectors may be placed as deemed necessary. All detectors will be set to initiate visual alarm at 10 ppm and visual with audible at 14 ppm and all equipment will be calibrated every 30 days or as needed.
  - b. An audio alarm will be installed on the derrick floor and in the top doghouse.
4. **Protective Equipment for Essential Personnel:**
  - a. **Breathing Apparatus:**
    - i. Rescue Packs (SCBA) - 1 Unit shall be placed at each briefing area.
    - ii. Two (SCBA) Units will be stored in safety trailer on location.
    - iii. Work/Escapes packs - 1 Unit will be available on rig floor in doghouse for emergency evacuation for driller.
  - b. **Auxiliary Rescue Equipment:**
    - i. Stretcher
    - ii. 2 - OSHA full body harnesses
    - iii. 100 ft. 5/8" OSHA approved rope
    - iv. 1 - 20# class ABC fire extinguisher
5. **Windsock and/or Wind Streamers:**
  - a. Windsock at mud pit area should be high enough to be visible.
  - b. Windsock on the rig floor should be high enough to be visible.
6. **Communication:**
  - a. While working under mask scripting boards will be used for communication where applicable.
  - b. Hand signals will be used when script boards are not applicable.



## H<sub>2</sub>S Drilling Operation Plan

- c. Two way radios will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at Drilling Foreman's Office.

7. **Drill Stem Testing:** - No Planned DST at this time.

8. **Mud program:**

- a. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

9. **Metallurgy:**

- a. All drill strings, casing, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- b. Drilling Contractor supervisor will be required to be familiar with the effect H<sub>2</sub>S has on tubular goods and other mechanical equipment provided through contractor.



## H<sub>2</sub>S Contingency Plan

### **Emergency Procedures**

In the event of a release of H<sub>2</sub>S, the first responder(s) must:

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the “buddy system” to ensure no injuries occur during the response.
- Take precautions to avoid personal injury during this operation.
- Contact Operator and/or local officials the aid in operation. See list of phone numbers attached.
- Have received training in the:
  - Detection of H<sub>2</sub>S and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air=1	2 ppm	N/A	1000 ppm

### **Contacting Authorities**

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



## H<sub>2</sub>S Contingency Plan

<b>Ameredev Operating LLC – Emergency Phone 737-300-4799</b>			
Key Personnel:			
Name	Title	Office	Mobile
Floyd Hammond	Chief Operating officer	737-300-4724	512-783-6810
Zachary Boyd	Operations Superintendent	737-300-4725	432-385-6996
Blake Estrada	Construction Foreman		432-385-5831

<b><u>Artesia</u></b>			
Ambulance			911
State Police			575-746-2703
City Police			575-746-2703
Sheriff's Office			575-746-9888
Fire Department			575-746-2701
Local Emergency Planning Committee			575-746-2122
New Mexico Oil Conservation Division			575-748-1283
<b><u>Carlsbad</u></b>			
Ambulance			911
State Police			575-885-3137
City Police			575-885-2111
Sheriff's Office			575-887-7551
Fire Department			575-887-3798
Local Emergency Planning Committee			575-887-6544
US Bureau of Land Management			575-887-6544
<b><u>Santa Fe</u></b>			
New Mexico Emergency Response Commission (Santa Fe)			505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs			505-827-9126
New Mexico State Emergency Operations Center			505-476-9635
<b><u>National</u></b>			
National Emergency Response Center (Washington, D.C.)			800-424-8802
<b><u>Medical</u></b>			
Flight for Life - 4000 24th St.; Lubbock, TX			806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX			806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM			505-842-4433
.'SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM			505-842-4949



# **Ameredev Operating, LLC.**

**RB/HOL**

**RB/HOL #2S**

**Holly 122H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**22 February, 2019**



Ameredev Operating, LLC  
Planning Report

Database:	EDM5000	Local Co-ordinate Reference:	Well Holly 122H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3031.0usft
Project:	RB/HOL	MD Reference:	KB @ 3031.0usft
Site:	RB/HOL #2S	North Reference:	Grid
Well:	Holly 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	RB/HOL		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		RB/HOL #2S				
Site Position:		Northing:	394,010.44 usft	Latitude:	32° 4' 44.208 N	
From:	Lat/Long	Easting:	863,431.24 usft	Longitude:	103° 17' 36.291 W	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Holly 122H					
Well Position	+N/-S	1.0 usft	Northing:	394,011.40 usft	Latitude:	32° 4' 44.208 N
	+E/-W	100.0 usft	Easting:	863,531.26 usft	Longitude:	103° 17' 35.129 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	3,004.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/12/2018	6.65	59.95	47,730.97081233

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	178.12

Plan Survey Tool Program		Date	2/22/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	22,935.0	Design #1 (Wellbore #1)	MWD	
			OWSG MWD - Standard		



# Ameredev Operating, LLC

## Planning Report

<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,300.0	6.00	38.00	2,299.5	12.4	9.7	2.00	2.00	0.00	38.00	
6,724.8	6.00	38.00	6,700.0	376.8	294.4	0.00	0.00	0.00	0.00	
7,024.8	0.00	0.00	6,999.5	389.2	304.1	2.00	-2.00	0.00	180.00	
8,525.3	0.00	0.00	8,500.0	389.2	304.1	0.00	0.00	0.00	0.00	
8,825.3	6.00	38.00	8,799.5	401.6	313.7	2.00	2.00	0.00	38.00	
11,138.6	6.00	38.00	11,100.0	592.1	462.6	0.00	0.00	0.00	0.00	
11,438.6	0.00	0.00	11,399.5	604.5	472.3	2.00	-2.00	0.00	180.00	
11,539.1	0.00	0.00	11,500.0	604.5	472.3	0.00	0.00	0.00	0.00	
11,744.9	24.74	277.55	11,699.5	610.2	428.9	12.02	12.02	0.00	277.55	
12,522.1	90.00	179.38	12,159.0	132.1	224.5	12.02	8.40	-12.63	-97.43	Hol122 FTP
22,935.0	90.00	179.38	12,159.0	-10,280.2	338.1	0.00	0.00	0.00	0.00	Hol122 BHL



<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	38.00	2,100.0	1.4	1.1	-1.3	2.00	2.00	0.00
2,200.0	4.00	38.00	2,199.8	5.5	4.3	-5.4	2.00	2.00	0.00
2,300.0	6.00	38.00	2,299.5	12.4	9.7	-12.0	2.00	2.00	0.00
2,400.0	6.00	38.00	2,398.9	20.6	16.1	-20.1	0.00	0.00	0.00
2,500.0	6.00	38.00	2,498.4	28.8	22.5	-28.1	0.00	0.00	0.00
2,600.0	6.00	38.00	2,597.8	37.1	29.0	-36.1	0.00	0.00	0.00
2,700.0	6.00	38.00	2,697.3	45.3	35.4	-44.1	0.00	0.00	0.00
2,800.0	6.00	38.00	2,796.7	53.6	41.8	-52.1	0.00	0.00	0.00
2,900.0	6.00	38.00	2,896.2	61.8	48.3	-60.2	0.00	0.00	0.00
3,000.0	6.00	38.00	2,995.6	70.0	54.7	-68.2	0.00	0.00	0.00
3,100.0	6.00	38.00	3,095.1	78.3	61.1	-76.2	0.00	0.00	0.00
3,200.0	6.00	38.00	3,194.5	86.5	67.6	-84.2	0.00	0.00	0.00
3,300.0	6.00	38.00	3,294.0	94.7	74.0	-92.3	0.00	0.00	0.00
3,400.0	6.00	38.00	3,393.4	103.0	80.5	-100.3	0.00	0.00	0.00
3,500.0	6.00	38.00	3,492.9	111.2	86.9	-108.3	0.00	0.00	0.00
3,600.0	6.00	38.00	3,592.3	119.4	93.3	-116.3	0.00	0.00	0.00
3,700.0	6.00	38.00	3,691.8	127.7	99.8	-124.3	0.00	0.00	0.00
3,800.0	6.00	38.00	3,791.2	135.9	106.2	-132.4	0.00	0.00	0.00
3,900.0	6.00	38.00	3,890.7	144.2	112.6	-140.4	0.00	0.00	0.00
4,000.0	6.00	38.00	3,990.1	152.4	119.1	-148.4	0.00	0.00	0.00
4,100.0	6.00	38.00	4,089.6	160.6	125.5	-156.4	0.00	0.00	0.00
4,200.0	6.00	38.00	4,189.0	168.9	131.9	-164.4	0.00	0.00	0.00
4,300.0	6.00	38.00	4,288.5	177.1	138.4	-172.5	0.00	0.00	0.00
4,400.0	6.00	38.00	4,387.9	185.3	144.8	-180.5	0.00	0.00	0.00
4,500.0	6.00	38.00	4,487.4	193.6	151.2	-188.5	0.00	0.00	0.00
4,600.0	6.00	38.00	4,586.9	201.8	157.7	-196.5	0.00	0.00	0.00
4,700.0	6.00	38.00	4,686.3	210.1	164.1	-204.5	0.00	0.00	0.00
4,800.0	6.00	38.00	4,785.8	218.3	170.5	-212.6	0.00	0.00	0.00
4,900.0	6.00	38.00	4,885.2	226.5	177.0	-220.6	0.00	0.00	0.00
5,000.0	6.00	38.00	4,984.7	234.8	183.4	-228.6	0.00	0.00	0.00
5,100.0	6.00	38.00	5,084.1	243.0	189.9	-236.6	0.00	0.00	0.00
5,200.0	6.00	38.00	5,183.6	251.2	196.3	-244.7	0.00	0.00	0.00
5,300.0	6.00	38.00	5,283.0	259.5	202.7	-252.7	0.00	0.00	0.00

<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	6.00	38.00	5,382.5	267.7	209.2	-260.7	0.00	0.00	0.00
5,500.0	6.00	38.00	5,481.9	275.9	215.6	-268.7	0.00	0.00	0.00
5,600.0	6.00	38.00	5,581.4	284.2	222.0	-276.7	0.00	0.00	0.00
5,700.0	6.00	38.00	5,680.8	292.4	228.5	-284.8	0.00	0.00	0.00
5,800.0	6.00	38.00	5,780.3	300.7	234.9	-292.8	0.00	0.00	0.00
5,900.0	6.00	38.00	5,879.7	308.9	241.3	-300.8	0.00	0.00	0.00
6,000.0	6.00	38.00	5,979.2	317.1	247.8	-308.8	0.00	0.00	0.00
6,100.0	6.00	38.00	6,078.6	325.4	254.2	-316.8	0.00	0.00	0.00
6,200.0	6.00	38.00	6,178.1	333.6	260.6	-324.9	0.00	0.00	0.00
6,300.0	6.00	38.00	6,277.5	341.8	267.1	-332.9	0.00	0.00	0.00
6,400.0	6.00	38.00	6,377.0	350.1	273.5	-340.9	0.00	0.00	0.00
6,500.0	6.00	38.00	6,476.4	358.3	279.9	-348.9	0.00	0.00	0.00
6,600.0	6.00	38.00	6,575.9	366.6	286.4	-356.9	0.00	0.00	0.00
6,700.0	6.00	38.00	6,675.3	374.8	292.8	-365.0	0.00	0.00	0.00
6,724.8	6.00	38.00	6,700.0	376.8	294.4	-367.0	0.00	0.00	0.00
6,800.0	4.50	38.00	6,774.9	382.3	298.7	-372.2	2.00	-2.00	0.00
6,900.0	2.50	38.00	6,874.7	387.1	302.4	-376.9	2.00	-2.00	0.00
7,000.0	0.50	38.00	6,974.7	389.1	304.0	-378.9	2.00	-2.00	0.00
7,024.8	0.00	0.00	6,999.5	389.2	304.1	-379.0	2.00	-2.00	0.00
7,100.0	0.00	0.00	7,074.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,174.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,274.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,374.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,474.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,574.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,674.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,774.7	389.2	304.1	-379.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,874.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,974.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,074.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,174.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,274.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,374.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,474.7	389.2	304.1	-379.0	0.00	0.00	0.00
8,525.3	0.00	0.00	8,500.0	389.2	304.1	-379.0	0.00	0.00	0.00
8,600.0	1.49	38.00	8,574.7	390.0	304.7	-379.7	2.00	2.00	0.00
8,700.0	3.49	38.00	8,674.6	393.4	307.4	-383.1	2.00	2.00	0.00
8,800.0	5.49	38.00	8,774.2	399.6	312.2	-389.1	2.00	2.00	0.00
8,825.3	6.00	38.00	8,799.5	401.6	313.7	-391.0	2.00	2.00	0.00
8,900.0	6.00	38.00	8,873.7	407.7	318.5	-397.0	0.00	0.00	0.00
9,000.0	6.00	38.00	8,973.2	416.0	325.0	-405.0	0.00	0.00	0.00
9,100.0	6.00	38.00	9,072.6	424.2	331.4	-413.1	0.00	0.00	0.00
9,200.0	6.00	38.00	9,172.1	432.4	337.9	-421.1	0.00	0.00	0.00
9,300.0	6.00	38.00	9,271.5	440.7	344.3	-429.1	0.00	0.00	0.00
9,400.0	6.00	38.00	9,371.0	448.9	350.7	-437.1	0.00	0.00	0.00
9,500.0	6.00	38.00	9,470.4	457.1	357.2	-445.2	0.00	0.00	0.00
9,600.0	6.00	38.00	9,569.9	465.4	363.6	-453.2	0.00	0.00	0.00
9,700.0	6.00	38.00	9,669.3	473.6	370.0	-461.2	0.00	0.00	0.00
9,800.0	6.00	38.00	9,768.8	481.9	376.5	-469.2	0.00	0.00	0.00
9,900.0	6.00	38.00	9,868.2	490.1	382.9	-477.2	0.00	0.00	0.00
10,000.0	6.00	38.00	9,967.7	498.3	389.3	-485.3	0.00	0.00	0.00
10,100.0	6.00	38.00	10,067.1	506.6	395.8	-493.3	0.00	0.00	0.00
10,200.0	6.00	38.00	10,166.6	514.8	402.2	-501.3	0.00	0.00	0.00
10,300.0	6.00	38.00	10,266.0	523.0	408.6	-509.3	0.00	0.00	0.00

<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.0	6.00	38.00	10,365.5	531.3	415.1	-517.3	0.00	0.00	0.00
10,500.0	6.00	38.00	10,464.9	539.5	421.5	-525.4	0.00	0.00	0.00
10,600.0	6.00	38.00	10,564.4	547.7	427.9	-533.4	0.00	0.00	0.00
10,700.0	6.00	38.00	10,663.8	556.0	434.4	-541.4	0.00	0.00	0.00
10,800.0	6.00	38.00	10,763.3	564.2	440.8	-549.4	0.00	0.00	0.00
10,900.0	6.00	38.00	10,862.8	572.5	447.3	-557.4	0.00	0.00	0.00
11,000.0	6.00	38.00	10,962.2	580.7	453.7	-565.5	0.00	0.00	0.00
11,100.0	6.00	38.00	11,061.7	588.9	460.1	-573.5	0.00	0.00	0.00
11,138.6	6.00	38.00	11,100.0	592.1	462.6	-576.6	0.00	0.00	0.00
11,200.0	4.77	38.00	11,161.2	596.7	466.2	-581.0	2.00	-2.00	0.00
11,300.0	2.77	38.00	11,261.0	601.8	470.2	-586.1	2.00	-2.00	0.00
11,400.0	0.77	38.00	11,360.9	604.3	472.1	-588.4	2.00	-2.00	0.00
11,438.6	0.00	0.00	11,399.5	604.5	472.3	-588.6	2.00	-2.00	0.00
11,500.0	0.00	0.00	11,460.9	604.5	472.3	-588.6	0.00	0.00	0.00
11,539.1	0.00	0.00	11,500.0	604.5	472.3	-588.6	0.00	0.00	0.00
<b>Hol122 KOP</b>									
11,600.0	7.32	277.55	11,560.7	605.0	468.4	-589.3	12.02	12.02	0.00
11,700.0	19.34	277.55	11,657.9	608.0	445.6	-593.0	12.02	12.02	0.00
11,744.9	24.74	277.55	11,699.5	610.2	428.9	-595.8	12.02	12.02	0.00
11,800.0	24.71	261.68	11,749.6	610.1	406.1	-596.4	12.02	-0.05	-28.81
11,900.0	28.61	236.11	11,839.2	593.6	365.3	-581.3	12.02	3.90	-25.57
12,000.0	36.01	218.24	11,923.9	557.1	327.1	-546.0	12.02	7.40	-17.87
12,100.0	45.22	206.29	11,999.8	501.9	293.1	-492.0	12.02	9.21	-11.95
12,200.0	55.32	197.77	12,063.7	430.7	264.7	-421.8	12.02	10.10	-8.51
12,300.0	65.88	191.16	12,112.8	346.5	243.3	-338.3	12.02	10.56	-6.61
12,400.0	76.67	185.58	12,144.9	252.9	229.7	-245.3	12.02	10.80	-5.58
12,500.0	87.59	180.48	12,158.5	154.2	224.5	-146.7	12.02	10.91	-5.10
12,522.1	90.00	179.38	12,159.0	132.1	224.5	-124.7	12.02	10.94	-4.99
<b>Hol122 FTP</b>									
12,600.0	90.00	179.38	12,159.0	54.2	225.4	-46.8	0.00	0.00	0.00
12,700.0	90.00	179.38	12,159.0	-45.8	226.5	53.2	0.00	0.00	0.00
12,800.0	90.00	179.38	12,159.0	-145.8	227.6	153.2	0.00	0.00	0.00
12,900.0	90.00	179.38	12,159.0	-245.8	228.6	253.2	0.00	0.00	0.00
13,000.0	90.00	179.38	12,159.0	-345.8	229.7	353.1	0.00	0.00	0.00
13,100.0	90.00	179.38	12,159.0	-445.8	230.8	453.1	0.00	0.00	0.00
13,200.0	90.00	179.38	12,159.0	-545.7	231.9	553.1	0.00	0.00	0.00
13,300.0	90.00	179.38	12,159.0	-645.7	233.0	653.1	0.00	0.00	0.00
13,400.0	90.00	179.38	12,159.0	-745.7	234.1	753.0	0.00	0.00	0.00
13,500.0	90.00	179.38	12,159.0	-845.7	235.2	853.0	0.00	0.00	0.00
13,600.0	90.00	179.38	12,159.0	-945.7	236.3	953.0	0.00	0.00	0.00
13,700.0	90.00	179.38	12,159.0	-1,045.7	237.4	1,053.0	0.00	0.00	0.00
13,800.0	90.00	179.38	12,159.0	-1,145.7	238.5	1,152.9	0.00	0.00	0.00
13,900.0	90.00	179.38	12,159.0	-1,245.7	239.5	1,252.9	0.00	0.00	0.00
14,000.0	90.00	179.38	12,159.0	-1,345.7	240.6	1,352.9	0.00	0.00	0.00
14,100.0	90.00	179.38	12,159.0	-1,445.7	241.7	1,452.9	0.00	0.00	0.00
14,200.0	90.00	179.38	12,159.0	-1,545.7	242.8	1,552.8	0.00	0.00	0.00
14,300.0	90.00	179.38	12,159.0	-1,645.7	243.9	1,652.8	0.00	0.00	0.00
14,400.0	90.00	179.38	12,159.0	-1,745.7	245.0	1,752.8	0.00	0.00	0.00
14,500.0	90.00	179.38	12,159.0	-1,845.7	246.1	1,852.8	0.00	0.00	0.00
14,600.0	90.00	179.38	12,159.0	-1,945.7	247.2	1,952.7	0.00	0.00	0.00
14,700.0	90.00	179.38	12,159.0	-2,045.7	248.3	2,052.7	0.00	0.00	0.00
14,800.0	90.00	179.38	12,159.0	-2,145.7	249.4	2,152.7	0.00	0.00	0.00
14,900.0	90.00	179.38	12,159.0	-2,245.6	250.5	2,252.7	0.00	0.00	0.00
15,000.0	90.00	179.38	12,159.0	-2,345.6	251.5	2,352.6	0.00	0.00	0.00

<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,100.0	90.00	179.38	12,159.0	-2,445.6	252.6	2,452.6	0.00	0.00	0.00
15,200.0	90.00	179.38	12,159.0	-2,545.6	253.7	2,552.6	0.00	0.00	0.00
15,300.0	90.00	179.38	12,159.0	-2,645.6	254.8	2,652.6	0.00	0.00	0.00
15,400.0	90.00	179.38	12,159.0	-2,745.6	255.9	2,752.5	0.00	0.00	0.00
15,500.0	90.00	179.38	12,159.0	-2,845.6	257.0	2,852.5	0.00	0.00	0.00
15,600.0	90.00	179.38	12,159.0	-2,945.6	258.1	2,952.5	0.00	0.00	0.00
15,700.0	90.00	179.38	12,159.0	-3,045.6	259.2	3,052.5	0.00	0.00	0.00
15,800.0	90.00	179.38	12,159.0	-3,145.6	260.3	3,152.5	0.00	0.00	0.00
15,900.0	90.00	179.38	12,159.0	-3,245.6	261.4	3,252.4	0.00	0.00	0.00
16,000.0	90.00	179.38	12,159.0	-3,345.6	262.5	3,352.4	0.00	0.00	0.00
16,100.0	90.00	179.38	12,159.0	-3,445.6	263.5	3,452.4	0.00	0.00	0.00
16,200.0	90.00	179.38	12,159.0	-3,545.6	264.6	3,552.4	0.00	0.00	0.00
16,300.0	90.00	179.38	12,159.0	-3,645.6	265.7	3,652.3	0.00	0.00	0.00
16,400.0	90.00	179.38	12,159.0	-3,745.6	266.8	3,752.3	0.00	0.00	0.00
16,500.0	90.00	179.38	12,159.0	-3,845.6	267.9	3,852.3	0.00	0.00	0.00
16,600.0	90.00	179.38	12,159.0	-3,945.5	269.0	3,952.3	0.00	0.00	0.00
16,700.0	90.00	179.38	12,159.0	-4,045.5	270.1	4,052.2	0.00	0.00	0.00
16,800.0	90.00	179.38	12,159.0	-4,145.5	271.2	4,152.2	0.00	0.00	0.00
16,900.0	90.00	179.38	12,159.0	-4,245.5	272.3	4,252.2	0.00	0.00	0.00
17,000.0	90.00	179.38	12,159.0	-4,345.5	273.4	4,352.2	0.00	0.00	0.00
17,100.0	90.00	179.38	12,159.0	-4,445.5	274.5	4,452.1	0.00	0.00	0.00
17,200.0	90.00	179.38	12,159.0	-4,545.5	275.5	4,552.1	0.00	0.00	0.00
17,300.0	90.00	179.38	12,159.0	-4,645.5	276.6	4,652.1	0.00	0.00	0.00
17,400.0	90.00	179.38	12,159.0	-4,745.5	277.7	4,752.1	0.00	0.00	0.00
17,500.0	90.00	179.38	12,159.0	-4,845.5	278.8	4,852.0	0.00	0.00	0.00
17,600.0	90.00	179.38	12,159.0	-4,945.5	279.9	4,952.0	0.00	0.00	0.00
17,700.0	90.00	179.38	12,159.0	-5,045.5	281.0	5,052.0	0.00	0.00	0.00
17,705.0	90.00	179.38	12,159.0	-5,050.5	281.1	5,057.0	0.00	0.00	0.00
Hol122 into NMNM137473									
17,800.0	90.00	179.38	12,159.0	-5,145.5	282.1	5,152.0	0.00	0.00	0.00
17,900.0	90.00	179.38	12,159.0	-5,245.5	283.2	5,251.9	0.00	0.00	0.00
18,000.0	90.00	179.38	12,159.0	-5,345.5	284.3	5,351.9	0.00	0.00	0.00
18,100.0	90.00	179.38	12,159.0	-5,445.5	285.4	5,451.9	0.00	0.00	0.00
18,200.0	90.00	179.38	12,159.0	-5,545.5	286.5	5,551.9	0.00	0.00	0.00
18,300.0	90.00	179.38	12,159.0	-5,645.4	287.5	5,651.8	0.00	0.00	0.00
18,400.0	90.00	179.38	12,159.0	-5,745.4	288.6	5,751.8	0.00	0.00	0.00
18,500.0	90.00	179.38	12,159.0	-5,845.4	289.7	5,851.8	0.00	0.00	0.00
18,600.0	90.00	179.38	12,159.0	-5,945.4	290.8	5,951.8	0.00	0.00	0.00
18,700.0	90.00	179.38	12,159.0	-6,045.4	291.9	6,051.8	0.00	0.00	0.00
18,800.0	90.00	179.38	12,159.0	-6,145.4	293.0	6,151.7	0.00	0.00	0.00
18,900.0	90.00	179.38	12,159.0	-6,245.4	294.1	6,251.7	0.00	0.00	0.00
19,000.0	90.00	179.38	12,159.0	-6,345.4	295.2	6,351.7	0.00	0.00	0.00
19,100.0	90.00	179.38	12,159.0	-6,445.4	296.3	6,451.7	0.00	0.00	0.00
19,200.0	90.00	179.38	12,159.0	-6,545.4	297.4	6,551.6	0.00	0.00	0.00
19,300.0	90.00	179.38	12,159.0	-6,645.4	298.4	6,651.6	0.00	0.00	0.00
19,400.0	90.00	179.38	12,159.0	-6,745.4	299.5	6,751.6	0.00	0.00	0.00
19,500.0	90.00	179.38	12,159.0	-6,845.4	300.6	6,851.6	0.00	0.00	0.00
19,600.0	90.00	179.38	12,159.0	-6,945.4	301.7	6,951.5	0.00	0.00	0.00
19,700.0	90.00	179.38	12,159.0	-7,045.4	302.8	7,051.5	0.00	0.00	0.00
19,800.0	90.00	179.38	12,159.0	-7,145.4	303.9	7,151.5	0.00	0.00	0.00
19,900.0	90.00	179.38	12,159.0	-7,245.4	305.0	7,251.5	0.00	0.00	0.00
20,000.0	90.00	179.38	12,159.0	-7,345.3	306.1	7,351.4	0.00	0.00	0.00
20,100.0	90.00	179.38	12,159.0	-7,445.3	307.2	7,451.4	0.00	0.00	0.00

<b>Database:</b>	EDM5000	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Company:</b>	Ameredev Operating, LLC.	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Project:</b>	RB/HOL	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>North Reference:</b>	Grid
<b>Well:</b>	Holly 122H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
20,200.0	90.00	179.38	12,159.0	-7,545.3	308.3	7,551.4	0.00	0.00	0.00	
20,300.0	90.00	179.38	12,159.0	-7,645.3	309.4	7,651.4	0.00	0.00	0.00	
20,400.0	90.00	179.38	12,159.0	-7,745.3	310.4	7,751.3	0.00	0.00	0.00	
20,500.0	90.00	179.38	12,159.0	-7,845.3	311.5	7,851.3	0.00	0.00	0.00	
20,600.0	90.00	179.38	12,159.0	-7,945.3	312.6	7,951.3	0.00	0.00	0.00	
20,700.0	90.00	179.38	12,159.0	-8,045.3	313.7	8,051.3	0.00	0.00	0.00	
20,800.0	90.00	179.38	12,159.0	-8,145.3	314.8	8,151.2	0.00	0.00	0.00	
20,900.0	90.00	179.38	12,159.0	-8,245.3	315.9	8,251.2	0.00	0.00	0.00	
21,000.0	90.00	179.38	12,159.0	-8,345.3	317.0	8,351.2	0.00	0.00	0.00	
21,100.0	90.00	179.38	12,159.0	-8,445.3	318.1	8,451.2	0.00	0.00	0.00	
21,200.0	90.00	179.38	12,159.0	-8,545.3	319.2	8,551.1	0.00	0.00	0.00	
21,300.0	90.00	179.38	12,159.0	-8,645.3	320.3	8,651.1	0.00	0.00	0.00	
21,400.0	90.00	179.38	12,159.0	-8,745.3	321.4	8,751.1	0.00	0.00	0.00	
21,500.0	90.00	179.38	12,159.0	-8,845.3	322.4	8,851.1	0.00	0.00	0.00	
21,600.0	90.00	179.38	12,159.0	-8,945.2	323.5	8,951.1	0.00	0.00	0.00	
21,700.0	90.00	179.38	12,159.0	-9,045.2	324.6	9,051.0	0.00	0.00	0.00	
21,800.0	90.00	179.38	12,159.0	-9,145.2	325.7	9,151.0	0.00	0.00	0.00	
21,900.0	90.00	179.38	12,159.0	-9,245.2	326.8	9,251.0	0.00	0.00	0.00	
22,000.0	90.00	179.38	12,159.0	-9,345.2	327.9	9,351.0	0.00	0.00	0.00	
22,100.0	90.00	179.38	12,159.0	-9,445.2	329.0	9,450.9	0.00	0.00	0.00	
22,200.0	90.00	179.38	12,159.0	-9,545.2	330.1	9,550.9	0.00	0.00	0.00	
22,300.0	90.00	179.38	12,159.0	-9,645.2	331.2	9,650.9	0.00	0.00	0.00	
22,400.0	90.00	179.38	12,159.0	-9,745.2	332.3	9,750.9	0.00	0.00	0.00	
22,500.0	90.00	179.38	12,159.0	-9,845.2	333.4	9,850.8	0.00	0.00	0.00	
22,600.0	90.00	179.38	12,159.0	-9,945.2	334.4	9,950.8	0.00	0.00	0.00	
22,700.0	90.00	179.38	12,159.0	-10,045.2	335.5	10,050.8	0.00	0.00	0.00	
22,800.0	90.00	179.38	12,159.0	-10,145.2	336.6	10,150.8	0.00	0.00	0.00	
22,885.0	90.00	179.38	12,159.0	-10,230.2	337.6	10,235.8	0.00	0.00	0.00	
Hol122 LTP										
22,900.0	90.00	179.38	12,159.0	-10,245.2	337.7	10,250.7	0.00	0.00	0.00	
22,935.0	90.00	179.38	12,159.0	-10,280.2	338.1	10,285.8	0.00	0.00	0.00	
Hol122 BHL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
Hol122 KOP - plan hits target center - Point	0.00	0.01	11,500.0	604.5	472.3	394,615.87	864,003.52	32° 4' 50.144 N 103° 17' 29.573 W		
Hol122 FTP - plan hits target center - Point	0.00	0.00	12,159.0	132.1	224.5	394,143.53	863,755.77	32° 4' 45.494 N 103° 17' 32.505 W		
Hol122 BHL - plan hits target center - Point	0.00	0.00	12,159.0	-10,280.2	338.1	383,731.20	863,869.35	32° 3' 2.456 N 103° 17' 32.352 W		
Hol122 LTP - plan hits target center - Point	0.00	0.00	12,159.0	-10,230.2	337.6	383,781.19	863,868.81	32° 3' 2.951 N 103° 17' 32.353 W		



Ameredev Operating, LLC  
Planning Report

Database:	EDM5000	Local Co-ordinate Reference:	Well Holly 122H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3031.0usft
Project:	RB/HOL	MD Reference:	KB @ 3031.0usft
Site:	RB/HOL #2S	North Reference:	Grid
Well:	Holly 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,705.0	12,159.0	-5,050.5	281.1	Hol122 into NMNM137473



## **Ameredev Operating, LLC.**

**RB/HOL**

**RB/HOL #2S**

**Holly 122H**

**Wellbore #1**

**Plan: Design #1**

## **Lease Penetration Section Line Foot**

**22 February, 2019**



**Ameredev Operating, LLC**  
Lease Penetration Section Line Footages

<b>Company:</b>	Ameredev Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Project:</b>	RB/HOL	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Well:</b>	Holly 122H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM5000

<b>Project</b>	RB/HOL		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

Site		RB/HOL #2S			
Site Position:		Northing:	394,010.44 usft	Latitude:	32° 4' 44.208 N
From:	Lat/Long	Easting:	863,431.24 usft	Longitude:	103° 17' 36.291 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Holly 122H					
Well Position	+N/-S	0.0 usft	Northing:	394,011.40 usft	Latitude:	32° 4' 44.208 N
	+E/-W	0.0 usft	Easting:	863,531.26 usft	Longitude:	103° 17' 35.129 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,004.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	12/12/2018	6.65	59.95	47,730.97081233

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	178.12

<b>Survey Tool Program</b>	<b>Date</b>	2/22/2019		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	22,935.0	Design #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Planned Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
100.0	0.00	0.00	100.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
200.0	0.00	0.00	200.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
300.0	0.00	0.00	300.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
400.0	0.00	0.00	400.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
500.0	0.00	0.00	500.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
600.0	0.00	0.00	600.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
700.0	0.00	0.00	700.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
800.0	0.00	0.00	800.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
900.0	0.00	0.00	900.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
1,000.0	0.00	0.00	1,000.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	
1,100.0	0.00	0.00	1,100.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W	



<b>Company:</b>	Ameredev Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Project:</b>	RB/HOL	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Well:</b>	Holly 122H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM5000

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,300.0	0.00	0.00	1,300.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,400.0	0.00	0.00	1,400.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,500.0	0.00	0.00	1,500.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,600.0	0.00	0.00	1,600.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,700.0	0.00	0.00	1,700.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,800.0	0.00	0.00	1,800.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
1,900.0	0.00	0.00	1,900.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
2,000.0	0.00	0.00	2,000.0	-229.0	800.0	32° 4' 44.208 N	103° 17' 35.129 W
2,100.0	2.00	38.00	2,100.0	-227.7	801.1	32° 4' 44.221 N	103° 17' 35.116 W
2,200.0	4.00	38.00	2,199.8	-223.5	804.3	32° 4' 44.262 N	103° 17' 35.078 W
2,300.0	6.00	38.00	2,299.5	-216.7	809.7	32° 4' 44.329 N	103° 17' 35.015 W
2,400.0	6.00	38.00	2,398.9	-208.4	816.1	32° 4' 44.410 N	103° 17' 34.940 W
2,500.0	6.00	38.00	2,498.4	-200.2	822.5	32° 4' 44.491 N	103° 17' 34.864 W
2,600.0	6.00	38.00	2,597.8	-192.0	829.0	32° 4' 44.572 N	103° 17' 34.788 W
2,700.0	6.00	38.00	2,697.3	-183.7	835.4	32° 4' 44.653 N	103° 17' 34.713 W
2,800.0	6.00	38.00	2,796.7	-175.5	841.9	32° 4' 44.734 N	103° 17' 34.637 W
2,900.0	6.00	38.00	2,896.2	-167.2	848.3	32° 4' 44.815 N	103° 17' 34.561 W
3,000.0	6.00	38.00	2,995.6	-159.0	854.7	32° 4' 44.895 N	103° 17' 34.485 W
3,100.0	6.00	38.00	3,095.1	-150.8	861.2	32° 4' 44.976 N	103° 17' 34.410 W
3,200.0	6.00	38.00	3,194.5	-142.5	867.6	32° 4' 45.057 N	103° 17' 34.334 W
3,300.0	6.00	38.00	3,294.0	-134.3	874.0	32° 4' 45.138 N	103° 17' 34.258 W
3,400.0	6.00	38.00	3,393.4	-126.1	880.5	32° 4' 45.219 N	103° 17' 34.183 W
3,500.0	6.00	38.00	3,492.9	-117.8	886.9	32° 4' 45.300 N	103° 17' 34.107 W
3,600.0	6.00	38.00	3,592.3	-109.6	893.3	32° 4' 45.381 N	103° 17' 34.031 W
3,700.0	6.00	38.00	3,691.8	-101.4	899.8	32° 4' 45.462 N	103° 17' 33.955 W
3,800.0	6.00	38.00	3,791.2	-93.1	906.2	32° 4' 45.543 N	103° 17' 33.880 W
3,900.0	6.00	38.00	3,890.7	-84.9	912.6	32° 4' 45.623 N	103° 17' 33.804 W
4,000.0	6.00	38.00	3,990.1	-76.6	919.1	32° 4' 45.704 N	103° 17' 33.728 W
4,100.0	6.00	38.00	4,089.6	-68.4	925.5	32° 4' 45.785 N	103° 17' 33.653 W
4,200.0	6.00	38.00	4,189.0	-60.2	932.0	32° 4' 45.866 N	103° 17' 33.577 W
4,300.0	6.00	38.00	4,288.5	-51.9	938.4	32° 4' 45.947 N	103° 17' 33.501 W
4,400.0	6.00	38.00	4,387.9	-43.7	944.8	32° 4' 46.028 N	103° 17' 33.425 W
4,500.0	6.00	38.00	4,487.4	-35.5	951.3	32° 4' 46.109 N	103° 17' 33.350 W
4,600.0	6.00	38.00	4,586.9	-27.2	957.7	32° 4' 46.190 N	103° 17' 33.274 W
4,700.0	6.00	38.00	4,686.3	-19.0	964.1	32° 4' 46.271 N	103° 17' 33.198 W
4,800.0	6.00	38.00	4,785.8	-10.7	970.6	32° 4' 46.351 N	103° 17' 33.123 W
4,900.0	6.00	38.00	4,885.2	-2.5	977.0	32° 4' 46.432 N	103° 17' 33.047 W
5,000.0	6.00	38.00	4,984.7	5.7	983.4	32° 4' 46.513 N	103° 17' 32.971 W
5,100.0	6.00	38.00	5,084.1	14.0	989.9	32° 4' 46.594 N	103° 17' 32.895 W
5,200.0	6.00	38.00	5,183.6	22.2	996.3	32° 4' 46.675 N	103° 17' 32.820 W
5,300.0	6.00	38.00	5,283.0	30.4	1,002.7	32° 4' 46.756 N	103° 17' 32.744 W
5,400.0	6.00	38.00	5,382.5	38.7	1,009.2	32° 4' 46.837 N	103° 17' 32.668 W
5,500.0	6.00	38.00	5,481.9	46.9	1,015.6	32° 4' 46.918 N	103° 17' 32.593 W

<b>Company:</b>	Ameredev Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Project:</b>	RB/HOL	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Well:</b>	Holly 122H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM5000

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
5,600.0	6.00	38.00	5,581.4	55.2	1,022.0	32° 4' 46.998 N	103° 17' 32.517 W
5,700.0	6.00	38.00	5,680.8	63.4	1,028.5	32° 4' 47.079 N	103° 17' 32.441 W
5,800.0	6.00	38.00	5,780.3	71.6	1,034.9	32° 4' 47.160 N	103° 17' 32.365 W
5,900.0	6.00	38.00	5,879.7	79.9	1,041.4	32° 4' 47.241 N	103° 17' 32.290 W
6,000.0	6.00	38.00	5,979.2	88.1	1,047.8	32° 4' 47.322 N	103° 17' 32.214 W
6,100.0	6.00	38.00	6,078.6	96.3	1,054.2	32° 4' 47.403 N	103° 17' 32.138 W
6,200.0	6.00	38.00	6,178.1	104.6	1,060.7	32° 4' 47.484 N	103° 17' 32.063 W
6,300.0	6.00	38.00	6,277.5	112.8	1,067.1	32° 4' 47.565 N	103° 17' 31.987 W
6,400.0	6.00	38.00	6,377.0	121.0	1,073.5	32° 4' 47.646 N	103° 17' 31.911 W
6,500.0	6.00	38.00	6,476.4	129.3	1,080.0	32° 4' 47.726 N	103° 17' 31.835 W
6,600.0	6.00	38.00	6,575.9	137.5	1,086.4	32° 4' 47.807 N	103° 17' 31.760 W
6,700.0	6.00	38.00	6,675.3	145.8	1,092.8	32° 4' 47.888 N	103° 17' 31.684 W
6,724.8	6.00	38.00	6,700.0	147.8	1,094.4	32° 4' 47.908 N	103° 17' 31.665 W
6,800.0	4.50	38.00	6,774.9	153.2	1,098.7	32° 4' 47.962 N	103° 17' 31.615 W
6,900.0	2.50	38.00	6,874.7	158.0	1,102.4	32° 4' 48.009 N	103° 17' 31.571 W
7,000.0	0.50	38.00	6,974.7	160.1	1,104.0	32° 4' 48.029 N	103° 17' 31.552 W
7,024.8	0.00	0.00	6,999.5	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,100.0	0.00	0.00	7,074.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,200.0	0.00	0.00	7,174.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,300.0	0.00	0.00	7,274.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,400.0	0.00	0.00	7,374.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,500.0	0.00	0.00	7,474.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,600.0	0.00	0.00	7,574.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,700.0	0.00	0.00	7,674.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,800.0	0.00	0.00	7,774.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
7,900.0	0.00	0.00	7,874.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,000.0	0.00	0.00	7,974.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,100.0	0.00	0.00	8,074.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,200.0	0.00	0.00	8,174.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,300.0	0.00	0.00	8,274.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,400.0	0.00	0.00	8,374.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,500.0	0.00	0.00	8,474.7	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,525.3	0.00	0.00	8,500.0	160.2	1,104.1	32° 4' 48.030 N	103° 17' 31.552 W
8,600.0	1.49	38.00	8,574.7	160.9	1,104.7	32° 4' 48.037 N	103° 17' 31.545 W
8,700.0	3.49	38.00	8,674.6	164.4	1,107.4	32° 4' 48.071 N	103° 17' 31.513 W
8,800.0	5.49	38.00	8,774.2	170.5	1,112.2	32° 4' 48.132 N	103° 17' 31.456 W
8,825.3	6.00	38.00	8,799.5	172.5	1,113.8	32° 4' 48.151 N	103° 17' 31.438 W
8,900.0	6.00	38.00	8,873.7	178.7	1,118.6	32° 4' 48.212 N	103° 17' 31.381 W
9,000.0	6.00	38.00	8,973.2	186.9	1,125.0	32° 4' 48.292 N	103° 17' 31.306 W
9,100.0	6.00	38.00	9,072.6	195.2	1,131.4	32° 4' 48.373 N	103° 17' 31.230 W
9,200.0	6.00	38.00	9,172.1	203.4	1,137.9	32° 4' 48.454 N	103° 17' 31.154 W
9,300.0	6.00	38.00	9,271.5	211.6	1,144.3	32° 4' 48.535 N	103° 17' 31.079 W
9,400.0	6.00	38.00	9,371.0	219.9	1,150.7	32° 4' 48.616 N	103° 17' 31.003 W
9,500.0	6.00	38.00	9,470.4	228.1	1,157.2	32° 4' 48.697 N	103° 17' 30.927 W

**Company:** Ameredev Operating, LLC.  
**Project:** RB/HOL  
**Site:** RB/HOL #2S  
**Well:** Holly 122H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well Holly 122H  
**TVD Reference:** KB @ 3031.0usft  
**MD Reference:** KB @ 3031.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000

### Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
9,600.0	6.00	38.00	9,569.9	236.3	1,163.6	32° 4' 48.778 N	103° 17' 30.851 W
9,700.0	6.00	38.00	9,669.3	244.6	1,170.0	32° 4' 48.859 N	103° 17' 30.776 W
9,800.0	6.00	38.00	9,768.8	252.8	1,176.5	32° 4' 48.940 N	103° 17' 30.700 W
9,900.0	6.00	38.00	9,868.2	261.1	1,182.9	32° 4' 49.020 N	103° 17' 30.624 W
10,000.0	6.00	38.00	9,967.7	269.3	1,189.4	32° 4' 49.101 N	103° 17' 30.549 W
10,100.0	6.00	38.00	10,067.1	277.5	1,195.8	32° 4' 49.182 N	103° 17' 30.473 W
10,200.0	6.00	38.00	10,166.6	285.8	1,202.2	32° 4' 49.263 N	103° 17' 30.397 W
10,300.0	6.00	38.00	10,266.0	294.0	1,208.7	32° 4' 49.344 N	103° 17' 30.321 W
10,400.0	6.00	38.00	10,365.5	302.2	1,215.1	32° 4' 49.425 N	103° 17' 30.246 W
10,500.0	6.00	38.00	10,464.9	310.5	1,221.5	32° 4' 49.506 N	103° 17' 30.170 W
10,600.0	6.00	38.00	10,564.4	318.7	1,228.0	32° 4' 49.587 N	103° 17' 30.094 W
10,700.0	6.00	38.00	10,663.8	326.9	1,234.4	32° 4' 49.668 N	103° 17' 30.019 W
10,800.0	6.00	38.00	10,763.3	335.2	1,240.8	32° 4' 49.748 N	103° 17' 29.943 W
10,900.0	6.00	38.00	10,862.8	343.4	1,247.3	32° 4' 49.829 N	103° 17' 29.867 W
11,000.0	6.00	38.00	10,962.2	351.7	1,253.7	32° 4' 49.910 N	103° 17' 29.791 W
11,100.0	6.00	38.00	11,061.7	359.9	1,260.1	32° 4' 49.991 N	103° 17' 29.716 W
11,138.6	6.00	38.00	11,100.0	363.1	1,262.6	32° 4' 50.022 N	103° 17' 29.686 W
11,200.0	4.77	38.00	11,161.2	367.6	1,266.2	32° 4' 50.067 N	103° 17' 29.645 W
11,300.0	2.77	38.00	11,261.0	372.8	1,270.2	32° 4' 50.118 N	103° 17' 29.597 W
11,400.0	0.77	38.00	11,360.9	375.2	1,272.1	32° 4' 50.142 N	103° 17' 29.575 W
11,438.6	0.00	0.00	11,399.5	375.4	1,272.3	32° 4' 50.144 N	103° 17' 29.573 W
11,500.0	0.00	0.00	11,460.9	375.4	1,272.3	32° 4' 50.144 N	103° 17' 29.573 W
11,539.1	0.00	0.00	11,500.0	375.4	1,272.3	32° 4' 50.144 N	103° 17' 29.573 W
<b>Hol122 KOP</b>							
11,600.0	7.32	277.55	11,560.7	375.9	1,268.4	32° 4' 50.149 N	103° 17' 29.617 W
11,700.0	19.34	277.55	11,657.9	379.0	1,245.6	32° 4' 50.181 N	103° 17' 29.882 W
11,744.9	24.74	277.55	11,699.5	381.2	1,228.9	32° 4' 50.205 N	103° 17' 30.076 W
11,800.0	24.71	261.68	11,749.6	381.0	1,206.1	32° 4' 50.205 N	103° 17' 30.342 W
11,900.0	28.61	236.11	11,839.2	364.6	1,165.4	32° 4' 50.047 N	103° 17' 30.817 W
12,000.0	36.01	218.24	11,923.9	328.0	1,127.2	32° 4' 49.688 N	103° 17' 31.265 W
12,100.0	45.22	206.29	11,999.8	272.9	1,093.1	32° 4' 49.146 N	103° 17' 31.667 W
12,200.0	55.32	197.77	12,063.7	201.7	1,064.7	32° 4' 48.444 N	103° 17' 32.004 W
12,300.0	65.88	191.16	12,112.8	117.4	1,043.3	32° 4' 47.613 N	103° 17' 32.263 W
12,400.0	76.67	185.58	12,144.9	23.9	1,029.7	32° 4' 46.689 N	103° 17' 32.432 W
12,500.0	87.59	180.48	12,158.5	-74.8	1,024.5	32° 4' 45.712 N	103° 17' 32.503 W
12,522.1	90.00	179.38	12,159.0	-96.9	1,024.5	32° 4' 45.494 N	103° 17' 32.505 W
<b>Hol122 FTP</b>							
12,600.0	90.00	179.38	12,159.0	-174.8	1,025.4	32° 4' 44.723 N	103° 17' 32.504 W
12,700.0	90.00	179.38	12,159.0	-274.8	1,026.5	32° 4' 43.733 N	103° 17' 32.502 W
12,800.0	90.00	179.38	12,159.0	-374.8	1,027.6	32° 4' 42.744 N	103° 17' 32.501 W
12,900.0	90.00	179.38	12,159.0	-474.8	1,028.7	32° 4' 41.754 N	103° 17' 32.499 W
13,000.0	90.00	179.38	12,159.0	-574.8	1,029.7	32° 4' 40.765 N	103° 17' 32.498 W
13,100.0	90.00	179.38	12,159.0	-674.8	1,030.8	32° 4' 39.775 N	103° 17' 32.497 W
13,200.0	90.00	179.38	12,159.0	-774.8	1,031.9	32° 4' 38.786 N	103° 17' 32.495 W
13,300.0	90.00	179.38	12,159.0	-874.8	1,033.0	32° 4' 37.796 N	103° 17' 32.494 W

**Company:** Ameredev Operating, LLC.  
**Project:** RB/HOL  
**Site:** RB/HOL #2S  
**Well:** Holly 122H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well Holly 122H  
**TVD Reference:** KB @ 3031.0usft  
**MD Reference:** KB @ 3031.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000

**Planned Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
13,400.0	90.00	179.38	12,159.0	-974.8	1,034.1	32° 4' 36.807 N	103° 17' 32.492 W
13,500.0	90.00	179.38	12,159.0	-1,074.8	1,035.2	32° 4' 35.817 N	103° 17' 32.491 W
13,600.0	90.00	179.38	12,159.0	-1,174.8	1,036.3	32° 4' 34.828 N	103° 17' 32.489 W
13,700.0	90.00	179.38	12,159.0	-1,274.8	1,037.4	32° 4' 33.838 N	103° 17' 32.488 W
13,800.0	90.00	179.38	12,159.0	-1,374.7	1,038.5	32° 4' 32.849 N	103° 17' 32.486 W
13,900.0	90.00	179.38	12,159.0	-1,474.7	1,039.6	32° 4' 31.859 N	103° 17' 32.485 W
14,000.0	90.00	179.38	12,159.0	-1,574.7	1,040.7	32° 4' 30.870 N	103° 17' 32.483 W
14,100.0	90.00	179.38	12,159.0	-1,674.7	1,041.7	32° 4' 29.880 N	103° 17' 32.482 W
14,200.0	90.00	179.38	12,159.0	-1,774.7	1,042.8	32° 4' 28.891 N	103° 17' 32.480 W
14,300.0	90.00	179.38	12,159.0	-1,874.7	1,043.9	32° 4' 27.901 N	103° 17' 32.479 W
14,400.0	90.00	179.38	12,159.0	-1,974.7	1,045.0	32° 4' 26.911 N	103° 17' 32.478 W
14,500.0	90.00	179.38	12,159.0	-2,074.7	1,046.1	32° 4' 25.922 N	103° 17' 32.476 W
14,600.0	90.00	179.38	12,159.0	-2,174.7	1,047.2	32° 4' 24.932 N	103° 17' 32.475 W
14,700.0	90.00	179.38	12,159.0	-2,274.7	1,048.3	32° 4' 23.943 N	103° 17' 32.473 W
14,800.0	90.00	179.38	12,159.0	-2,374.7	1,049.4	32° 4' 22.953 N	103° 17' 32.472 W
14,900.0	90.00	179.38	12,159.0	-2,474.7	1,050.5	32° 4' 21.964 N	103° 17' 32.470 W
15,000.0	90.00	179.38	12,159.0	-2,574.7	1,051.6	32° 4' 20.974 N	103° 17' 32.469 W
15,100.0	90.00	179.38	12,159.0	-2,674.7	1,052.7	32° 4' 19.985 N	103° 17' 32.467 W
15,200.0	90.00	179.38	12,159.0	-2,774.7	1,053.7	32° 4' 18.995 N	103° 17' 32.466 W
15,300.0	90.00	179.38	12,159.0	-2,874.7	1,054.8	32° 4' 18.006 N	103° 17' 32.464 W
15,400.0	90.00	179.38	12,159.0	-2,974.7	1,055.9	32° 4' 17.016 N	103° 17' 32.463 W
15,500.0	90.00	179.38	12,159.0	-3,074.6	1,057.0	32° 4' 16.027 N	103° 17' 32.461 W
15,600.0	90.00	179.38	12,159.0	-3,174.6	1,058.1	32° 4' 15.037 N	103° 17' 32.460 W
15,700.0	90.00	179.38	12,159.0	-3,274.6	1,059.2	32° 4' 14.048 N	103° 17' 32.459 W
15,800.0	90.00	179.38	12,159.0	-3,374.6	1,060.3	32° 4' 13.058 N	103° 17' 32.457 W
15,900.0	90.00	179.38	12,159.0	-3,474.6	1,061.4	32° 4' 12.069 N	103° 17' 32.456 W
16,000.0	90.00	179.38	12,159.0	-3,574.6	1,062.5	32° 4' 11.079 N	103° 17' 32.454 W
16,100.0	90.00	179.38	12,159.0	-3,674.6	1,063.6	32° 4' 10.090 N	103° 17' 32.453 W
16,200.0	90.00	179.38	12,159.0	-3,774.6	1,064.7	32° 4' 9.100 N	103° 17' 32.451 W
16,300.0	90.00	179.38	12,159.0	-3,874.6	1,065.7	32° 4' 8.111 N	103° 17' 32.450 W
16,400.0	90.00	179.38	12,159.0	-3,974.6	1,066.8	32° 4' 7.121 N	103° 17' 32.448 W
16,500.0	90.00	179.38	12,159.0	-4,074.6	1,067.9	32° 4' 6.132 N	103° 17' 32.447 W
16,600.0	90.00	179.38	12,159.0	-4,174.6	1,069.0	32° 4' 5.142 N	103° 17' 32.445 W
16,700.0	90.00	179.38	12,159.0	-4,274.6	1,070.1	32° 4' 4.153 N	103° 17' 32.444 W
16,800.0	90.00	179.38	12,159.0	-4,374.6	1,071.2	32° 4' 3.163 N	103° 17' 32.442 W
16,900.0	90.00	179.38	12,159.0	-4,474.6	1,072.3	32° 4' 2.174 N	103° 17' 32.441 W
17,000.0	90.00	179.38	12,159.0	-4,574.6	1,073.4	32° 4' 1.184 N	103° 17' 32.439 W
17,100.0	90.00	179.38	12,159.0	-4,674.6	1,074.5	32° 4' 0.195 N	103° 17' 32.438 W
17,200.0	90.00	179.38	12,159.0	-4,774.5	1,075.6	32° 3' 59.205 N	103° 17' 32.437 W
17,300.0	90.00	179.38	12,159.0	-4,874.5	1,076.7	32° 3' 58.216 N	103° 17' 32.435 W
17,400.0	90.00	179.38	12,159.0	-4,974.5	1,077.7	32° 3' 57.226 N	103° 17' 32.434 W
17,500.0	90.00	179.38	12,159.0	-5,074.5	1,078.8	32° 3' 56.237 N	103° 17' 32.432 W
17,600.0	90.00	179.38	12,159.0	-5,174.5	1,079.9	32° 3' 55.247 N	103° 17' 32.431 W
17,700.0	90.00	179.38	12,159.0	-5,274.5	1,081.0	32° 3' 54.258 N	103° 17' 32.429 W

<b>Company:</b>	Ameredev Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Project:</b>	RB/HOL	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Well:</b>	Holly 122H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM5000

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
17,705.0	90.00	179.38	12,159.0	-5,279.5	1,081.1	32° 3' 54.208 N	103° 17' 32.429 W
<b>Hol122 into NMNM137473</b>							
17,800.0	90.00	179.38	12,159.0	-5,374.5	1,082.1	32° 3' 53.268 N	103° 17' 32.428 W
17,900.0	90.00	179.38	12,159.0	-5,474.5	1,083.2	32° 3' 52.279 N	103° 17' 32.426 W
18,000.0	90.00	179.38	12,159.0	-5,574.5	1,084.3	32° 3' 51.289 N	103° 17' 32.425 W
18,100.0	90.00	179.38	12,159.0	-5,674.5	1,085.4	32° 3' 50.300 N	103° 17' 32.423 W
18,200.0	90.00	179.38	12,159.0	-5,774.5	1,086.5	32° 3' 49.310 N	103° 17' 32.422 W
18,300.0	90.00	179.38	12,159.0	-5,874.5	1,087.6	32° 3' 48.321 N	103° 17' 32.420 W
18,400.0	90.00	179.38	12,159.0	-5,974.5	1,088.6	32° 3' 47.331 N	103° 17' 32.419 W
18,500.0	90.00	179.38	12,159.0	-6,074.5	1,089.7	32° 3' 46.341 N	103° 17' 32.417 W
18,600.0	90.00	179.38	12,159.0	-6,174.5	1,090.8	32° 3' 45.352 N	103° 17' 32.416 W
18,700.0	90.00	179.38	12,159.0	-6,274.5	1,091.9	32° 3' 44.362 N	103° 17' 32.415 W
18,800.0	90.00	179.38	12,159.0	-6,374.5	1,093.0	32° 3' 43.373 N	103° 17' 32.413 W
18,900.0	90.00	179.38	12,159.0	-6,474.4	1,094.1	32° 3' 42.383 N	103° 17' 32.412 W
19,000.0	90.00	179.38	12,159.0	-6,574.4	1,095.2	32° 3' 41.394 N	103° 17' 32.410 W
19,100.0	90.00	179.38	12,159.0	-6,674.4	1,096.3	32° 3' 40.404 N	103° 17' 32.409 W
19,200.0	90.00	179.38	12,159.0	-6,774.4	1,097.4	32° 3' 39.415 N	103° 17' 32.407 W
19,300.0	90.00	179.38	12,159.0	-6,874.4	1,098.5	32° 3' 38.425 N	103° 17' 32.406 W
19,400.0	90.00	179.38	12,159.0	-6,974.4	1,099.6	32° 3' 37.436 N	103° 17' 32.404 W
19,500.0	90.00	179.38	12,159.0	-7,074.4	1,100.6	32° 3' 36.446 N	103° 17' 32.403 W
19,600.0	90.00	179.38	12,159.0	-7,174.4	1,101.7	32° 3' 35.457 N	103° 17' 32.401 W
19,700.0	90.00	179.38	12,159.0	-7,274.4	1,102.8	32° 3' 34.467 N	103° 17' 32.400 W
19,800.0	90.00	179.38	12,159.0	-7,374.4	1,103.9	32° 3' 33.478 N	103° 17' 32.398 W
19,900.0	90.00	179.38	12,159.0	-7,474.4	1,105.0	32° 3' 32.488 N	103° 17' 32.397 W
20,000.0	90.00	179.38	12,159.0	-7,574.4	1,106.1	32° 3' 31.499 N	103° 17' 32.395 W
20,100.0	90.00	179.38	12,159.0	-7,674.4	1,107.2	32° 3' 30.509 N	103° 17' 32.394 W
20,200.0	90.00	179.38	12,159.0	-7,774.4	1,108.3	32° 3' 29.520 N	103° 17' 32.393 W
20,300.0	90.00	179.38	12,159.0	-7,874.4	1,109.4	32° 3' 28.530 N	103° 17' 32.391 W
20,400.0	90.00	179.38	12,159.0	-7,974.4	1,110.5	32° 3' 27.541 N	103° 17' 32.390 W
20,500.0	90.00	179.38	12,159.0	-8,074.4	1,111.6	32° 3' 26.551 N	103° 17' 32.388 W
20,600.0	90.00	179.38	12,159.0	-8,174.3	1,112.6	32° 3' 25.562 N	103° 17' 32.387 W
20,700.0	90.00	179.38	12,159.0	-8,274.3	1,113.7	32° 3' 24.572 N	103° 17' 32.385 W
20,800.0	90.00	179.38	12,159.0	-8,374.3	1,114.8	32° 3' 23.583 N	103° 17' 32.384 W
20,900.0	90.00	179.38	12,159.0	-8,474.3	1,115.9	32° 3' 22.593 N	103° 17' 32.382 W
21,000.0	90.00	179.38	12,159.0	-8,574.3	1,117.0	32° 3' 21.604 N	103° 17' 32.381 W
21,100.0	90.00	179.38	12,159.0	-8,674.3	1,118.1	32° 3' 20.614 N	103° 17' 32.379 W
21,200.0	90.00	179.38	12,159.0	-8,774.3	1,119.2	32° 3' 19.625 N	103° 17' 32.378 W
21,300.0	90.00	179.38	12,159.0	-8,874.3	1,120.3	32° 3' 18.635 N	103° 17' 32.376 W
21,400.0	90.00	179.38	12,159.0	-8,974.3	1,121.4	32° 3' 17.646 N	103° 17' 32.375 W
21,500.0	90.00	179.38	12,159.0	-9,074.3	1,122.5	32° 3' 16.656 N	103° 17' 32.373 W
21,600.0	90.00	179.38	12,159.0	-9,174.3	1,123.6	32° 3' 15.667 N	103° 17' 32.372 W
21,700.0	90.00	179.38	12,159.0	-9,274.3	1,124.6	32° 3' 14.677 N	103° 17' 32.371 W
21,800.0	90.00	179.38	12,159.0	-9,374.3	1,125.7	32° 3' 13.688 N	103° 17' 32.369 W
21,900.0	90.00	179.38	12,159.0	-9,474.3	1,126.8	32° 3' 12.698 N	103° 17' 32.368 W

<b>Company:</b>	Ameredev Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well Holly 122H
<b>Project:</b>	RB/HOL	<b>TVD Reference:</b>	KB @ 3031.0usft
<b>Site:</b>	RB/HOL #2S	<b>MD Reference:</b>	KB @ 3031.0usft
<b>Well:</b>	Holly 122H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM5000

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
22,000.0	90.00	179.38	12,159.0	-9,574.3	1,127.9	32° 3' 11.709 N	103° 17' 32.366 W
22,100.0	90.00	179.38	12,159.0	-9,674.3	1,129.0	32° 3' 10.719 N	103° 17' 32.365 W
22,200.0	90.00	179.38	12,159.0	-9,774.3	1,130.1	32° 3' 9.729 N	103° 17' 32.363 W
22,300.0	90.00	179.38	12,159.0	-9,874.2	1,131.2	32° 3' 8.740 N	103° 17' 32.362 W
22,400.0	90.00	179.38	12,159.0	-9,974.2	1,132.3	32° 3' 7.750 N	103° 17' 32.360 W
22,500.0	90.00	179.38	12,159.0	-10,074.2	1,133.4	32° 3' 6.761 N	103° 17' 32.359 W
22,600.0	90.00	179.38	12,159.0	-10,174.2	1,134.5	32° 3' 5.771 N	103° 17' 32.357 W
22,700.0	90.00	179.38	12,159.0	-10,274.2	1,135.6	32° 3' 4.782 N	103° 17' 32.356 W
22,800.0	90.00	179.38	12,159.0	-10,374.2	1,136.6	32° 3' 3.792 N	103° 17' 32.354 W
22,885.0	90.00	179.38	12,159.0	-10,459.2	1,137.6	32° 3' 2.951 N	103° 17' 32.353 W
<b>Hol122 LTP</b>							
22,900.0	90.00	179.38	12,159.0	-10,474.2	1,137.7	32° 3' 2.803 N	103° 17' 32.353 W
22,935.0	90.00	179.38	12,159.0	-10,509.2	1,138.1	32° 3' 2.456 N	103° 17' 32.352 W
<b>Hol122 BHL</b>							

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,705.0	12,159.0	-5,050.5	281.1	Hol122 into NMNM137473

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



**APD ID:** 10400042254

**Submission Date:** 05/28/2019

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

**Well Type:** OIL WELL

**Well Work Type:** Drill

## Section 1 - General

**Would you like to address long-term produced water disposal?** NO

## Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

### **Section 3 - Unlined Pits**

**Would you like to utilize Unlined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):**

**PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**



**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

#### Section 4 - Injection

**Would you like to utilize Injection PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

#### Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

#### Section 6 - Other

**Would you like to utilize Other PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** HOLLY FED COM 26 36 05

**Well Number:** 122H

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**