

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

HOBBS OCD
APR 04 2017

RECEIVED

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 94186
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP (6137)		7. If Unit or CA Agreement, Name and No.
3a. Address 333 West Sheridan Avenue Oklahoma City Ok		8. Lease Name and Well No. (30884) THISTLE UNIT 121H
3b. Phone No. (include area code) (405)552-6571		9. API Well No. 30-025-43732
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface NENE / 285 FNL / 850 FEL / LAT 32.296694 / LONG -103.5715096 At proposed prod. zone SWNE / 2630 FNL / 1340 FEL / LAT 32.2757244 / LONG -103.5730888		10. Field and Pool, or Exploratory TRIPLE X / BONE SPRING (59900)
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area SEC 21 / T23S / R33E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 285 feet		12. County or Parish LEA
16. No. of acres in lease 960		13. State NM
17. Spacing Unit dedicated to this well 240		
18. Distance from proposed location* to nearest well, drilling, completed, 230 feet applied for, on this lease, ft.		19. Proposed Depth 10138 feet / 17625 feet
20. BLM/BIA Bond No. on file FED: CO1104		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3723 feet		22. Approximate date work will start* 08/15/2018
		23. Estimated duration 45 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 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 required by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Rebecca Deal / Ph: (405)228-8429	Date 09/02/2016
Title Regulatory Compliance Professional		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/06/2017
Title Supervisor Multiple Resources		
Office HOBBS		

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Ka 04/09/17

Will require NSL
Administrative Order

APD ID: 10400005213	Submission Date: 09/02/2016	Highlight All Changes
Operator Name: DEVON ENERGY PRODUCTION COMPANY LP	Federal/Indian APD: FED	
Well Name: THISTLE UNIT	Well Number: 121H	
Well Type: OIL WELL	Well Work Type: Drill	

Application

Section 1 - General

APD ID: 10400005213	Tie to previous NOS?	Submission Date: 09/02/2016
BLM Office: HOBBS	User: Rebecca Deal	Title: Regulatory Compliance Professional
Federal/Indian APD: FED	Is the first lease penetrated for production Federal or Indian? FED	
Lease number: NMNM 94186	Lease Acres: 960	
Surface access agreement in place?	Allotted?	Reservation:
Agreement in place? NO	Federal or Indian agreement:	
Agreement number:		
Agreement name:		
Keep application confidential? YES		
Permitting Agent? NO	APD Operator: DEVON ENERGY PRODUCTION COMPANY LP	
Operator letter of designation:		
Keep application confidential? YES		

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue **Zip:** 73102

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (405)552-6571

Operator Internet Address: aletha.dewbre@dvn.com

Section 2 - Well Information

Well in Master Development Plan? NO	Mater Development Plan name:
Well in Master SUPO? NO	Master SUPO name:
Well in Master Drilling Plan? NO	Master Drilling Plan name:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Well Name: THISTLE UNIT

Well Number: 121H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: TRIPLE X

Pool Name: BONE SPRING

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N

Use Existing Well Pad? NO

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:
THISTLE UNIT

Number: 105H, 108H, 119H,
121H

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 230 FT

Distance to lease line: 285 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Thistle Unit 121H_C-102 Signed_09-02-2016.pdf

Well work start Date: 08/15/2018

Duration: 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 4725

STATE: NEW MEXICO

Meridian: NEW MEXICO PRINCIPAL **County:** LEA

Latitude: 32.296694

Longitude: -103.5715096

SHL

Elevation: 3723

MD: 0

TVD: 0

Leg #: 1

Lease Type: FEDERAL

Lease #: NMNM94186

NS-Foot: 285

NS Indicator: FNL

EW-Foot: 850

EW Indicator: FEL

Twsp: 23S

Range: 33E

Section: 21

Aliquot: NENE

Lot:

Tract:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.296694	Longitude: -103.5715096	
KOP	Elevation: -5837	MD: 9578	TVD: 9560
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM94186	
	NS-Foot: 200	NS Indicator: FNL	
	EW-Foot: 1239	EW Indicator: FEL	
	Twsp: 23S	Range: 33E	Section: 21
	Aliquot: NENE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.296694	Longitude: -103.5715096	
PPP	Elevation: -6315	MD: 10321	TVD: 10038
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM94186	
	NS-Foot: 613	NS Indicator: FNL	
	EW-Foot: 1241	EW Indicator: FEL	
	Twsp: 23S	Range: 33E	Section: 21
	Aliquot: NENE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.2757244	Longitude: -103.5730888	
EXIT	Elevation: -6415	MD: 17625	TVD: 10138
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM94186	
	NS-Foot: 2630	NS Indicator: FNL	
	EW-Foot: 1340	EW Indicator: FEL	
	Twsp: 23S	Range: 33E	Section: 28
	Aliquot: SWNE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.2757244	Longitude: -103.5730888	
BHL	Elevation: -6415	MD: 17625	TVD: 10138
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM94186	
	NS-Foot: 2630	NS Indicator: FNL	
	EW-Foot: 1340	EW Indicator: FEL	

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Twsp: 23S

Range: 33E

Section: 28

Aliquot: SWNE

Lot:

Tract:

Drilling Plan

Section 1 - Geologic Formations

ID: Surface formation

Name: UNKNOWN

Lithology(ies):

OTHER - null

Elevation: 3723

True Vertical Depth: 0

Measured Depth: 0

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 1

Name: RUSTLER

Lithology(ies):

ANHYDRITE

Elevation: 2343

True Vertical Depth: 1380

Measured Depth: 1380

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 2

Name: TOP OF SALT

Lithology(ies):

SALT

Elevation: 1847

True Vertical Depth: 1876

Measured Depth: 1876

Mineral Resource(s):

NONE

Is this a producing formation? N

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

ID: Formation 3

Name: BASE OF SALT

Lithology(ies):

SALT

Elevation: -1230

True Vertical Depth: 4953

Measured Depth: 4953

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 4

Name: DELAWARE

Lithology(ies):

SANDSTONE

Elevation: -1492

True Vertical Depth: 5215

Measured Depth: 5215

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 5

Name: BRUSHY CANYON LOWER

Lithology(ies):

SANDSTONE

Elevation: -5157

True Vertical Depth: 8880

Measured Depth: 8880

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 6

Name: BONE SPRING LIME

Lithology(ies):

LIMESTONE

Elevation: -5381

True Vertical Depth: 9104

Measured Depth: 9104

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 7

Name: BONE SPRING

Lithology(ies):

SILTSTONE

Elevation: -5571

True Vertical Depth: 9294

Measured Depth: 9294

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 8

Name: BONE SPRING

Lithology(ies):

SILTSTONE

Elevation: -5923

True Vertical Depth: 9646

Measured Depth: 9646

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 9

Name: BONE SPRING

Lithology(ies):

SILTSTONE

Elevation: -6265

True Vertical Depth: 9988

Measured Depth: 9988

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

ID: Formation 10

Name: BONE SPRING 1ST

Lithology(ies):

SANDSTONE

Elevation: -6507

True Vertical Depth: 10230

Measured Depth: 10230

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 10138

Equipment: 3M rotating head, mud-gas separator, panic line, and flare will be rigged up prior to drilling out surface casing.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

BOP Diagram Attachment:

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

Pressure Rating (PSI): 3M

Rating Depth: 5100

Equipment: 3M rotating head, mud-gas separator, panic line, and flare will be rigged up prior to drilling out surface casing.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

BOP Diagram Attachment:

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

Thistle Unit 121H_3M BOPE Double Ram and CLS Schematic_09-02-2016.pdf

Section 3 - Casing

String Type: PRODUCTION

Other String Type:

Hole Size: 8.75

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL: 3723

Bottom setting depth MD: 17625

Bottom setting depth TVD: 10138

Bottom setting depth MSL: -6415

Calculated casing length MD: 17625

Casing Size: 5.5

Other Size

Grade: P-110

Other Grade:

Weight: 17

Joint Type: OTHER

Other Joint Type: BTC

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.56

Burst Design Safety Factor: 1.93

Joint Tensile Design Safety Factor type: BUOYANT

Joint Tensile Design Safety Factor: 2.09

Body Tensile Design Safety Factor type: BUOYANT

Body Tensile Design Safety Factor: 2.09

Casing Design Assumptions and Worksheet(s):

Thistle Unit 121H_Production Casing Assumptions_09-02-2016.docx

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

String Type: SURFACE

Other String Type:

Hole Size: 17.5

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL:

Bottom setting depth MD: 1450

Bottom setting depth TVD: 1450

Bottom setting depth MSL: 2273

Calculated casing length MD: 1450

Casing Size: 13.375

Other Size

Grade: H-40

Other Grade:

Weight: 48

Joint Type: STC

Other Joint Type:

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.18

Burst Design Safety Factor: 2.64

Joint Tensile Design Safety Factor type: BUOYANT

Joint Tensile Design Safety Factor: 8.05

Body Tensile Design Safety Factor type: BUOYANT

Body Tensile Design Safety Factor: 8.05

Casing Design Assumptions and Worksheet(s):

Thistle Unit 121H_Surface Casing Assumptions_09-02-2016.docx

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

String Type: INTERMEDIATE

Other String Type:

Hole Size: 12.25

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL: 3723

Bottom setting depth MD: 5100

Bottom setting depth TVD: 5100

Bottom setting depth MSL: -1377

Calculated casing length MD: 5100

Casing Size: 9.625

Other Size

Grade: J-55

Other Grade:

Weight: 40

Joint Type: OTHER

Other Joint Type: BTC

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.15

Burst Design Safety Factor: 1.77

Joint Tensile Design Safety Factor type: BUOYANT

Joint Tensile Design Safety Factor: 3.98

Body Tensile Design Safety Factor type: BUOYANT

Body Tensile Design Safety Factor: 3.98

Casing Design Assumptions and Worksheet(s):

Thistle Unit 121H_Intermediate Casing Assumptions_09-02-2016.docx

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

String Type: INTERMEDIATE

Other String Type:

Hole Size: 12.25

Top setting depth MD: 4300

Top setting depth TVD: 4300

Top setting depth MSL: -577

Bottom setting depth MD: 5100

Bottom setting depth TVD: 5100

Bottom setting depth MSL: -1377

Calculated casing length MD: 800

Casing Size: 9.625

Other Size

Grade: HCK-55

Other Grade:

Weight: 40

Joint Type: OTHER

Other Joint Type: BTC

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.58

Burst Design Safety Factor: 1.47

Joint Tensile Design Safety Factor type: BUOYANT

Joint Tensile Design Safety Factor: 4.5

Body Tensile Design Safety Factor type: BUOYANT

Body Tensile Design Safety Factor: 4.5

Casing Design Assumptions and Worksheet(s):

Thistle Unit 121H_Intermediate Casing Assumptions_09-02-2016.docx

Section 4 - Cement

Casing String Type: INTERMEDIATE

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Stage Tool Depth:

Lead

Top MD of Segment: 0	Bottom MD Segment: 0	Cement Type: N/A
Additives: N/A	Quantity (sks): 0	Yield (cu.ff./sk): 0
Density: 0	Volume (cu.ft.): 0	Percent Excess:

Casing String Type: SURFACE

Stage Tool Depth: 300

Lead

Top MD of Segment: 0	Bottom MD Segment: 300	Cement Type: C
Additives: N/A	Quantity (sks): 185	Yield (cu.ff./sk): 1.72
Density: 13.5	Volume (cu.ft.): 312	Percent Excess: 50

Tail

Top MD of Segment: 300	Bottom MD Segment: 1450	Cement Type: C
Additives:	Quantity (sks): 865	Yield (cu.ff./sk): 1.33
Density: 14.8	Volume (cu.ft.): 1146	Percent Excess: 50

Stage Tool Depth: 300

Lead

Top MD of Segment: 0	Bottom MD Segment: 300	Cement Type: C
Additives: N/A	Quantity (sks): 235	Yield (cu.ff./sk): 1.33
Density: 14.8	Volume (cu.ft.): 312	Percent Excess: 50

Stage Tool Depth:

Lead

Top MD of Segment: 0	Bottom MD Segment: 1450	Cement Type: C
Additives: 1% Calcium Chloride	Quantity (sks): 1130	Yield (cu.ff./sk): 1.34
Density: 14.8	Volume (cu.ft.): 1510	Percent Excess: 50

Casing String Type: INTERMEDIATE

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Stage Tool Depth:

Lead

Top MD of Segment: 0	Bottom MD Segment: 4100	Cement Type: C
Additives: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake	Quantity (sks): 905	Yield (cu.ff./sk): 1.85
Density: 12.9	Volume (cu.ft.): 1669	Percent Excess: 30

Top MD of Segment: 4100	Bottom MD Segment: 5100	Cement Type: H
Additives: 0.125 lbs/sks Poly-R-Flake	Quantity (sks): 320	Yield (cu.ff./sk): 1.33
Density: 14.8	Volume (cu.ft.): 426	Percent Excess: 30

Casing String Type: PRODUCTION

Stage Tool Depth: 5500

Lead

Top MD of Segment: 4800	Bottom MD Segment: 4900	Cement Type: C
Additives: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC	Quantity (sks): 20	Yield (cu.ff./sk): 3.31
Density: 10.9	Volume (cu.ft.): 66	Percent Excess: 25

Top MD of Segment: 4900	Bottom MD Segment: 5000	Cement Type: H
Additives: 0.125 lbs/sack Poly-E-Flake	Quantity (sks): 30	Yield (cu.ff./sk): 1.33
Density: 14.8	Volume (cu.ft.): 39	Percent Excess: 25

Stage Tool Depth:

Lead

Top MD of Segment: 4900	Bottom MD Segment: 10000	Cement Type: H
Additives: Poz (Fly Ash) + 0.3% BWOC HR-601 + 10% bwoc Bentonite	Quantity (sks): 580	Yield (cu.ff./sk): 2.31
Density: 11.9	Volume (cu.ft.): 1389	Percent Excess: 25

Tail

Top MD of Segment: 10000	Bottom MD Segment: 17625	Cement Type: H
Additives: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite	Quantity (sks): 1765	Yield (cu.ff./sk): 1.2
Density: 14.5	Volume (cu.ft.): 2117	Percent Excess: 25

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Stage Tool Depth: 5500

Lead

Top MD of Segment: 5000

Bottom MD Segment: 10000

Cement Type: C

Additives: N/A

Quantity (sks): 420

Yield (cu.ff./sk): 3.31

Density: 10.9

Volume (cu.ft.): 3

Percent Excess: 25

Tail

Top MD of Segment: 10000

Bottom MD Segment: 17625

Cement Type: H

Additives: Poz (Fly Ash) + 0.5% bwoc
HALAD-344 + 0.4% bwoc CFR-3 +
0.2% BWOC HR-601 + 2% bwoc
Bentonite

Quantity (sks): 1765

Yield (cu.ff./sk): 1.2

Volume (cu.ft.): 2117

Percent Excess: 25

Density: 14.5

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: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth: 5100

Bottom Depth: 17625

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.5

Max Weight (lbs./gal.): 9.3

Density (lbs/cu.ft.):

Gel Strength (lbs/100 sq.ft.):

PH:

Viscosity (CP): 12

Filtration (cc):

Salinity (ppm):

Additional Characteristics:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Top Depth: 0 **Bottom Depth:** 1450

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.5 **Max Weight (lbs./gal.):** 9

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):** 2

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 0 **Bottom Depth:** 5100

Mud Type: SALT SATURATED

Min Weight (lbs./gal.): 10 **Max Weight (lbs./gal.):** 11

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):** 2

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

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

GR

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4395

Anticipated Surface Pressure: 2164.64

Anticipated Bottom Hole Temperature(F): 160

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Thistle Unit 121H_H2S Plan_09-02-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Thistle Unit 121H Directional Plan_09-02-2016.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Thistle Unit 121H_Anti Collision_09-02-2016.pdf

Thistle Unit 121H_Multi-Bowl Wellhead_09-02-2016.pdf

Thistle Unit 121H_Multi-Bowl Verbiage_3M_09-02-2016.pdf

Thistle Unit 121H_Closed Loop Design Plan_09-02-2016.pdf

Other Variance attachment:

Thistle Unit 121H_H_P Co-flex hose_09-02-2016.pdf

SUPO

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Thistle Unit 121H_Existing Accsss Route Map_09-02-2016.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Thistle Unit 121H one mile map_09-02-2016.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description: Thistle 21 CTB 1

Production Facilities description: Thistle Unit 21 CTB - CTB Plat, Battery Connect, Battery Connect Electric, Flowlines (buried), etc. 8 attachments. Four 4" flowlines & one 4" gas lift line (buried in same trench) from the Thistle Unit 121H, 105H, 119H, 108H to the Thistle 21 CTB 1. Per James Crittenden, CTB previously approved in Thistle Unit 77H, 107H, & 122H APDs. Staked PL between CTB and road. Should only option be one road, will pursue south 53ft. road.

Production Facilities map:

Thistle Unit 121H_Flowlines_11-17-2016.pdf

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BAT_EL_BS_11-17-2016.PDF

Thistle Unit 121H_THISTLE 21 CTB BATT CONN - NM_11-17-2016.pdf

Thistle Unit 121H_THISTLE 21 CTB BATT CONN BS R_11-17-2016.PDF

Thistle Unit 121H_Thistle Unit 21 CTB Svy_11-17-2016.pdf

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BAT_EL_SNM_P_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BATCON_BS_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BATCON_SNM_P_11-17-2016.PDF

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Water source use type: STIMULATION

Water source type: RECYCLED

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 202500

Source volume (acre-feet): 26.100851

Source volume (gal): 8505000

Water source and transportation map:

Thistle Unit 121H_Water Source Transfer Map_11-17-2016.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad. Caliche will be coming from the Brininstool Caliche Pit in the NENE of Section 20 - T23S-R33E. Caliche Map attached.

Construction Materials source location attachment:

Thistle Unit 121H_Caliche map_12-14-2016.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1650 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: All cuttings will disposed of at R360, Sundance, or equivalent.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 gallons

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: FLOWBACK

Waste content description: Average produced BWPD over the flowback period (first 30 days of production).

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: RECYCLE

Disposal location ownership: STATE

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Disposal type description:

Disposal location description: All produced water will be recycled at our Thistle water reuse facility. Any excess water that cannot be recycled will be sent to one of our 3 SWD's (Caballo 9 St 1, Rio Blanco 33 Fed 2, Rio Blanco 4 Fed Com 3) or to OWL (third-party; state tie-in).

Waste type: PRODUCED WATER

Waste content description: Average produced BWPD over the first year of production.

Amount of waste: 500 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: RECYCLE

Disposal location ownership: STATE

Disposal type description:

Disposal location description: All produced water will be recycled at our Thistle water reuse facility. Any excess water that cannot be recycled will be sent to one of our 3 SWD's (Caballo 9 St 1, Rio Blanco 33 Fed 2, Rio Blanco 4 Fed Com 3) or to OWL (third-party; state tie-in).

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Thistle Unit 121H_Well Pad Rig Layout_11-17-2016.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Thistle Unit 121H_Interim Reclamation Site_09-02-2016.pdf

Drainage/Erosion control construction: N/A

Drainage/Erosion control reclamation: N/A

Wellpad long term disturbance (acres): 1.64

Wellpad short term disturbance (acres): 4.48

Access road long term disturbance (acres): 0.007

Access road short term disturbance (acres): 0.007

Pipeline long term disturbance (acres): 0.8102686

Pipeline short term disturbance (acres): 0.8102686

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 2.4572685

Total short term disturbance: 5.2972684

Reconstruction method: Operator will use Best Management Practices "BMP" to mechanically recontour to obtain the desired outcome.

Topsoil redistribution: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Soil treatment: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Existing Vegetation at the well pad: Shinnery, yucca, grasses and mesquite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery, yucca, grasses and mesquite.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
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Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: James

Last Name: Crittenden

Phone: (575)748-1854

Email: james.crittenden

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Maintain weeds on an as needed basis

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP, STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: HOBBS FIELD OFFICE OCD

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP, STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: HOBBS FIELD OFFICE OCD

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Disturbance type: PIPELINE

Describe:

Surface Owner: PRIVATE OWNERSHIP, STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: HOBBS FIELD OFFICE OCD

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: Thistle Unit 21 CTB - CTB Plat, Battery Connect, Battery Connect Electric, Flowlines (buried), etc. 8 attachments. Four 4" flowlines & one 4" gas lift line (buried in same trench) from the Thistle Unit 121H, 105H, 119H, 108H to the Thistle 21 CTB 1. Per James Crittenden, CTB previously approved in Thistle Unit 77H, 107H, & 122H APDs. Staked PL between CTB and road. Should only option be one road, will pursue south 53ft. road. Caliche Map attached.

Use a previously conducted onsite? YES

Previous Onsite information: Previous onsite 6/14/16 for Thistle Unit 105H, 108H, 119H, & 121H. Notes supplied by CEHMM.

Other SUPO Attachment

Thistle Unit 121H_Flowlines_11-17-2016.pdf

Thistle Unit 121H_THISTLE 21 CTB BATT CONN - NM_11-17-2016.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Thistle Unit 121H_Thistle Unit 21 CTB Svy_11-17-2016.pdf

Thistle Unit 121H_THISTLE 21 CTB BATT CONN BS R_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BAT_EL_BS_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BAT_EL_SNM_P_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BATCON_SNM_P_11-17-2016.PDF

Thistle Unit 121H_THISTLE_UNIT_21_CTB_1_BATCON_BS_11-17-2016.PDF

Thistle Unit 121H_Caliche map_12-14-2016.pdf

PWD

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Leak detection system description:

Leak detection system attachment:

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 surface owner:

PWD disturbance (acres):

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

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

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Certification

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: Rebecca Deal

Signed on: 09/02/2016

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: THISTLE UNIT

Well Number: 121H

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)228-8429

Email address: Rebecca.Deal@dvn.com

Field Representative

Representative Name: James Crittenden

Street Address: 6488 Seven Rivers Hwy

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-1854

Email address: james.crittenden@dvn.com

Payment Info

Payment

APD Fee Payment Method: PAY.GOV

pay.gov Tracking ID: 25TMAQF4