

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 278653

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

1. Operator Name and Address MACK ENERGY CORP P.O. Box 960 Artesia, NM 88211-0960		2. OGRID Number 13837
		3. API Number 30-005-64351
4. Property Code 322158	5. Property Name DUNCAN STATE COM	6. Well No. 002H

7. Surface Location

UL - Lot E	Section 36	Township 15S	Range 28E	Lot Idn	Feet From 1980	N/S Line N	Feet From 990	E/W Line W	County Chaves
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8. Proposed Bottom Hole Location

UL - Lot L	Section 24	Township 15S	Range 28E	Lot Idn L	Feet From 1321	N/S Line S	Feet From 990	E/W Line W	County Chaves
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9. Pool Information

ROUND TANK;SAN ANDRES	52770
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3582
16. Multiple N	17. Proposed Depth 11179	18. Formation San Andres	19. Contractor	20. Spud Date 3/1/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

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

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	500	600	0
Int1	12.25	9.625	36	1500	600	0
Prod	8.75	7	26	3350	240	0
Prod	8.75	5.5	17	11179	1550	0

Casing/Cement Program: Additional Comments

Mack Energy proposed to drill a 17 1/2" hole to 500', run 13 3/8" csg/cmt. Drill 12 1/4" hole to 1500', run 9 5/8" csg/cmt. Drill 8 3/4" hole to 11179', run 7" & 5 1/2" csg/cmt. Put well on production.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000	3000	

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

Signature:

Printed Name: Electronically filed by Jerry Sherrell

Title: Production Clerk

Email Address: jerrys@mec.com

Date: 3/23/2020

Phone: 575-748-1288

OIL CONSERVATION DIVISION

Approved By: Raymond Podany

Title: Geologist

Approved Date: 3/23/2020

Expiration Date: 3/23/2022

Conditions of Approval Attached

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State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 52770	³ Pool Name Round Tank; San Andres
⁴ Property Code	⁵ Property Name DUNCAN STATE COM	⁶ Well Number 2H
⁷ OGRID No. 13837	⁸ Operator Name MACK ENERGY CORPORATION	⁹ Elevation 3582.7

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	36	15 S	28 E		1980	NORTH	990	WEST	CHAVES

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	15 S	28 E		1321	SOUTH	990	WEST	CHAVES

¹² Dedicated Acres 240	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Deana Weaver</i> 2/20/20 Signature _____ Date _____ Deana Weaver Printed Name _____ dweaver@mec.com E-mail Address _____ ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. FEBRUARY 11, 2020 Date of Survey _____ Signature and Seal of Professional Surveyor:  Certificate Number: 12797
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Intent ☒ As Drilled ☐

API #		
Operator Name: MACK ENERGY CORPORATION	Property Name: DUNCAN STATE COM	Well Number 2H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL D	Section 36	Township 15S	Range 28E	Lot	Feet 1280	From N/S NORTH	Feet 990	From E/W WEST	County CHAVES
Latitude 32.9762055					Longitude 104.0906019				NAD 83

Last Take Point (LTP)

UL M	Section 24	Township 15S	Range 28E	Lot	Feet 1220	From N/S SOUTH	Feet 990	From E/W WEST	County CHAVES
Latitude 32.9975826					Longitude 104.0906667				NAD 83

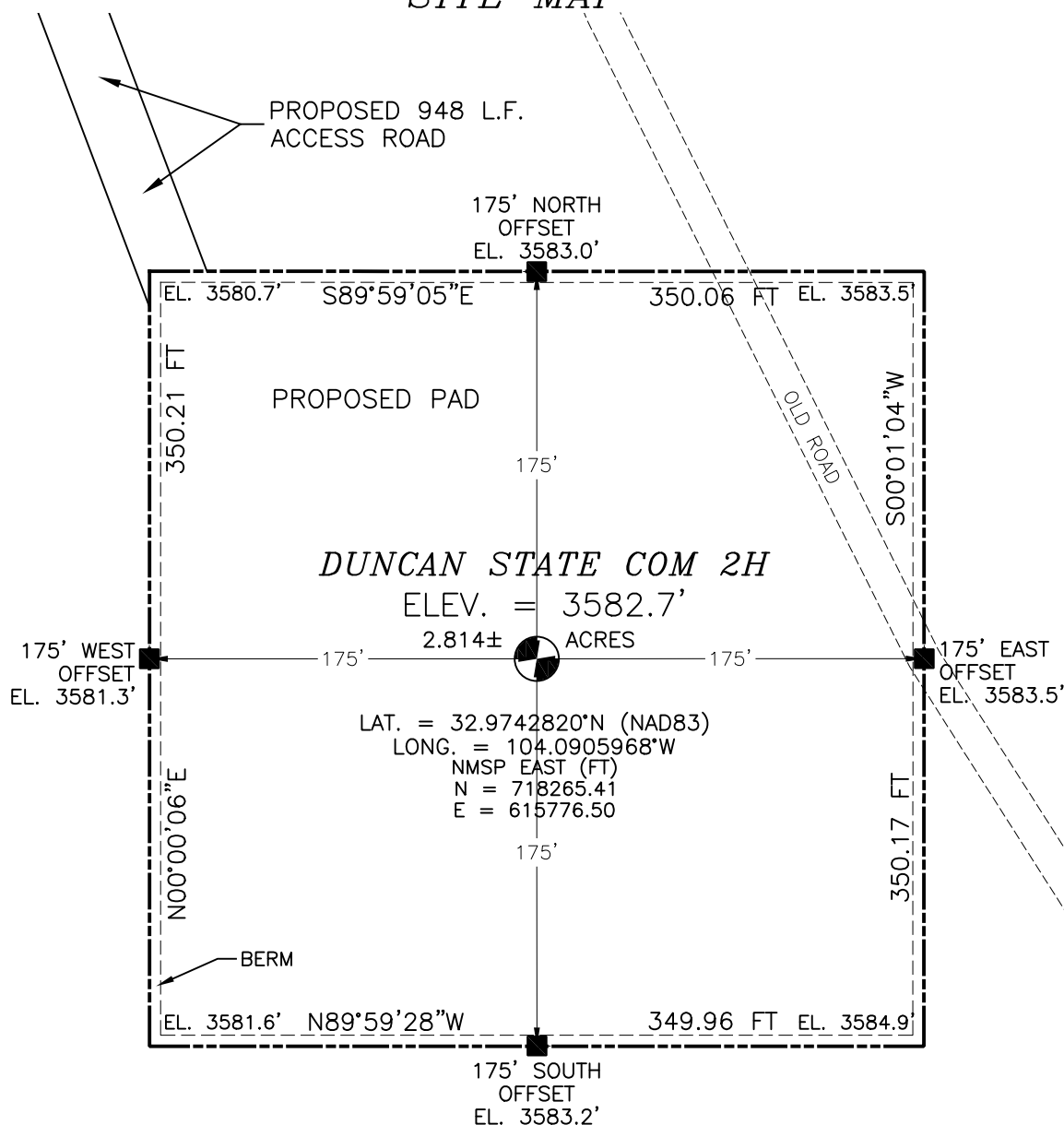
Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
SITE MAP



NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. ELEVATION VALUES ARE NAVD88.

0 8 40 80 160

SCALE 1" = 80'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. 82 & CR. 209 (TURKEY TRACT), GO NORTH ON CR. 209 APPROX. 5.0 MILES TO END OF CR. MAINTENANCE, CONTINUE NORTH ON TURKEY TRACT APPROX. 6.5 MILES, CONTINUE NORTHEAST ON 20' CALICHE LEASE ROAD APPROX. 0.6 OF A MILE, TURN RIGHT (EAST) ON 20' CALICHE LEASE ROAD GO APPROX. 0.4 OF A MILE, TURN RIGHT AND GO SOUTH APPROX. 142' TO THE NORTHEAST PAD CORNER FOR DUNCAN STATE COM 1H, FROM THE SOUTHEAST PAD CORNER FOLLOW ROAD SURVEY SOUTHEAST APPROX. 948' TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

I, FILMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR, CERTIFY THAT I DIRECTED AND SUPERVISED THIS SURVEY, THAT THIS SURVEY WAS ACCORDING TO THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILMON F. JARAMILLO, P.S. 7966

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

**MACK ENERGY CORPORATION
DUNCAN STATE COM 2H**

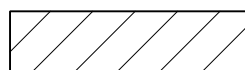
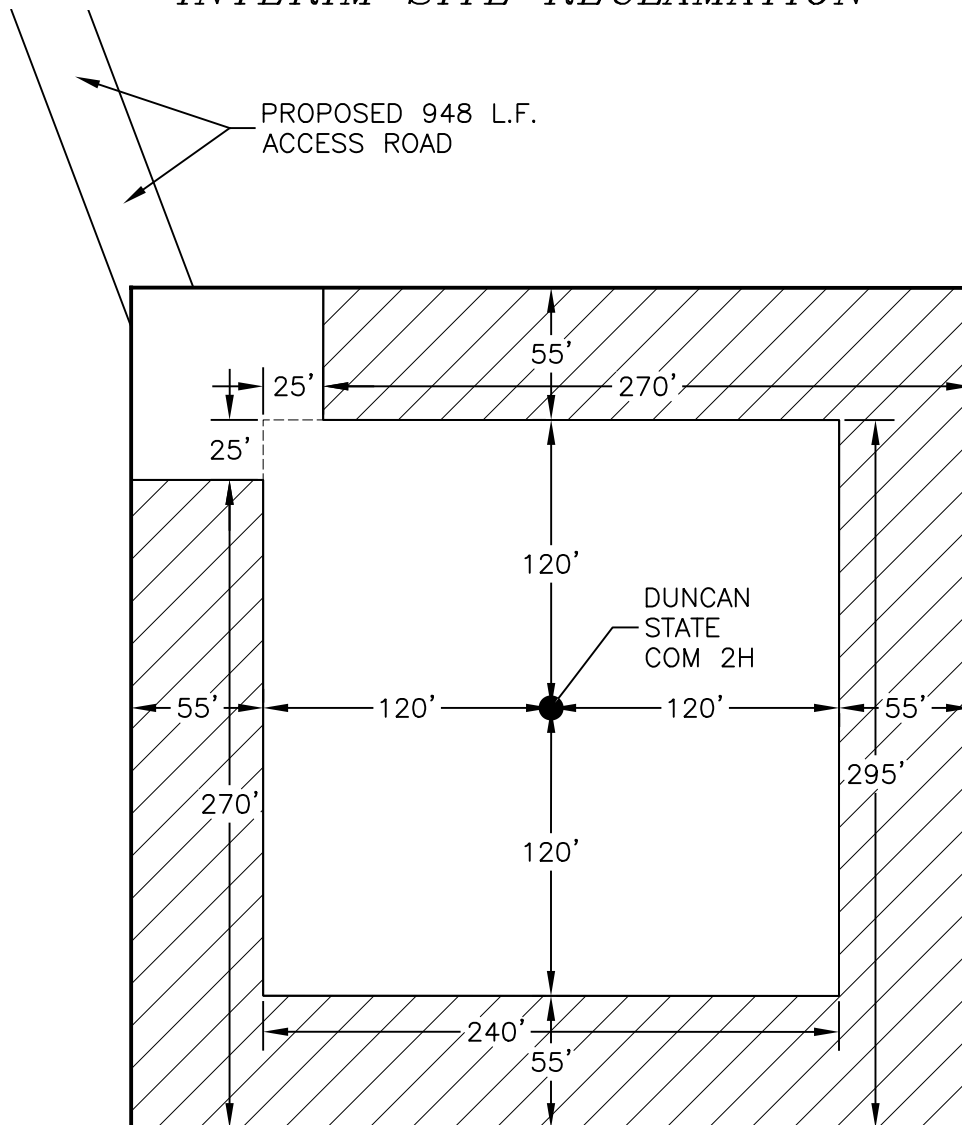
LOCATED 1980 FT. FROM THE NORTH LINE
AND 990 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 15 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

FEBRUARY 11, 2020

SURVEY NO. 7966

CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



DENOTES
RECLAMATION AREA
1.359± ACRES RECLAMATION AREA

0 8 40 80 160
SCALE 1" = 80'

MACK ENERGY CORPORATION
DUNCAN STATE COM 2H
LOCATED 1980 FT. FROM THE NORTH LINE
AND 990 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 15 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

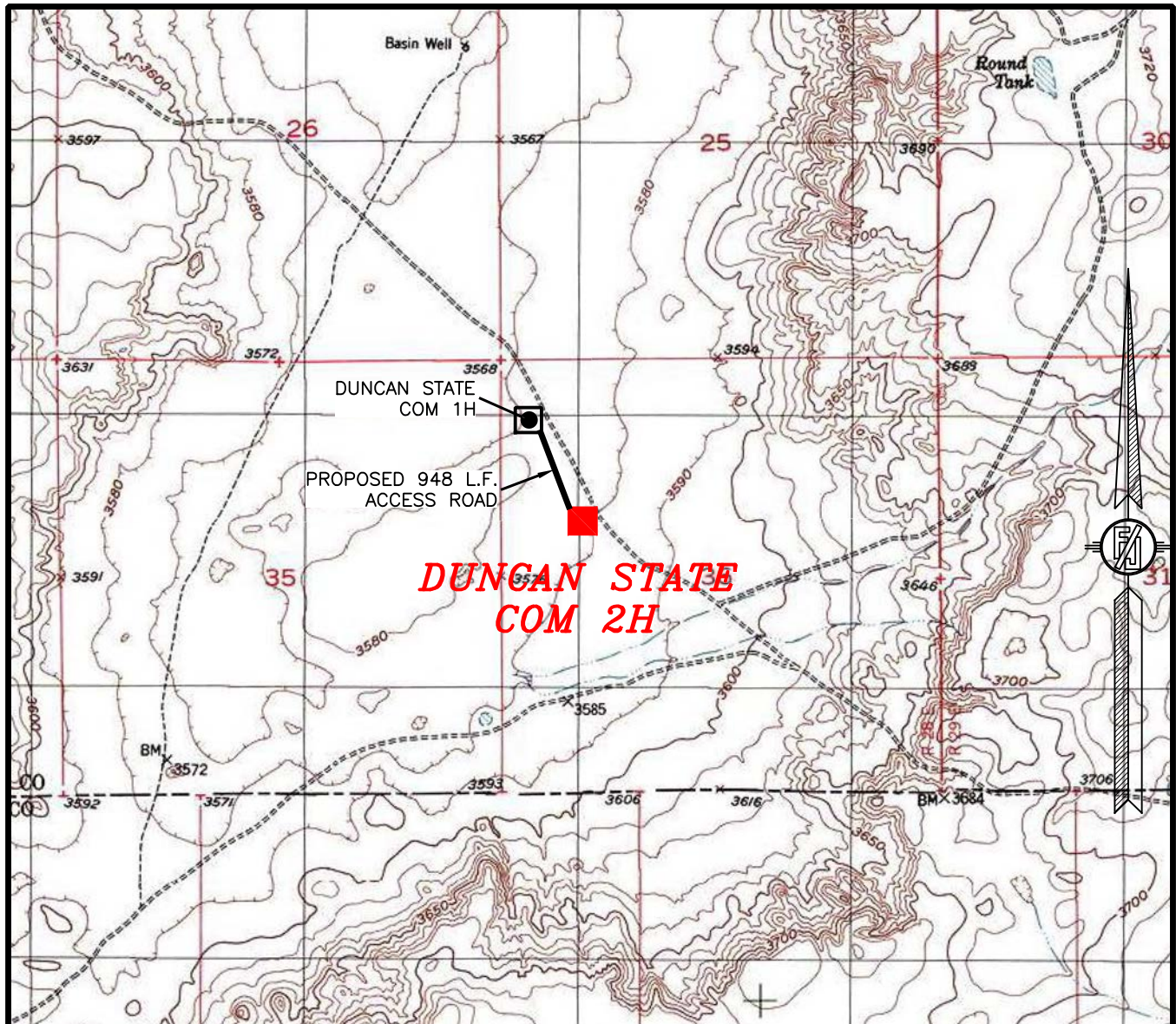
FEBRUARY 11, 2020

SURVEY NO. 7966

MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
BASIN WELL

NOT TO SCALE

MACK ENERGY CORPORATION
DUNCAN STATE COM 2H
LOCATED 1980 FT. FROM THE NORTH LINE
AND 990 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 15 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

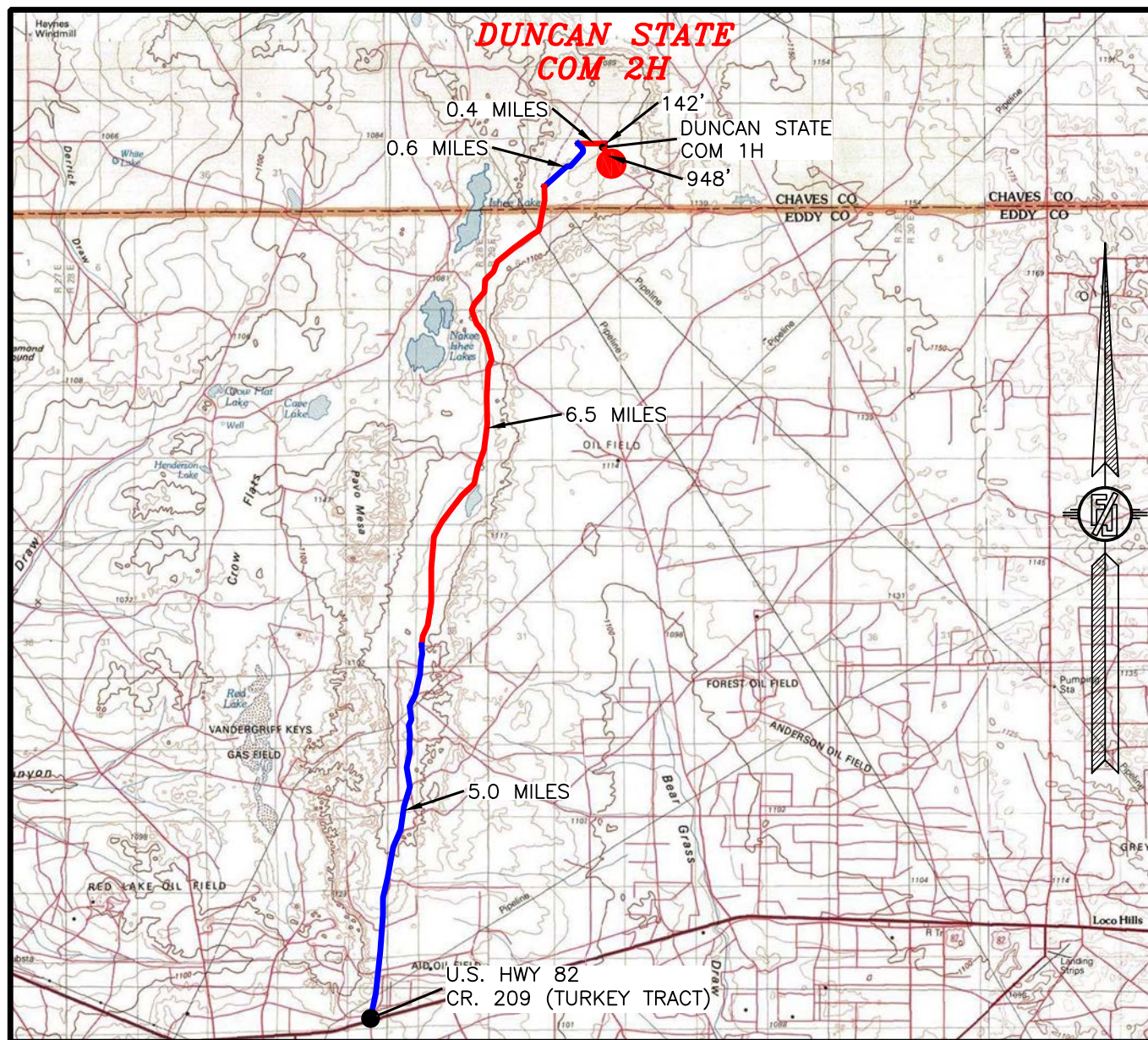
FEBRUARY 11, 2020

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

SURVEY NO. 7966
CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. 82 & CR. 209 (TURKEY TRACT), GO NORTH ON CR. 209 APPROX. 5.0 MILES TO END OF CR. MAINTENANCE, CONTINUE NORTH ON TURKEY TRACT APPROX. 6.5 MILES, CONTINUE NORTHEAST ON 20' CALICHE LEASE ROAD APPROX. 0.6 OF A MILE, TURN RIGHT (EAST) ON 20' CALICHE LEASE ROAD GO APPROX. 0.4 OF A MILE, TURN RIGHT AND GO SOUTH APPROX. 142' TO THE NORTHEAST PAD CORNER FOR DUNCAN STATE COM 1H, FROM THE SOUTHEAST PAD CORNER FOLLOW ROAD SURVEY SOUTHEAST APPROX. 948' TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

MACK ENERGY CORPORATION
DUNCAN STATE COM 2H
LOCATED 1980 FT. FROM THE NORTH LINE
AND 990 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 15 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

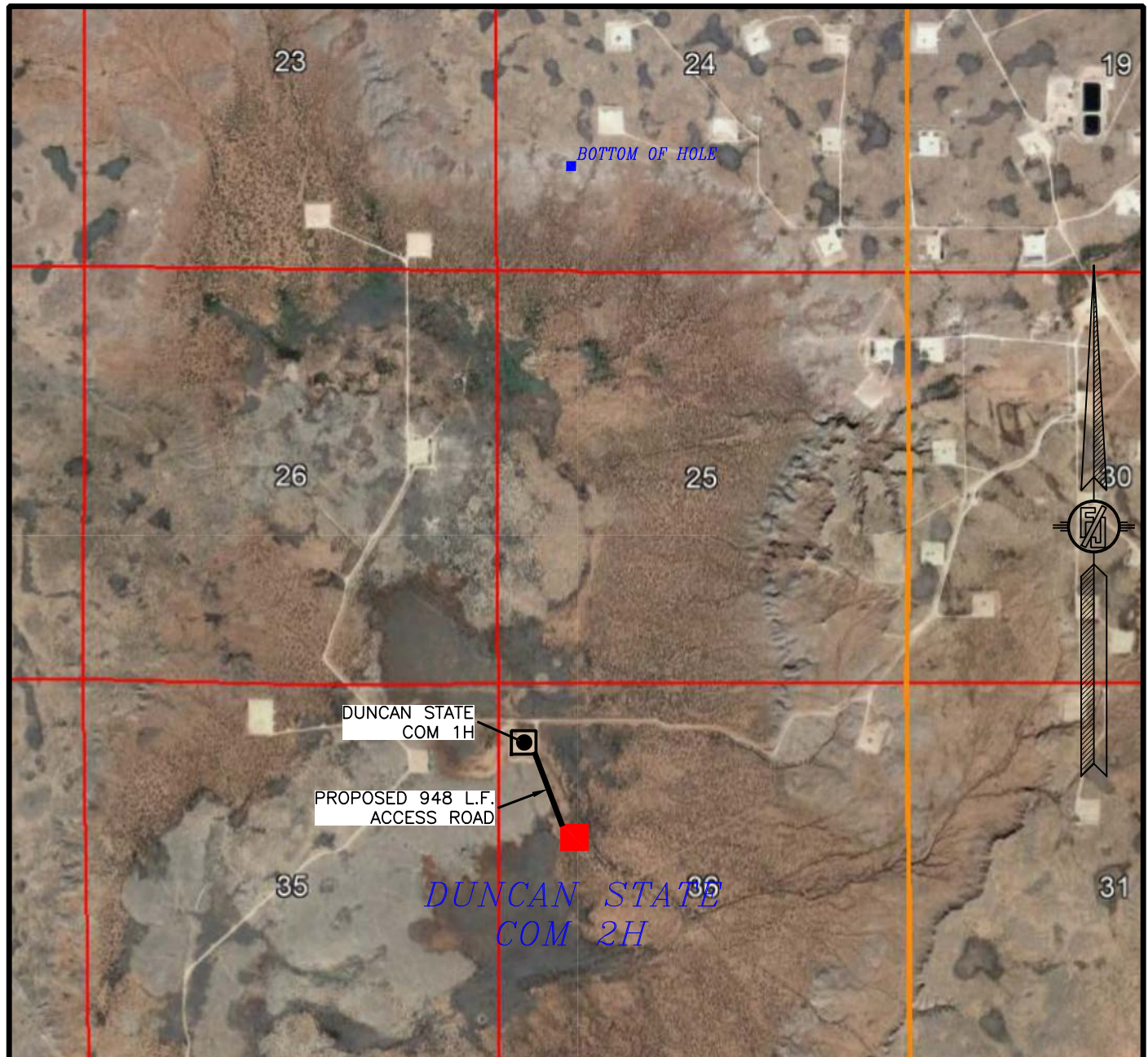
FEBRUARY 11, 2020

MADRON SURVEYING, INC. 301 SOUTH CANAL

(575) 234-3341

SURVEY NO. 7966
CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
DEC. 2019

MACK ENERGY CORPORATION
DUNCAN STATE COM 2H
LOCATED 1980 FT. FROM THE NORTH LINE
AND 990 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 15 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

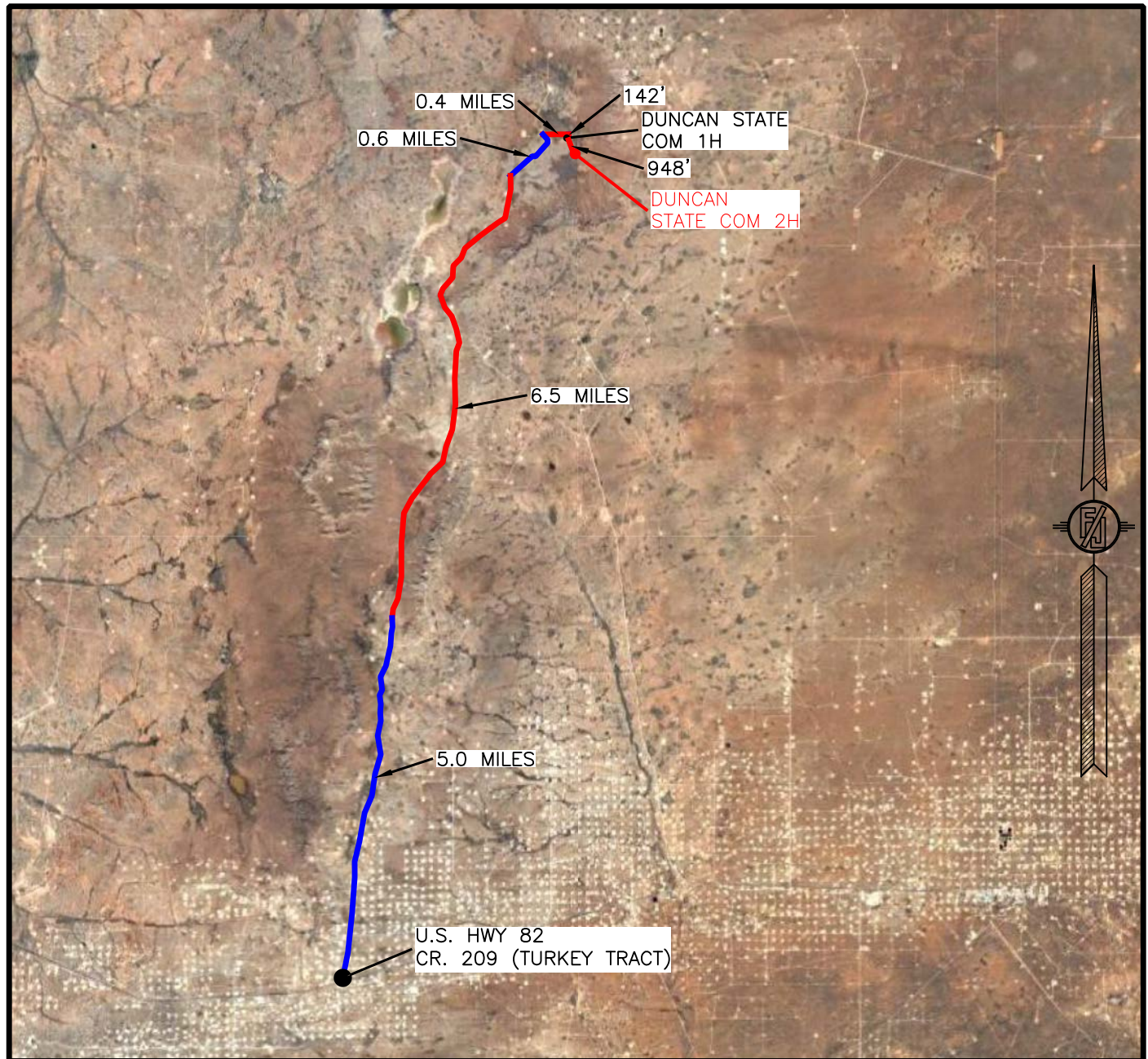
FEBRUARY 11, 2020

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SURVEY NO. 7966
CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
DEC. 2019

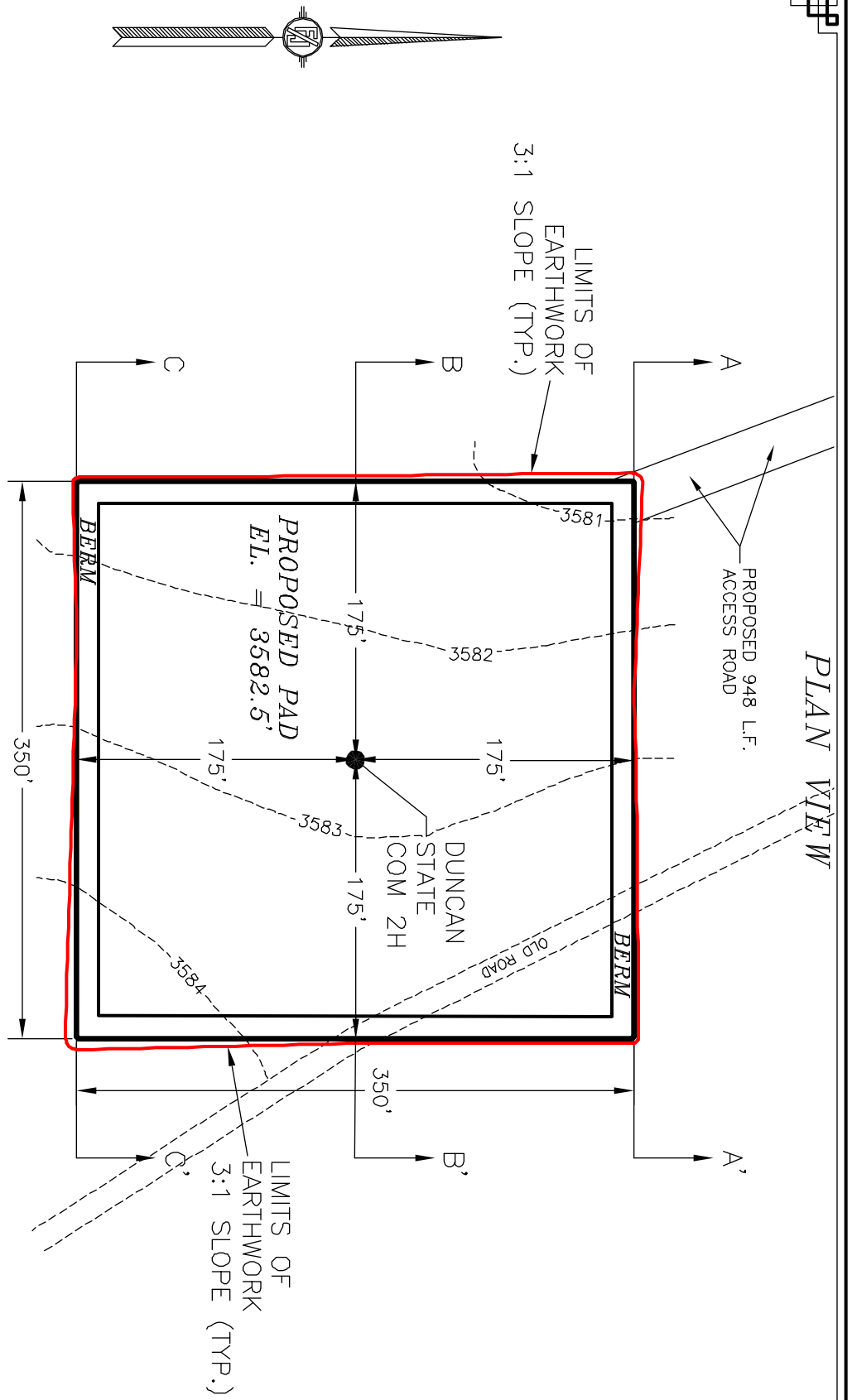
MACK ENERGY CORPORATION
DUNCAN STATE COM 2H
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RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

FEBRUARY 11, 2020

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CARLSBAD, NEW MEXICO



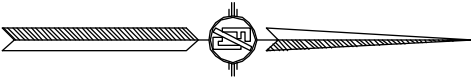
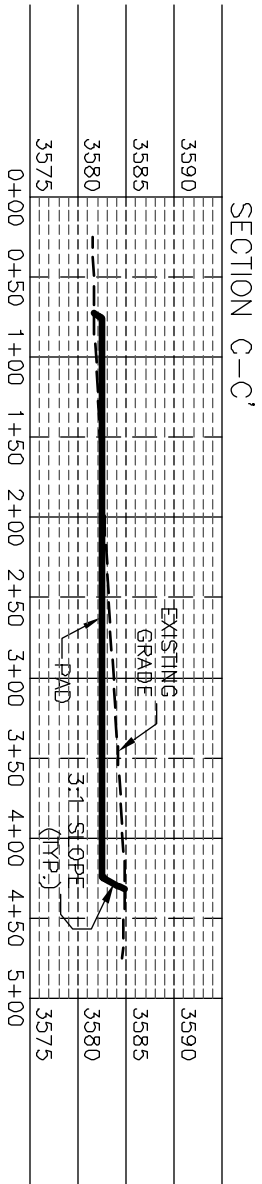
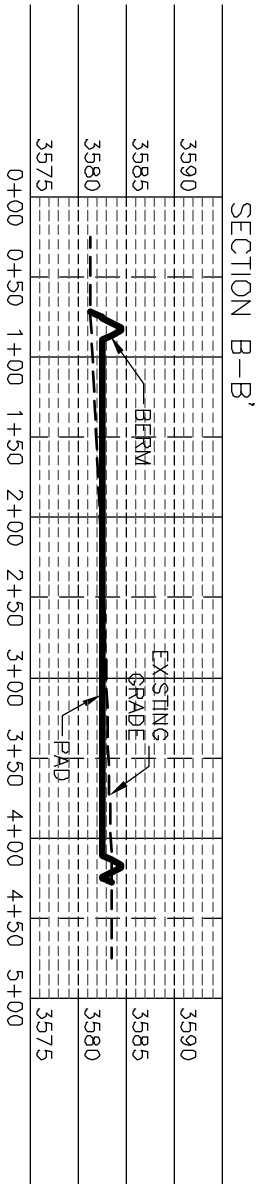
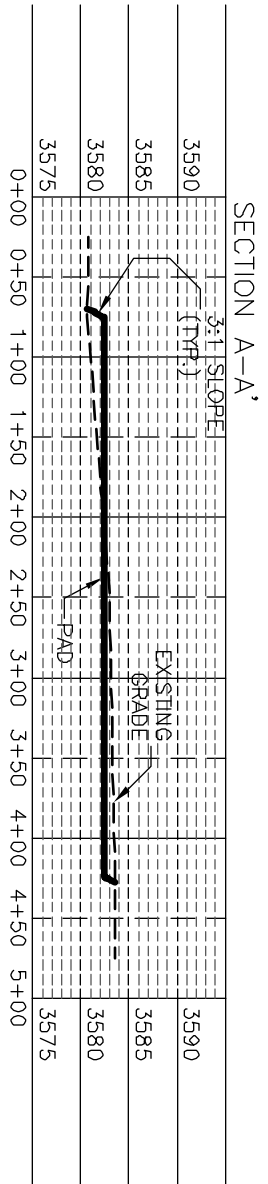
I, FILMON F. JARAMA, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFICATE NO. 10284, AM NOT RESPONSIBLE FOR THIS SURVEY, THE SURVEYED LOTS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

MACK ENERGY CORPORATION
PAD ELEVATIONS AND CROSS SECTIONS
FOR DUNCAN STATE COM 2H
SECTION 36, TOWNSHIP 16 SOUTH,
RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES ARE ESTIMATED

CUT	FILL	NET
1812 CU. YD	1726 CU. YD	86 CU. YD (CUT)

CROSS-SECTIONS



I, FILMON F. JARAMA, a New Mexico Registered Professional Surveyor, certify that the survey is true and correct to the best of my knowledge and belief, and that this survey and plan meet the minimum standards for surveying in New Mexico.

MACK ENERGY CORPORATION
PAD ELEVATIONS AND CROSS SECTIONS
FOR DUNCAN STATE COM 2H
 SECTION 36, TOWNSHIP 16 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 CHAVES COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
1812 CU. YD.	1726 CU. YD.	86 CU. YD. (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

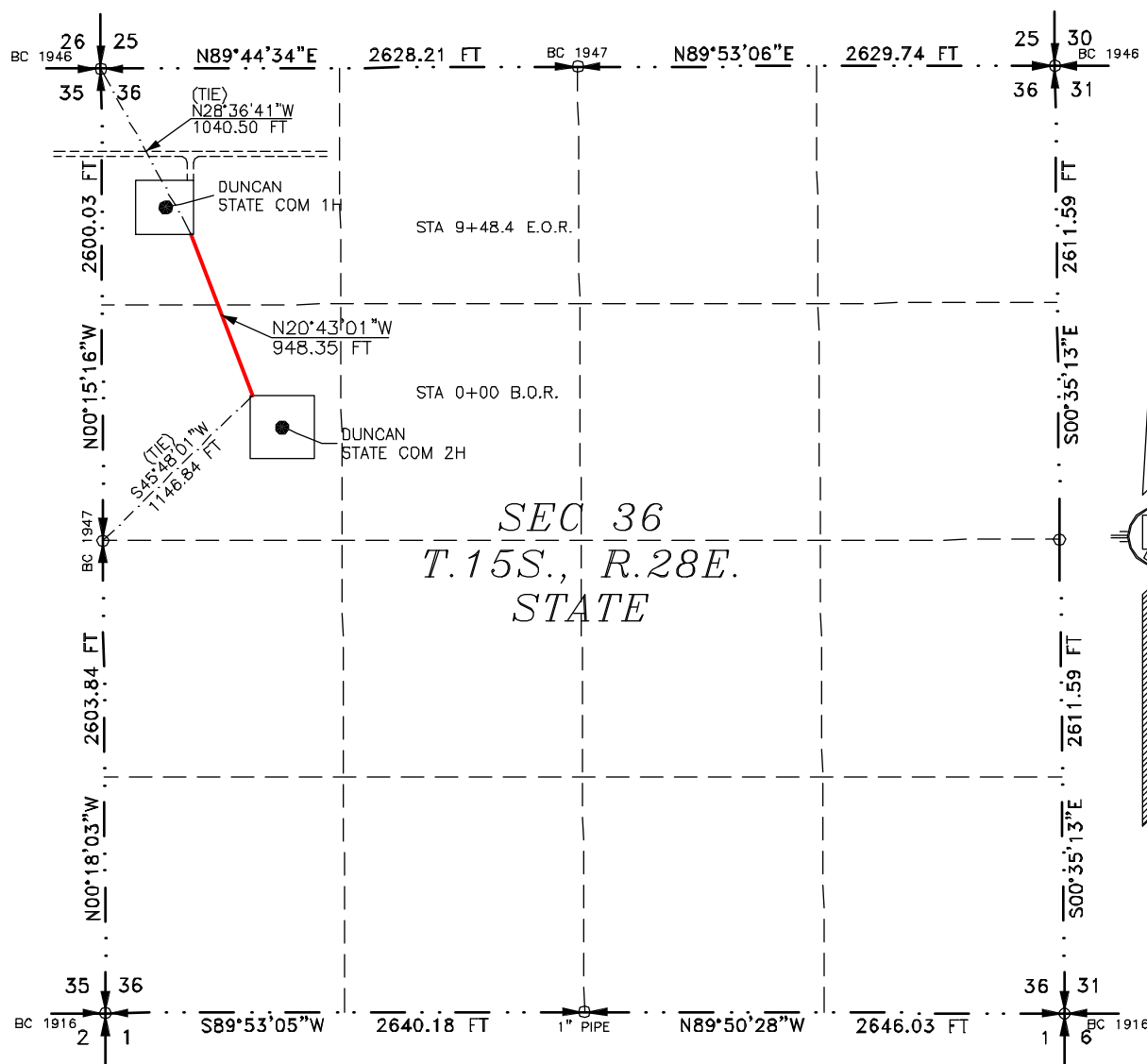


FEBRUARY 11, 2020
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO

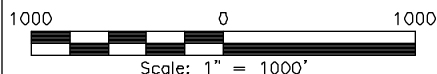
SHEET 2-2
 SURVEY NO. 7966

ACCESS ROAD PLAT
ACCESS ROAD FOR DUNCAN STATE COM 2H

MACK ENERGY CORPORATION
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
FEBRUARY 11, 2020



SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 11th DAY OF FEBRUARY 2020

FILMON F. JARAMILLO, PLS
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 7966

CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT
ACCESS ROAD FOR DUNCAN STATE COM 2H

MACK ENERGY CORPORATION
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
FEBRUARY 11, 2020

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M., CHAVES COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S45°48'01"W, A DISTANCE OF 1146.84 FEET;
 THENCE N20°43'01"W A DISTANCE OF 948.35 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 36, TOWNSHIP 15 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N28°36'41"W, A DISTANCE OF 1040.50 FEET;

SAID STRIP OF LAND BEING 948.35 FEET OR 57.48 RODS IN LENGTH, CONTAINING 0.653 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	536.54 L.F.	32.52 RODS	0.370 ACRES
NW/4 NW/4	411.81 L.F.	24.96 RODS	0.284 ACRES

GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 11th DAY OF FEBRUARY 2020

FILIMON F. JARAMILLO, PLS. 12797
 MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3341

SHEET: 2-2

MADRON SURVEYING, INC. 301 SOUTH CANAL, CARLSBAD, NEW MEXICO 88220
 (575) 234-3341

SURVEY NO. 7966

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

GAS CAPTURE PLAN

Date: 3/23/2020

☒ Original

Operator & OGRID No.: [13837] MACK ENERGY CORP

☐ Amended - Reason for
Amendment: _____

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
DUNCAN STATE COM #002H	30-005-64351	E-36-15S-28E	1980N 0990W	50	None	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to MACK ENERGY CORP and will be connected to MACK ENERGY CORP Low Pressure gathering system located in Chaves County, New Mexico. It will require 6685' of pipeline to connect the facility to Low Pressure gathering system. MACK ENERGY CORP provides (periodically) to MACK ENERGY CORP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, MACK ENERGY CORP and MACK ENERGY CORP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at MACK ENERGY CORP Processing Plant located in Sec. 06, Twn. 19S, Rng. 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form APD Comments

Permit 278653

PERMIT COMMENTS

Operator Name and Address: MACK ENERGY CORP [13837] P.O. Box 960 Artesia, NM 88211-0960		API Number: 30-005-64351
		Well: DUNCAN STATE COM #002H
Created By	Comment	Comment Date

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form APD Conditions

Permit 278653

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:		API Number:
MACK ENERGY CORP [13837]		30-005-64351
P.O. Box 960		Well:
Artesia, NM 88211-0960		DUNCAN STATE COM #002H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp			Units	feet, °/100ft		08:59 Thursday, February 20, 2020 Page 1 of 6			
Field	Round Tank			County	Chaves		Vertical Section Azimuth	359.72		
Well Name	Duncan State Com #2H			State	New Mexico		Survey Calculation Method	Minimum Curvature		
Plan	1			Country	USA		Database	Access		
Location	SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Secition 24-T15S-28E						Map Zone	UTM		Lat Long Ref
Site							Surface X	1919371.3		Surface Long
Slot Name							Surface Y	11970440.1		Surface Lat
Well Number	UWI						Surface Z	3600.7		Global Z Ref Sea Level
Project	MD/TVD Ref KB						Ground Level	3582.7		Local North Ref Grid
DIRECTIONAL WELL PLAN										
MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
*** TIE (at MD = 2073.00)										
2073.00	0.00	0.0	2073.00	0.00	0.00		0.00	1919371.30	11970440.10	1527.70
2100.00	0.00	0.0	2100.00	0.00	0.00	0.00	0.00	1919371.30	11970440.10	1500.70
2150.00	0.00	0.0	2150.00	0.00	0.00	0.00	0.00	1919371.30	11970440.10	1450.70
*** KOP 8 DEGREE (at MD = 2173.00)										
2173.00	0.00	0.0	2173.00	0.00	0.00	0.00	0.00	1919371.30	11970440.10	1427.70
2200.00	2.16	359.7	2199.99	0.51	0.00	8.00	0.51	1919371.30	11970440.61	1400.71
2250.00	6.16	359.7	2249.85	4.14	-0.02	8.00	4.14	1919371.28	11970444.24	1350.85
2300.00	10.16	359.7	2299.34	11.23	-0.05	8.00	11.23	1919371.25	11970451.33	1301.36
2350.00	14.16	359.7	2348.20	21.76	-0.11	8.00	21.76	1919371.19	11970461.86	1252.50
2400.00	18.16	359.7	2396.22	35.67	-0.17	8.00	35.67	1919371.13	11970475.77	1204.48
2450.00	22.16	359.7	2443.15	52.90	-0.26	8.00	52.90	1919371.04	11970493.00	1157.55
2500.00	26.16	359.7	2488.76	73.36	-0.36	8.00	73.36	1919370.94	11970513.46	1111.94
2550.00	30.16	359.7	2532.83	96.95	-0.47	8.00	96.95	1919370.83	11970537.05	1067.87
2600.00	34.16	359.7	2575.15	123.56	-0.60	8.00	123.56	1919370.70	11970563.66	1025.55
2650.00	38.16	359.7	2615.51	153.06	-0.75	8.00	153.06	1919370.55	11970593.16	985.19
2700.00	42.16	359.7	2653.71	185.30	-0.91	8.00	185.30	1919370.39	11970625.40	946.99
2750.00	46.16	359.7	2689.58	220.12	-1.08	8.00	220.13	1919370.22	11970660.22	911.12
2800.00	50.16	359.7	2722.92	257.37	-1.26	8.00	257.37	1919370.04	11970697.47	877.78
2850.00	54.16	359.7	2753.59	296.84	-1.45	8.00	296.85	1919369.85	11970736.94	847.11
*** 55 DEGREE TANGENT (at MD = 2860.50)										
2860.50	55.00	359.7	2759.67	305.40	-1.49	8.00	305.40	1919369.81	11970745.50	841.03
2900.00	55.00	359.7	2782.33	337.76	-1.65	0.00	337.76	1919369.65	11970777.86	818.37
2950.00	55.00	359.7	2811.01	378.71	-1.85	0.00	378.72	1919369.45	11970818.81	789.69
3000.00	55.00	359.7	2839.69	419.67	-2.05	0.00	419.68	1919369.25	11970859.77	761.01
*** 12 DEGREE BUILD (at MD = 3010.50)										
3010.50	55.00	359.7	2845.71	428.27	-2.09	0.00	428.28	1919369.21	11970868.37	754.99
3050.00	59.74	359.7	2867.00	461.53	-2.26	12.00	461.53	1919369.04	11970901.63	733.70
3100.00	65.74	359.7	2889.89	505.95	-2.47	12.00	505.96	1919368.83	11970946.05	710.81
3150.00	71.74	359.7	2908.02	552.53	-2.70	12.00	552.53	1919368.60	11970992.63	692.68
3200.00	77.74	359.7	2921.17	600.74	-2.94	12.00	600.75	1919368.36	11971040.84	679.53
3250.00	83.74	359.7	2929.21	650.07	-3.18	12.00	650.08	1919368.12	11971090.17	671.49
3300.00	89.74	359.7	2932.05	699.96	-3.42	12.00	699.97	1919367.88	11971140.06	668.65
*** LANDING POINT (at MD = 3303.83)										
3303.83	90.20	359.7	2932.06	703.80	-3.44	12.00	703.81	1919367.86	11971143.90	668.64
3350.00	90.20	359.7	2931.90	749.96	-3.67	0.00	749.97	1919367.64	11971190.06	668.80
3400.00	90.20	359.7	2931.72	799.96	-3.91	0.00	799.97	1919367.39	11971240.06	668.98
3450.00	90.20	359.7	2931.55	849.96	-4.15	0.00	849.97	1919367.15	11971290.06	669.15
3500.00	90.20	359.7	2931.37	899.96	-4.40	0.00	899.97	1919366.90	11971340.06	669.33

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp			Units	feet, °/100ft		08:59 Thursday, February 20, 2020 Page 2 of 6			
Field	Round Tank			County	Chaves		Vertical Section Azimuth 359.72			
Well Name	Duncan State Com #2H			State	New Mexico		Survey Calculation Method Minimum Curvature			
Plan	1			Country	USA		Database Access			
Location		SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Secition 24-T15S-28E				Map Zone	UTM		Lat Long Ref	
Site					Surface X 1919371.3		Surface Long			
Slot Name					Surface Y 11970440.1		Surface Lat			
Well Number					Surface Z 3600.7		Global Z Ref Sea Level			
Project	MD/TVD Ref KB				Ground Level 3582.7		Local North Ref Grid			
DIRECTIONAL WELL PLAN										
MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
3550.00	90.20	359.7	2931.20	949.96	-4.64	0.00	949.97	1919366.66	11971390.06	669.50
3600.00	90.20	359.7	2931.02	999.96	-4.89	0.00	999.97	1919366.41	11971440.06	669.68
3650.00	90.20	359.7	2930.85	1049.96	-5.13	0.00	1049.97	1919366.17	11971490.06	669.85
3700.00	90.20	359.7	2930.67	1099.96	-5.38	0.00	1099.97	1919365.92	11971540.06	670.03
3750.00	90.20	359.7	2930.50	1149.96	-5.62	0.00	1149.97	1919365.68	11971590.06	670.20
3800.00	90.20	359.7	2930.32	1199.95	-5.86	0.00	1199.97	1919365.44	11971640.05	670.38
3850.00	90.20	359.7	2930.15	1249.95	-6.11	0.00	1249.97	1919365.19	11971690.05	670.55
3900.00	90.20	359.7	2929.98	1299.95	-6.35	0.00	1299.97	1919364.95	11971740.05	670.72
3950.00	90.20	359.7	2929.80	1349.95	-6.60	0.00	1349.97	1919364.70	11971790.05	670.90
4000.00	90.20	359.7	2929.63	1399.95	-6.84	0.00	1399.97	1919364.46	11971840.05	671.07
4050.00	90.20	359.7	2929.45	1449.95	-7.09	0.00	1449.97	1919364.21	11971890.05	671.25
4100.00	90.20	359.7	2929.28	1499.95	-7.33	0.00	1499.97	1919363.97	11971940.05	671.42
4150.00	90.20	359.7	2929.10	1549.95	-7.57	0.00	1549.97	1919363.73	11971990.05	671.60
4200.00	90.20	359.7	2928.93	1599.95	-7.82	0.00	1599.97	1919363.48	11972040.05	671.77
4250.00	90.20	359.7	2928.75	1649.95	-8.06	0.00	1649.97	1919363.24	11972090.05	671.95
4300.00	90.20	359.7	2928.58	1699.95	-8.31	0.00	1699.97	1919362.99	11972140.05	672.12
4350.00	90.20	359.7	2928.40	1749.94	-8.55	0.00	1749.97	1919362.75	11972190.04	672.30
4400.00	90.20	359.7	2928.23	1799.94	-8.80	0.00	1799.97	1919362.50	11972240.04	672.47
4450.00	90.20	359.7	2928.06	1849.94	-9.04	0.00	1849.97	1919362.26	11972290.04	672.64
4500.00	90.20	359.7	2927.88	1899.94	-9.28	0.00	1899.96	1919362.02	11972340.04	672.82
4550.00	90.20	359.7	2927.71	1949.94	-9.53	0.00	1949.96	1919361.77	11972390.04	672.99
4600.00	90.20	359.7	2927.53	1999.94	-9.77	0.00	1999.96	1919361.53	11972440.04	673.17
4650.00	90.20	359.7	2927.36	2049.94	-10.02	0.00	2049.96	1919361.28	11972490.04	673.34
4700.00	90.20	359.7	2927.18	2099.94	-10.26	0.00	2099.96	1919361.04	11972540.04	673.52
4750.00	90.20	359.7	2927.01	2149.94	-10.51	0.00	2149.96	1919360.79	11972590.04	673.69
4800.00	90.20	359.7	2926.83	2199.94	-10.75	0.00	2199.96	1919360.55	11972640.04	673.87
4850.00	90.20	359.7	2926.66	2249.94	-11.00	0.00	2249.96	1919360.30	11972690.04	674.04
4900.00	90.20	359.7	2926.48	2299.93	-11.24	0.00	2299.96	1919360.06	11972740.03	674.22
4950.00	90.20	359.7	2926.31	2349.93	-11.48	0.00	2349.96	1919359.82	11972790.03	674.39
5000.00	90.20	359.7	2926.14	2399.93	-11.73	0.00	2399.96	1919359.57	11972840.03	674.56
5050.00	90.20	359.7	2925.96	2449.93	-11.97	0.00	2449.96	1919359.33	11972890.03	674.74
5100.00	90.20	359.7	2925.79	2499.93	-12.22	0.00	2499.96	1919359.08	11972940.03	674.91
5150.00	90.20	359.7	2925.61	2549.93	-12.46	0.00	2549.96	1919358.84	11972990.03	675.09
5200.00	90.20	359.7	2925.44	2599.93	-12.71	0.00	2599.96	1919358.59	11973040.03	675.26
5250.00	90.20	359.7	2925.26	2649.93	-12.95	0.00	2649.96	1919358.35	11973090.03	675.44
5300.00	90.20	359.7	2925.09	2699.93	-13.19	0.00	2699.96	1919358.11	11973140.03	675.61
5350.00	90.20	359.7	2924.91	2749.93	-13.44	0.00	2749.96	1919357.86	11973190.03	675.79

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp	Units	feet, °/100ft	08:59 Thursday, February 20, 2020	Page 3 of 6
Field	Round Tank	County	Chaves	Vertical Section Azimuth	359.72
Well Name	Duncan State Com #2H	State	New Mexico	Survey Calculation Method	Minimum Curvature
Plan	1	Country	USA	Database	Access

Location	SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Section 24-T15S-28E			Map Zone	UTM	Lat Long Ref	
Site				Surface X	1919371.3	Surface Long	
Slot Name		UWI		Surface Y	11970440.1	Surface Lat	
Well Number		API		Surface Z	3600.7	Global Z Ref	Sea Level
Project		MD/TVD Ref	KB	Ground Level	3582.7	Local North Ref	Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
5400.00	90.20	359.7	2924.74	2799.93	-13.68	0.00	2799.96	1919357.62	11973240.03	675.96
5450.00	90.20	359.7	2924.57	2849.93	-13.93	0.00	2849.96	1919357.37	11973290.03	676.14
5500.00	90.20	359.7	2924.39	2899.92	-14.17	0.00	2899.96	1919357.13	11973340.02	676.31
5550.00	90.20	359.7	2924.22	2949.92	-14.42	0.00	2949.96	1919356.88	11973390.02	676.48
5600.00	90.20	359.7	2924.04	2999.92	-14.66	0.00	2999.96	1919356.64	11973440.02	676.66
5650.00	90.20	359.7	2923.87	3049.92	-14.90	0.00	3049.96	1919356.40	11973490.02	676.83
5700.00	90.20	359.7	2923.69	3099.92	-15.15	0.00	3099.96	1919356.15	11973540.02	677.01
5750.00	90.20	359.7	2923.52	3149.92	-15.39	0.00	3149.96	1919355.91	11973590.02	677.18
5800.00	90.20	359.7	2923.34	3199.92	-15.64	0.00	3199.96	1919355.66	11973640.02	677.36
5850.00	90.20	359.7	2923.17	3249.92	-15.88	0.00	3249.96	1919355.42	11973690.02	677.53
5900.00	90.20	359.7	2922.99	3299.92	-16.13	0.00	3299.96	1919355.17	11973740.02	677.71
5950.00	90.20	359.7	2922.82	3349.92	-16.37	0.00	3349.96	1919354.93	11973790.02	677.88
6000.00	90.20	359.7	2922.65	3399.92	-16.62	0.00	3399.96	1919354.68	11973840.02	678.05
6050.00	90.20	359.7	2922.47	3449.91	-16.86	0.00	3449.96	1919354.44	11973890.01	678.23
6100.00	90.20	359.7	2922.30	3499.91	-17.10	0.00	3499.96	1919354.20	11973940.01	678.40
6150.00	90.20	359.7	2922.12	3549.91	-17.35	0.00	3549.95	1919353.95	11973990.01	678.58
6200.00	90.20	359.7	2921.95	3599.91	-17.59	0.00	3599.95	1919353.71	11974040.01	678.75
6250.00	90.20	359.7	2921.77	3649.91	-17.84	0.00	3649.95	1919353.46	11974090.01	678.93
6300.00	90.20	359.7	2921.60	3699.91	-18.08	0.00	3699.95	1919353.22	11974140.01	679.10
6350.00	90.20	359.7	2921.42	3749.91	-18.33	0.00	3749.95	1919352.97	11974190.01	679.28
6400.00	90.20	359.7	2921.25	3799.91	-18.57	0.00	3799.95	1919352.73	11974240.01	679.45
6450.00	90.20	359.7	2921.07	3849.91	-18.81	0.00	3849.95	1919352.49	11974290.01	679.63
6500.00	90.20	359.7	2920.90	3899.91	-19.06	0.00	3899.95	1919352.24	11974340.01	679.80
6550.00	90.20	359.7	2920.73	3949.91	-19.30	0.00	3949.95	1919352.00	11974390.01	679.97
6600.00	90.20	359.7	2920.55	3999.90	-19.55	0.00	3999.95	1919351.75	11974440.00	680.15
6650.00	90.20	359.7	2920.38	4049.90	-19.79	0.00	4049.95	1919351.51	11974490.00	680.32
6700.00	90.20	359.7	2920.20	4099.90	-20.04	0.00	4099.95	1919351.26	11974540.00	680.50
6750.00	90.20	359.7	2920.03	4149.90	-20.28	0.00	4149.95	1919351.02	11974590.00	680.67
6800.00	90.20	359.7	2919.85	4199.90	-20.52	0.00	4199.95	1919350.78	11974640.00	680.85
6850.00	90.20	359.7	2919.68	4249.90	-20.77	0.00	4249.95	1919350.53	11974690.00	681.02
6900.00	90.20	359.7	2919.50	4299.90	-21.01	0.00	4299.95	1919350.29	11974740.00	681.20
6950.00	90.20	359.7	2919.33	4349.90	-21.26	0.00	4349.95	1919350.04	11974790.00	681.37
7000.00	90.20	359.7	2919.15	4399.90	-21.50	0.00	4399.95	1919349.80	11974840.00	681.55
7050.00	90.20	359.7	2918.98	4449.90	-21.75	0.00	4449.95	1919349.55	11974890.00	681.72
7100.00	90.20	359.7	2918.81	4499.90	-21.99	0.00	4499.95	1919349.31	11974940.00	681.89
7150.00	90.20	359.7	2918.63	4549.89	-22.24	0.00	4549.95	1919349.06	11974989.99	682.07
7200.00	90.20	359.7	2918.46	4599.89	-22.48	0.00	4599.95	1919348.82	11975039.99	682.24

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp	Units	feet, °/100ft	08:59 Thursday, February 20, 2020	Page 4 of 6
Field	Round Tank	County	Chaves	Vertical Section Azimuth	359.72
Well Name	Duncan State Com #2H	State	New Mexico	Survey Calculation Method	Minimum Curvature
Plan	1	Country	USA	Database	Access

Location	SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Section 24-T15S-28E			Map Zone	UTM	Lat Long Ref	
Site				Surface X	1919371.3	Surface Long	
Slot Name		UWI		Surface Y	11970440.1	Surface Lat	
Well Number		API		Surface Z	3600.7	Global Z Ref	Sea Level
Project		MD/TVD Ref	KB	Ground Level	3582.7	Local North Ref	Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
7250.00	90.20	359.7	2918.28	4649.89	-22.72	0.00	4649.95	1919348.58	11975089.99	682.42
7300.00	90.20	359.7	2918.11	4699.89	-22.97	0.00	4699.95	1919348.33	11975139.99	682.59
7350.00	90.20	359.7	2917.93	4749.89	-23.21	0.00	4749.95	1919348.09	11975189.99	682.77
7400.00	90.20	359.7	2917.76	4799.89	-23.46	0.00	4799.95	1919347.84	11975239.99	682.94
7450.00	90.20	359.7	2917.58	4849.89	-23.70	0.00	4849.95	1919347.60	11975289.99	683.12
7500.00	90.20	359.7	2917.41	4899.89	-23.95	0.00	4899.95	1919347.35	11975339.99	683.29
7550.00	90.20	359.7	2917.23	4949.89	-24.19	0.00	4949.95	1919347.11	11975389.99	683.47
7600.00	90.20	359.7	2917.06	4999.89	-24.43	0.00	4999.95	1919346.87	11975439.99	683.64
7650.00	90.20	359.7	2916.89	5049.89	-24.68	0.00	5049.95	1919346.62	11975489.99	683.81
7700.00	90.20	359.7	2916.71	5099.88	-24.92	0.00	5099.95	1919346.38	11975539.98	683.99
7750.00	90.20	359.7	2916.54	5149.88	-25.17	0.00	5149.95	1919346.13	11975589.98	684.16
7800.00	90.20	359.7	2916.36	5199.88	-25.41	0.00	5199.94	1919345.89	11975639.98	684.34
7850.00	90.20	359.7	2916.19	5249.88	-25.66	0.00	5249.94	1919345.64	11975689.98	684.51
7900.00	90.20	359.7	2916.01	5299.88	-25.90	0.00	5299.94	1919345.40	11975739.98	684.69
7950.00	90.20	359.7	2915.84	5349.88	-26.14	0.00	5349.94	1919345.16	11975789.98	684.86
8000.00	90.20	359.7	2915.66	5399.88	-26.39	0.00	5399.94	1919344.91	11975839.98	685.04
8050.00	90.20	359.7	2915.49	5449.88	-26.63	0.00	5449.94	1919344.67	11975889.98	685.21
8100.00	90.20	359.7	2915.31	5499.88	-26.88	0.00	5499.94	1919344.42	11975939.98	685.39
8150.00	90.20	359.7	2915.14	5549.88	-27.12	0.00	5549.94	1919344.18	11975989.98	685.56
8200.00	90.20	359.7	2914.97	5599.88	-27.37	0.00	5599.94	1919343.93	11976039.98	685.73
8250.00	90.20	359.7	2914.79	5649.87	-27.61	0.00	5649.94	1919343.69	11976089.97	685.91
8300.00	90.20	359.7	2914.62	5699.87	-27.86	0.00	5699.94	1919343.44	11976139.97	686.08
8350.00	90.20	359.7	2914.44	5749.87	-28.10	0.00	5749.94	1919343.20	11976189.97	686.26
8400.00	90.20	359.7	2914.27	5799.87	-28.34	0.00	5799.94	1919342.96	11976239.97	686.43
8450.00	90.20	359.7	2914.09	5849.87	-28.59	0.00	5849.94	1919342.71	11976289.97	686.61
8500.00	90.20	359.7	2913.92	5899.87	-28.83	0.00	5899.94	1919342.47	11976339.97	686.78
8550.00	90.20	359.7	2913.74	5949.87	-29.08	0.00	5949.94	1919342.22	11976389.97	686.96
8600.00	90.20	359.7	2913.57	5999.87	-29.32	0.00	5999.94	1919341.98	11976439.97	687.13
8650.00	90.20	359.7	2913.39	6049.87	-29.57	0.00	6049.94	1919341.73	11976489.97	687.31
8700.00	90.20	359.7	2913.22	6099.87	-29.81	0.00	6099.94	1919341.49	11976539.97	687.48
8750.00	90.20	359.7	2913.05	6149.87	-30.05	0.00	6149.94	1919341.25	11976589.97	687.65
8800.00	90.20	359.7	2912.87	6199.86	-30.30	0.00	6199.94	1919341.00	11976639.96	687.83
8850.00	90.20	359.7	2912.70	6249.86	-30.54	0.00	6249.94	1919340.76	11976689.96	688.00
8900.00	90.20	359.7	2912.52	6299.86	-30.79	0.00	6299.94	1919340.51	11976739.96	688.18
8950.00	90.20	359.7	2912.35	6349.86	-31.03	0.00	6349.94	1919340.27	11976789.96	688.35
9000.00	90.20	359.7	2912.17	6399.86	-31.28	0.00	6399.94	1919340.02	11976839.96	688.53
9050.00	90.20	359.7	2912.00	6449.86	-31.52	0.00	6449.94	1919339.78	11976889.96	688.70

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp			Units	feet, °/100ft		08:59 Thursday, February 20, 2020 Page 5 of 6			
Field	Round Tank			County	Chaves		Vertical Section Azimuth	359.72		
Well Name	Duncan State Com #2H			State	New Mexico		Survey Calculation Method	Minimum Curvature		
Plan	1			Country	USA		Database	Access		
Location	SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Secition 24-T15S-28E						Map Zone	UTM		Lat Long Ref
Site							Surface X	1919371.3		Surface Long
Slot Name							Surface Y	11970440.1		Surface Lat
Well Number							Surface Z	3600.7		Global Z Ref Sea Level
Project							Ground Level	3582.7		Local North Ref Grid
DIRECTIONAL WELL PLAN										
MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
9100.00	90.20	359.7	2911.82	6499.86	-31.76	0.00	6499.94	1919339.54	11976939.96	688.88
9150.00	90.20	359.7	2911.65	6549.86	-32.01	0.00	6549.94	1919339.29	11976989.96	689.05
9200.00	90.20	359.7	2911.48	6599.86	-32.25	0.00	6599.94	1919339.05	11977039.96	689.22
9250.00	90.20	359.7	2911.30	6649.86	-32.50	0.00	6649.94	1919338.80	11977089.96	689.40
9300.00	90.20	359.7	2911.13	6699.86	-32.74	0.00	6699.94	1919338.56	11977139.96	689.57
9350.00	90.20	359.7	2910.95	6749.85	-32.99	0.00	6749.94	1919338.31	11977189.95	689.75
9400.00	90.20	359.7	2910.78	6799.85	-33.23	0.00	6799.94	1919338.07	11977239.95	689.92
9450.00	90.20	359.7	2910.60	6849.85	-33.48	0.00	6849.93	1919337.83	11977289.95	690.10
9500.00	90.20	359.7	2910.43	6899.85	-33.72	0.00	6899.93	1919337.58	11977339.95	690.27
9550.00	90.20	359.7	2910.25	6949.85	-33.96	0.00	6949.93	1919337.34	11977389.95	690.45
9600.00	90.20	359.7	2910.08	6999.85	-34.21	0.00	6999.93	1919337.09	11977439.95	690.62
9650.00	90.20	359.7	2909.90	7049.85	-34.45	0.00	7049.93	1919336.85	11977489.95	690.80
9700.00	90.20	359.7	2909.73	7099.85	-34.70	0.00	7099.93	1919336.60	11977539.95	690.97
9750.00	90.20	359.7	2909.56	7149.85	-34.94	0.00	7149.93	1919336.36	11977589.95	691.14
9800.00	90.20	359.7	2909.38	7199.85	-35.19	0.00	7199.93	1919336.11	11977639.95	691.32
9850.00	90.20	359.7	2909.21	7249.85	-35.43	0.00	7249.93	1919335.87	11977689.95	691.49
9900.00	90.20	359.7	2909.03	7299.84	-35.67	0.00	7299.93	1919335.63	11977739.94	691.67
9950.00	90.20	359.7	2908.86	7349.84	-35.92	0.00	7349.93	1919335.38	11977789.94	691.84
10000.00	90.20	359.7	2908.68	7399.84	-36.16	0.00	7399.93	1919335.14	11977839.94	692.02
10050.00	90.20	359.7	2908.51	7449.84	-36.41	0.00	7449.93	1919334.89	11977889.94	692.19
10100.00	90.20	359.7	2908.33	7499.84	-36.65	0.00	7499.93	1919334.65	11977939.94	692.37
10150.00	90.20	359.7	2908.16	7549.84	-36.90	0.00	7549.93	1919334.40	11977989.94	692.54
10200.00	90.20	359.7	2907.98	7599.84	-37.14	0.00	7599.93	1919334.16	11978039.94	692.72
10250.00	90.20	359.7	2907.81	7649.84	-37.38	0.00	7649.93	1919333.92	11978089.94	692.89
10300.00	90.20	359.7	2907.64	7699.84	-37.63	0.00	7699.93	1919333.67	11978139.94	693.06
10350.00	90.20	359.7	2907.46	7749.84	-37.87	0.00	7749.93	1919333.43	11978189.94	693.24
10400.00	90.20	359.7	2907.29	7799.84	-38.12	0.00	7799.93	1919333.18	11978239.94	693.41
10450.00	90.20	359.7	2907.11	7849.83	-38.36	0.00	7849.93	1919332.94	11978289.93	693.59
10500.00	90.20	359.7	2906.94	7899.83	-38.61	0.00	7899.93	1919332.69	11978339.93	693.76
10550.00	90.20	359.7	2906.76	7949.83	-38.85	0.00	7949.93	1919332.45	11978389.93	693.94
10600.00	90.20	359.7	2906.59	7999.83	-39.09	0.00	7999.93	1919332.21	11978439.93	694.11
10650.00	90.20	359.7	2906.41	8049.83	-39.34	0.00	8049.93	1919331.96	11978489.93	694.29
10700.00	90.20	359.7	2906.24	8099.83	-39.58	0.00	8099.93	1919331.72	11978539.93	694.46
10750.00	90.20	359.7	2906.06	8149.83	-39.83	0.00	8149.93	1919331.47	11978589.93	694.64
10800.00	90.20	359.7	2905.89	8199.83	-40.07	0.00	8199.93	1919331.23	11978639.93	694.81
10850.00	90.20	359.7	2905.72	8249.83	-40.32	0.00	8249.93	1919330.98	11978689.93	694.98
10900.00	90.20	359.7	2905.54	8299.83	-40.56	0.00	8299.93	1919330.74	11978739.93	695.16

Duncan State Com #2H, Plan 1

Operator	Mack Energy Corp	Units	feet, °/100ft	08:59 Thursday, February 20, 2020 Page 6 of 6	
Field	Round Tank	County	Chaves	Vertical Section Azimuth	359.72
Well Name	Duncan State Com #2H	State	New Mexico	Survey Calculation Method	Minimum Curvature
Plan	1	Country	USA	Database	Access
Location	SL: 1980 FNL & 990 FWL Section 36-T15S-R28E BHL: 1321 FSL & 990 FWL Section 24-T15S-28E		Map Zone	UTM	Lat Long Ref
Site			Surface X	1919371.3	Surface Long
Slot Name	UWI		Surface Y	11970440.1	Surface Lat
Well Number	API		Surface Z	3600.7	Global Z Ref Sea Level
Project	MD/TVD Ref KB		Ground Level	3582.7	Local North Ref Grid

~~DIRECTIONAL WELL PLAN~~

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
10950.00	90.20	359.7	2905.37	8349.83	-40.81	0.00	8349.93	1919330.49	11978789.93	695.33
11000.00	90.20	359.7	2905.19	8399.82	-41.05	0.00	8399.93	1919330.25	11978839.92	695.51
11050.00	90.20	359.7	2905.02	8449.82	-41.29	0.00	8449.92	1919330.01	11978889.92	695.68
11100.00	90.20	359.7	2904.84	8499.82	-41.54	0.00	8499.92	1919329.76	11978939.92	695.86
11150.00	90.20	359.7	2904.67	8549.82	-41.78	0.00	8549.92	1919329.52	11978989.92	696.03
*** TD (at MD = 11178.33)										
11178.33	90.20	359.7	2904.57	8578.16	-41.92	0.00	8578.26	1919329.38	11979018.26	696.13

Intent ☒ As Drilled ☐

API #		
Operator Name: MACK ENERGY CORPORATION	Property Name: DUNCAN STATE COM	Well Number 2H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL D	Section 36	Township 15S	Range 28E	Lot	Feet 1280	From N/S NORTH	Feet 990	From E/W WEST	County CHAVES
Latitude 32.9762055					Longitude 104.0906019				NAD 83

Last Take Point (LTP)

UL M	Section 24	Township 15S	Range 28E	Lot	Feet 1220	From N/S SOUTH	Feet 990	From E/W WEST	County CHAVES
Latitude 32.9975826					Longitude 104.0906667				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 2/20/2020

☒ Original Operator & OGRID No.: Mack Energy Corporation - 013837
☐ Amended - Reason for Amendment:

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Duncan State Com #2H		Sec.36T15S R28E	1980 FNL 990 FWL	50		

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP Midstream and will be connected to DCP Midstream low pressure gathering system located in Chaves County, New Mexico. It will require 0 (existing)' of pipeline to connect the facility to low/high pressure gathering system. Mack Energy Corporation provides (periodically) to DCP Midstream a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Mack Energy Corporation and DCP Midstream have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Midstream Linam Ranch Processing Plant located in Sec. 6, Twn. 19S, Rng. 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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