

Well Name: CAVE LION FEDERAL 26 35 5 WXY	Well Location: T26S / R35E / SEC 5 / SESE / 32.0663124 / -103.3848689	County or Parish/State: LEA / NM
Well Number: 12H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM013647, NMNM13647	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002545422	Well Status: Approved Application for Permit to Drill	Operator: MARATHON OIL PERMIAN LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 03/30/2021	Time Sundry Submitted: 05:03
Date proposed operation will begin: 05/14/2021	

Procedure Description: Marathon Oil respectfully requests to make the following changes to the above listed well: - Well Name from Cave Lion Federal 26 35 5 WXY 12H to Cave Lion 5 TB Federal 12H - Target Formation and Pool - SHL - FTP and LTP See attached for original sundry (submitted in WIS and resubmitted in AFMSS at the BLM's request), C102 Well Plat, Directional Survey and Drill Plan attachments for more details. In addition, Marathon Oil has changed the pad size and layout to better accommodate the Facility needs and disturbance footprint. The revised layout is depicted in the attached plats and was on-sited with MRO and BLM personnel on August 6th, 2019.

Surface Disturbance

Is any additional surface disturbance proposed?: Yes		
Proposed Disturbance(acres): 6	Interim Reclamation (acres): 1	Long Term Disturbance (acres): 4
Surface Disturbance: See attached.		

NOI Attachments

Procedure Description

BLM_WIS_SUB_SUNDRY_EC536185_Cave_Lion_5_WXY_Fed_12H_11.02.20_20210330165058.pdf

Surface Disturbance

FINAL_PAD_PLAT_PKG_Cave_Lion_5_Federal_12H14H15H18H_Cert_12.03.2020_20210330165157.pdf

FINAL_CUT_FILL_PKG_Cave_Lion_5_Federal_12H14H15H18H_Cert_12.03.2020_20210330165153.pdf

FINAL_RD_PLAT_CAVE_LION_5_FEDERAL_NM_LE_0003.00060_REV3_Ex_Ls_Rd_Eas_BLM_Cert_10.27.20_20210330165149.pdf

Well Name: CAVE LION FEDERAL 26 35 5 WXY	Well Location: T26S / R35E / SEC 5 / SESE / 32.0663124 / -103.3848689	County or Parish/State: LEA / NM
Well Number: 12H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM013647, NMNM13647	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002545422	Well Status: Approved Application for Permit to Drill	Operator: MARATHON OIL PERMIAN LLC

FINAL_RD_PLAT_CAVE_LION_5_FEDERAL_NM_LE_0002.00060_REV4_Prop_Ls_Rd_Eas_BLM_Cert_10.2 7.20_20210330165147.pdf

FINAL_RD_PLAT_CAVE_LION_5_FEDERAL_NM_LE_0002.00160_REV3_Prop_Ls_Rd_Eas_BLM_Cert_10.2 7.20_20210330165147.pdf

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: MELISSA SZUDERA	Signed on: MAR 30, 2021 04:52 PM
Name: MARATHON OIL PERMIAN LLC	
Title: REGULATORY COMPLIANCE REPRESENTATIVE	
Street Address: 5555 San Felipe St.	
City: Houston	State: TX
Phone: (713) 296-3179	
Email address: mszudera@marathonoil.com	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: Cody Layton	BLM POC Title: Assistant Field Manager Lands & Minerals
BLM POC Phone: 5752345959	BLM POC Email Address: clayton@blm.gov
Disposition: Approved	Disposition Date: 07/14/2021
Signature: Cody R. Layton	

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 3002545422	² Pool Code 97088	³ Pool Name WC-025 G-08 S2535340; BONE SPRING
⁴ Property Code	⁵ Property Name CAVE LION 5 TB FEDERAL	⁶ Well Number 12H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 3228'

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
P	5	26S	35E		450	SOUTH	1238	EAST	LEA

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
A	5	26S	35E		100	NORTH	330	EAST	LEA

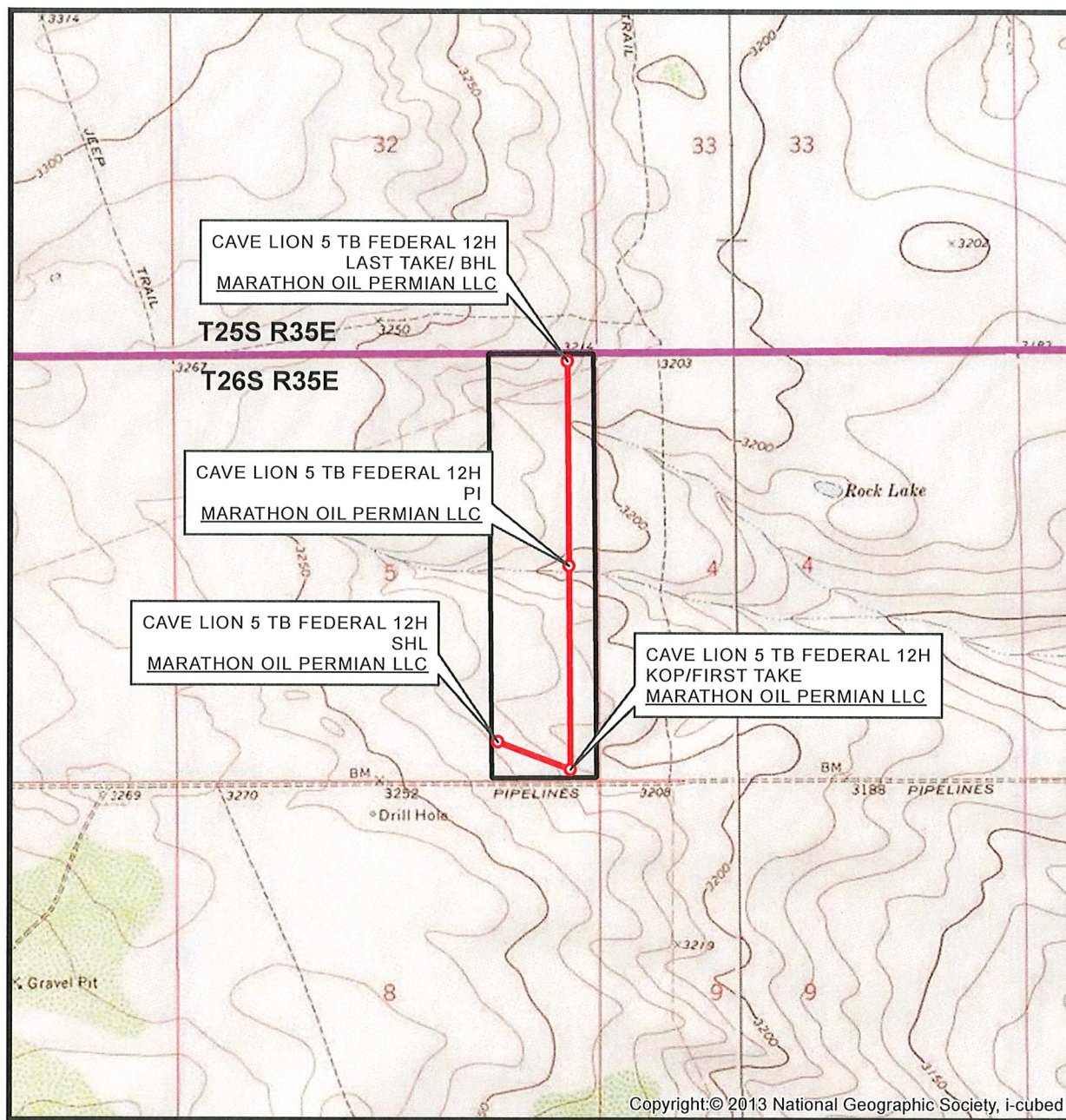
¹² Dedicated Acres 160.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

CORNER COORDINATES NAD 83, SPCS NM EAST A - X: 835038.03' / Y: 388702.32' B - X: 835012.04' / Y: 391342.22' C - X: 834984.08' / Y: 393986.54' D - X: 836304.47' / Y: 393995.08' E - X: 836332.35' / Y: 391350.69' F - X: 836356.33' / Y: 388711.16' CORNER COORDINATES NAD 27, SPCS NM EAST A - X: 793850.36' / Y: 388644.71' B - X: 793824.48' / Y: 391284.54' C - X: 793796.64' / Y: 393928.78' D - X: 795117.01' / Y: 393937.31' E - X: 795144.78' / Y: 391292.99' F - X: 795168.64' / Y: 388653.54'	LAST TAKE/ BHL 100' 330' T25S R35E T26S R35E LAST TAKE POINT/BOTTOM HOLE LOCATION 100' FNL 330' FEL, SECTION 5 NAD 83, SPCS NM EAST X: 835975.53' / Y: 393892.95' LAT: 32.07932016N / LON: 103.38205081W NAD 27, SPCS NM EAST X: 794788.07' / Y: 393835.19' LAT: 32.07919383N / LON: 103.38158805W KICK OFF POINT/FIRST TAKE POINT 100' FSL 330' FEL, SECTION 5 NAD 83, SPCS NM EAST X: 836025.43' / Y: 388808.94' LAT: 32.06534509N / LON: 103.38203443W NAD 27, SPCS NM EAST X: 794837.75' / Y: 388751.32' LAT: 32.06521869N / LON: 103.38157245W SURFACE HOLE LOCATION 450' FSL 1238' FEL, SECTION 5 NAD 83, SPCS NM EAST X: 835114.32' / Y: 389152.64' LAT: 32.06631183N / LON: 103.38496555W NAD 27, SPCS NM EAST X: 793926.66' / Y: 389095.02' LAT: 32.06618546N / LON: 103.38450341W	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. Signature: <i>Melissa Szudera</i> Date: 10/27/2020 Printed Name: Melissa Szudera E-mail Address: mszudera@marathonoil.com		
			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. OCTOBER 27, 2020 Date of Survey Signature and Seal of Professional Surveyor: <i>David W. Myers</i> Certificate Number: DAVID W. MYERS 11403	
				DAVID W. MYERS NEW MEXICO PROFESSIONAL SURVEYOR 11403

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99985058 Convergence Angle: 00°29'34.80475"

LOCATION VERIFICATION MAP



SEC. 5 TWP. 26-S RGE. 35-E
 SURVEY: N.M.P.M.
 COUNTY: LEA
 OPERATOR: MARATHON OIL PERMIAN LLC
 DESCRIPTION: 450' FSL & 1238' FEL
 ELEVATION: 3228'
 LEASE: CAVE LION 5 FEDERAL
 U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, NM, TX.

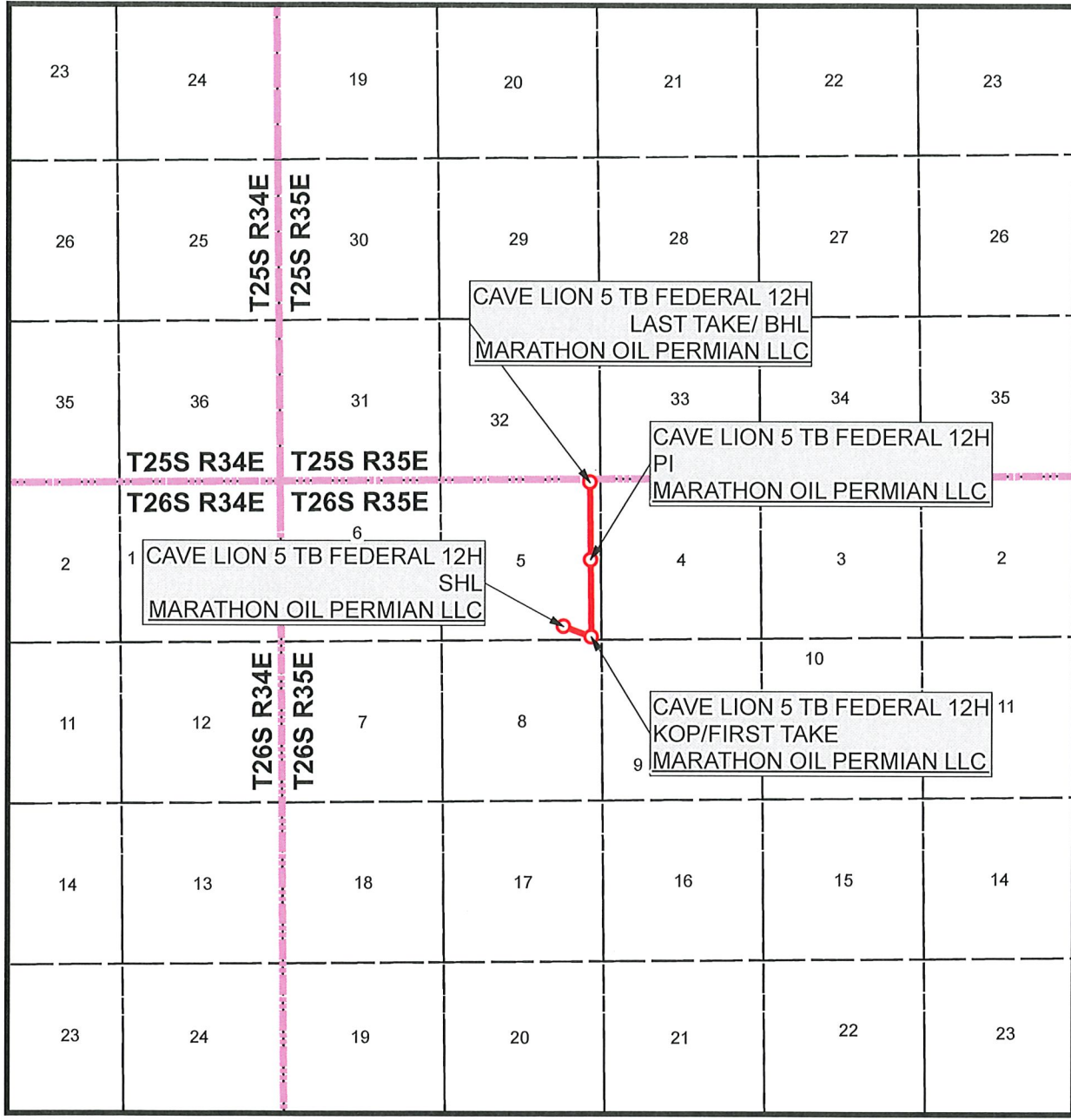
1" = 2,000'
 CONTOUR INTERVAL = 10'



SHEET 2 OF 3

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3767_006

VICINITY MAP



SEC. 5 TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.
COUNTY: LEA
OPERATOR: MARATHON OIL PERMIAN LLC
DESCRIPTION: 450' FSL & 1238' FEL
ELEVATION: 3228'
LEASE: CAVE LION 5 FEDERAL
U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, NM, TX.

1" = 1 MILE



SHEET 3 OF 3

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

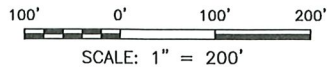
WELL PAD EXISTING TOPO

CAVE LION 5 FEDERAL
SEC. 5, TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.

COUNTY: LEA

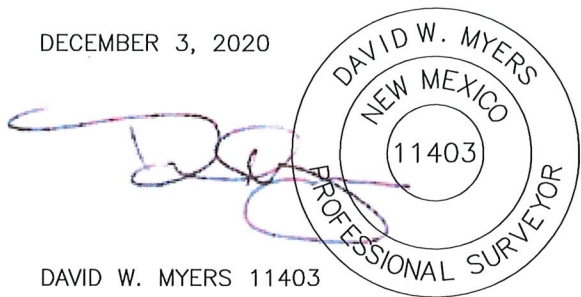
OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, N.M.



- A. CAVE LION 5 TB FEDERAL 15H
- B. CAVE LION 5 TB FEDERAL 12H
- C. CAVE LION 5 TB FEDERAL 14H
- D. CAVE LION 5 WXY FEDERAL 18H

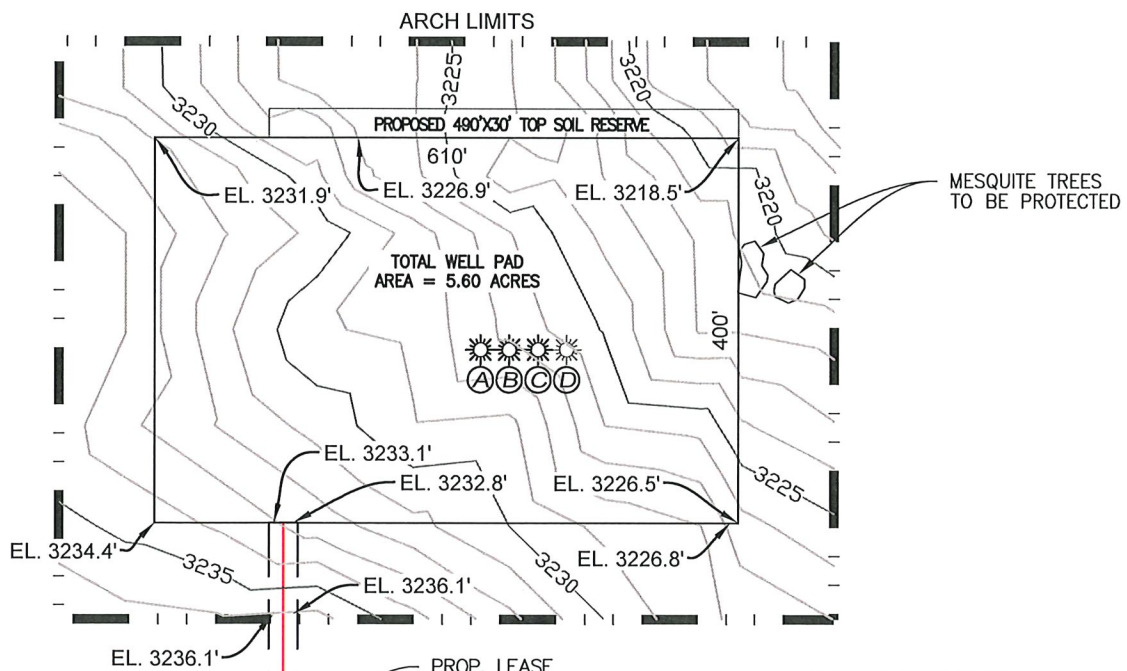
DECEMBER 3, 2020



I HEREBY CERTIFY THAT THE DIMENSIONS, EXISTING ELEVATIONS AND AREAS SHOWN HEREIN ARE BASED ON RECENT GROUND SURVEYS PERFORMED BY ME OR UNDER MY SUPERVISION RELATIVE TO ENGINEERING DESIGN DATA PROVIDED PREVIOUSLY BY OTHERS. NO WARRANTY IS EXPRESSED HEREIN REGARDING THE ENGINEERING DESIGN DATA PROVIDED.

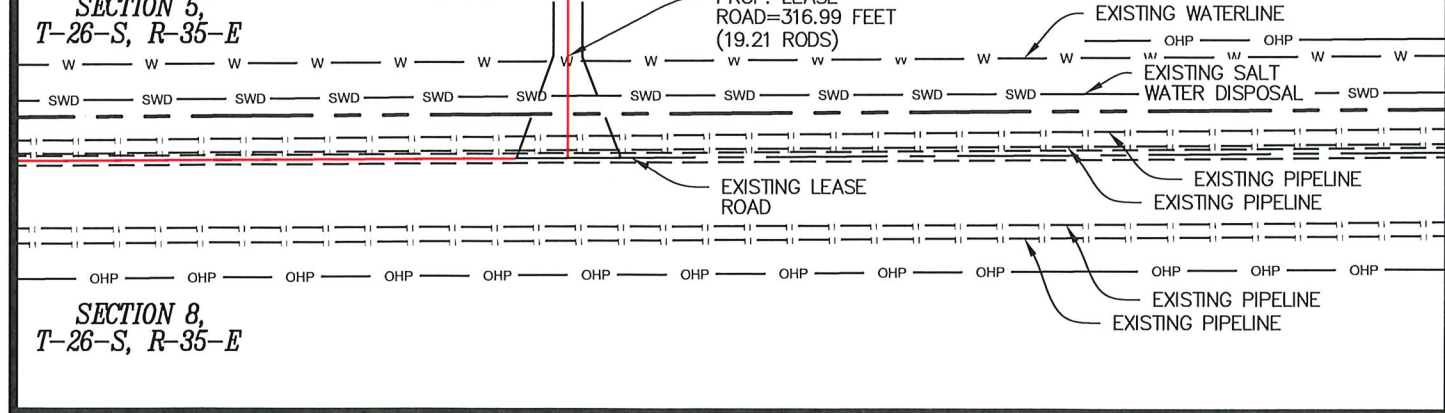


DAVID W. MYERS 11403



SECTION 5,
T-26-S, R-35-E

SECTION 8,
T-26-S, R-35-E



REV 6 12/03/2020 MWS

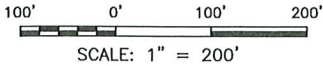
LEGEND		PIPELINE	
PROPOSED PAD SURFACE	_____	SALT WATER DISPOSAL	SWD
ARCH SURVEY LIMITS	— —	PROPERTY LINE	— P —
PROPOSED LEASE ROAD	— (red) —	PROPOSED 1' CONTOUR LINES	— (blue) —
EXIST. 1' CONTOUR LINES	— (grey) —	PROPOSED 5' CONTOUR LINES	— (pink) —
EXIST. 5' CONTOUR LINES	— (light grey) —	EROSION CONTROL FENCE	ECF
WATER LINE	— w —	OVERHEAD POWER	OHP
		FENCE	— x — x —

SHEET 1 OF 5
PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

WELL PAD CONTOURS

CAVE LION 5 FEDERAL
SEC. 5, TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.
COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, N.M.

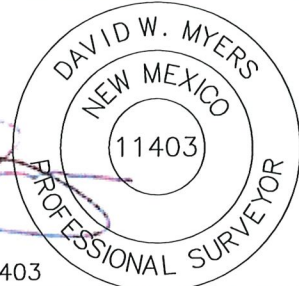


- A. CAVE LION 5 TB FEDERAL 15H
- B. CAVE LION 5 TB FEDERAL 12H
- C. CAVE LION 5 TB FEDERAL 14H
- D. CAVE LION 5 WXY FEDERAL 18H

TOTAL CUT VOLUME: 15,546.50 cu yd
TOTAL FILL VOLUME: 15,394.01 cu yd

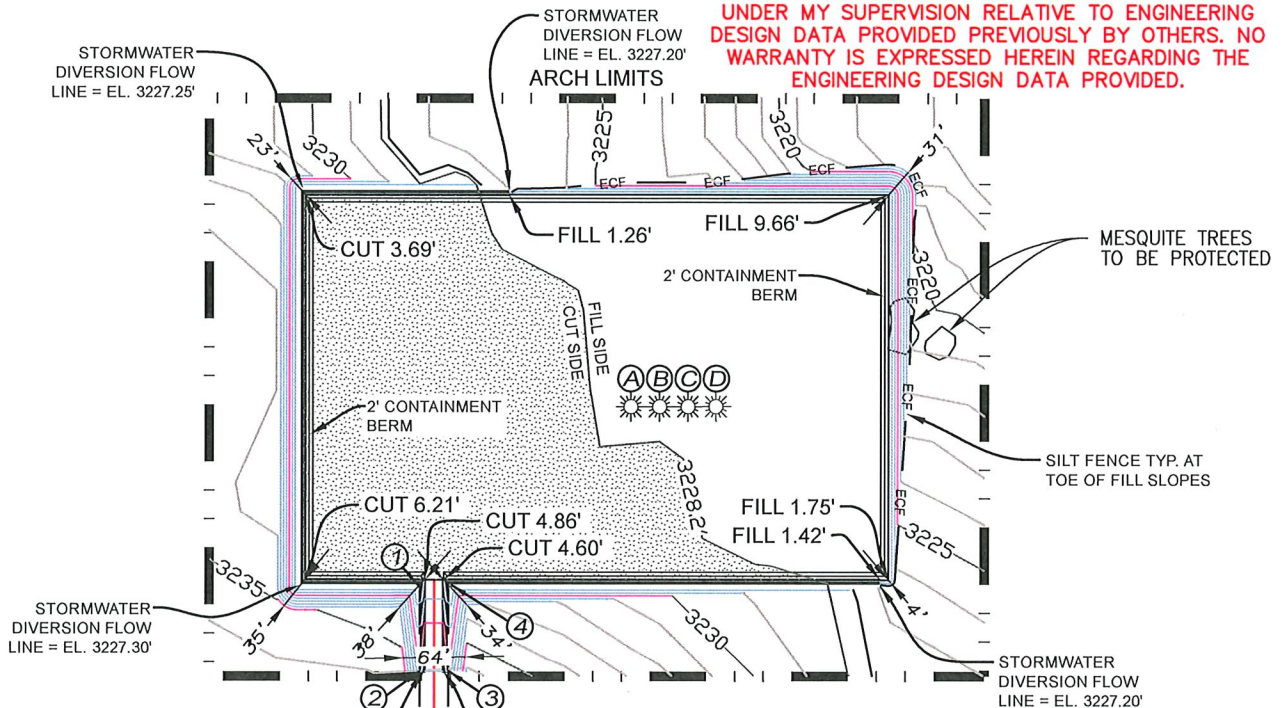
PROPOSED SHORT-TERM
DISTURBANCE AREA = 6.66 ACRES

DECEMBER 3, 2020



DAVID W. MYERS 11403

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SECTION 5,
T-26-S, R-35-E

SECTION 8,
T-26-S, R-35-E

1. STORMWATER DIVERSION FLOW LINE = EL. 3227.35'
2. STORMWATER DIVERSION FLOW LINE = EL. 3231.00'
3. STORMWATER DIVERSION FLOW LINE = EL. 3231.00'
4. STORMWATER DIVERSION FLOW LINE = EL. 3227.35'

REV 6 12/03/2020 MWS

LEGEND

- PROPOSED PAD SURFACE
- ARCH SURVEY LIMITS
- PROPOSED LEASE ROAD
- EXIST. 1' CONTOUR LINES
- EXIST. 5' CONTOUR LINES
- WATER LINE

- PIPELINE
- SALT WATER DISPOSAL
- PROPERTY LINE
- PROPOSED 1' CONTOUR LINES
- PROPOSED 5' CONTOUR LINES
- EROSION CONTROL FENCE
- OVERHEAD POWER
- FENCE

SHEET 2 OF 5
PREPARED BY:
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1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

WELL PAD CROSS SECTIONS

CAVE LION 5 FEDERAL
SEC. 5, TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.

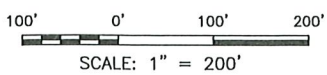
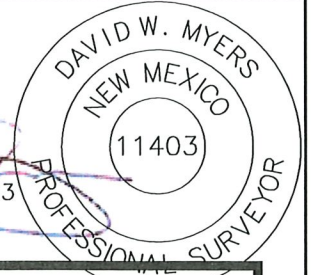
DECEMBER 3, 2020

COUNTY: LEA

DAVID W. MYERS 11403

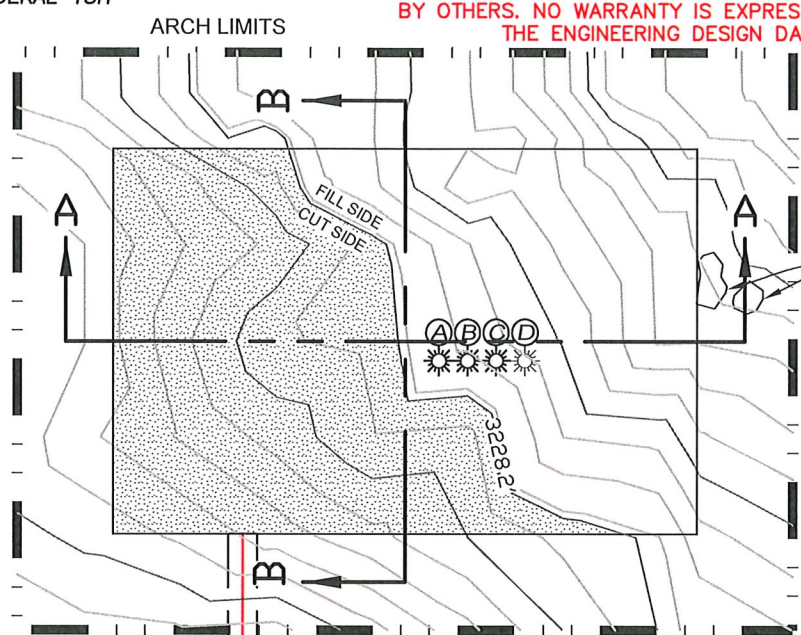
OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, N.M.

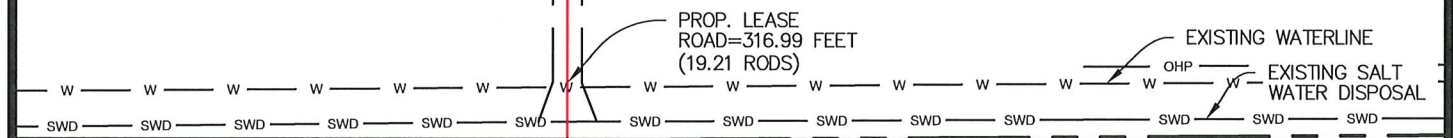


- A. CAVE LION 5 TB FEDERAL 15H
- B. CAVE LION 5 TB FEDERAL 12H
- C. CAVE LION 5 TB FEDERAL 14H
- D. CAVE LION 5 WXY FEDERAL 18H

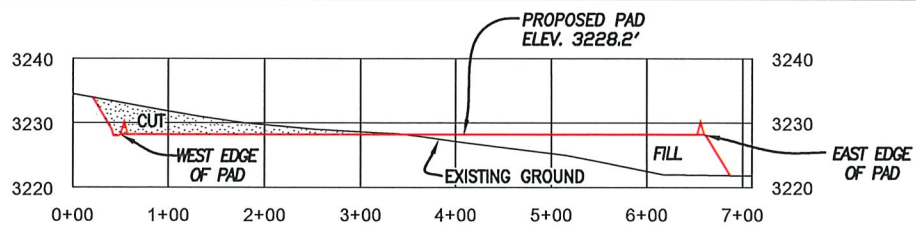
I HEREBY CERTIFY THAT THE DIMENSIONS, EXISTING ELEVATIONS AND AREAS SHOWN HEREIN ARE BASED ON RECENT GROUND SURVEYS PERFORMED BY ME OR UNDER MY SUPERVISION RELATIVE TO ENGINEERING DESIGN DATA PROVIDED PREVIOUSLY BY OTHERS. NO WARRANTY IS EXPRESSED HEREIN REGARDING THE ENGINEERING DESIGN DATA PROVIDED.



MESQUITE TREES TO BE PROTECTED



SECTION A-A



SECTION B-B

REV 6 12/03/2020 MWS

PROPOSED PAD SURFACE	—	SALT WATER DISPOSAL	— SWD —
ARCH SURVEY LIMITS	— —	PROPERTY LINE	— P —
PROPOSED LEASE ROAD	—	PROPOSED 1' CONTOUR LINES	—
EXIST. 1' CONTOUR LINES	—	PROPOSED 5' CONTOUR LINES	—
EXIST. 5' CONTOUR LINES	—	EROSION CONTROL FENCE	— ECF —
WATER LINE	— w —	STORM WATER CONTROL DIVERSION	—

HORIZONTAL: 1" = 200'
VERTICAL: 1" = 30'
SHEET 3 OF 5
PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

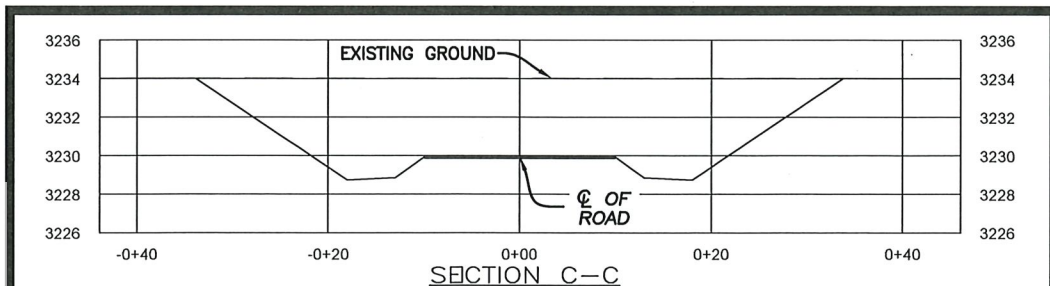
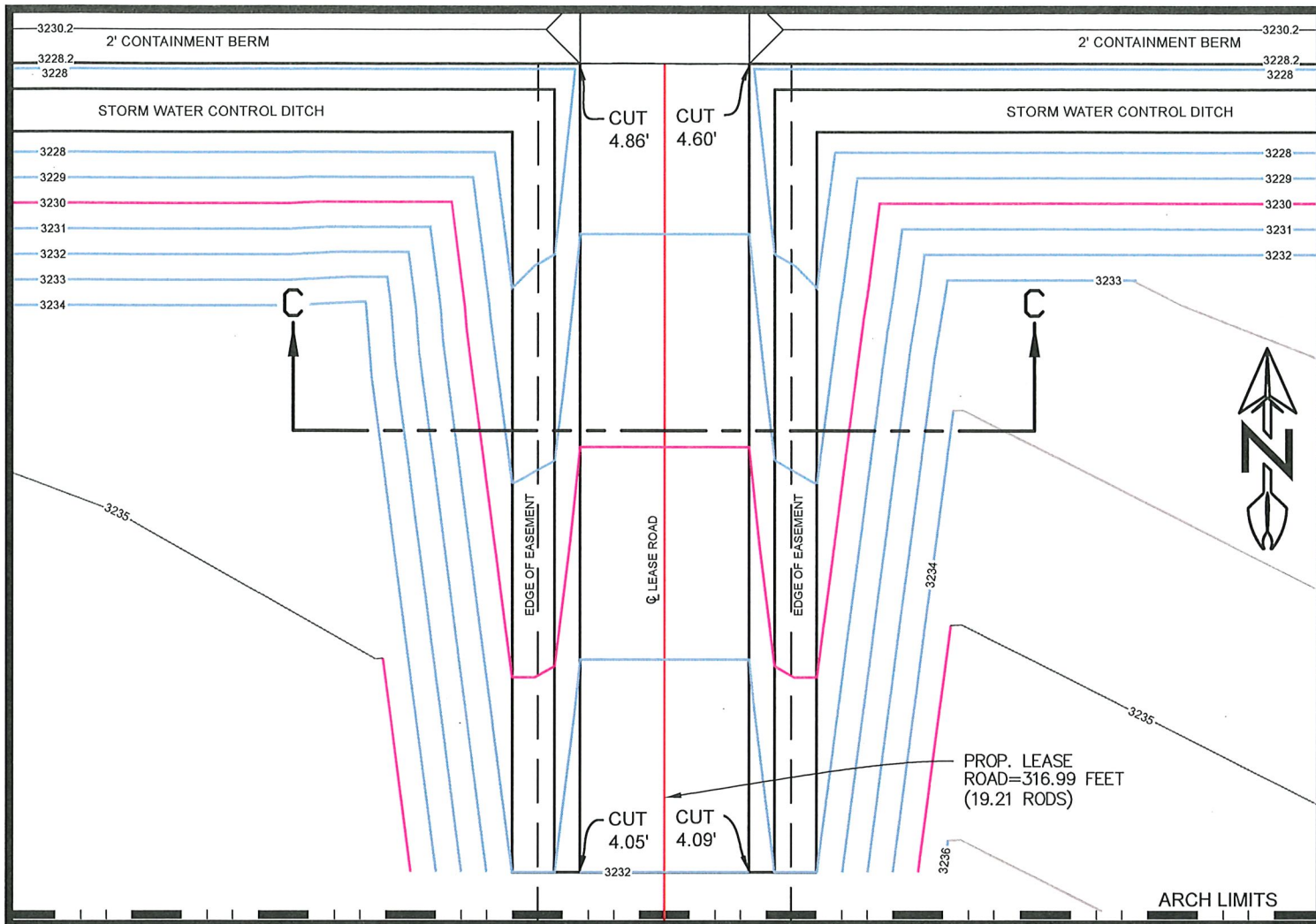
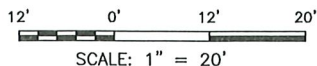
Page 9 of 31
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Released to Imaging: 9/24/2021 1:10:03 PM

PROPOSED ACCESS ROAD CROSS SECTION

CAVE LION 5 FEDERAL
SEC. 5, TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, N.M.



REV 6 12/03/2020 MWS

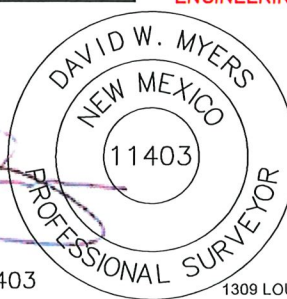
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 10'

DECEMBER 3, 2020

LEGEND	
PROPOSED PAD SURFACE	---
ARCH SURVEY LIMITS	— —
PROPOSED LEASE ROAD	—
EXIST. 1' CONTOUR LINES	—
EXIST. 5' CONTOUR LINES	—
PROPOSED 1' CONTOUR LINES	—
PROPOSED 5' CONTOUR LINES	—
EROSION CONTROL FENCE	— ECF —
STORM WATER CONTROL DIVERSION	—
DISTURBANCE AREA BOUNDARY	—

I HEREBY CERTIFY THAT THE DIMENSIONS, EXISTING ELEVATIONS AND AREAS SHOWN HEREIN ARE BASED ON RECENT GROUND SURVEYS PERFORMED BY ME OR UNDER MY SUPERVISION RELATIVE TO ENGINEERING DESIGN DATA PROVIDED PREVIOUSLY BY OTHERS. NO WARRANTY IS EXPRESSED HEREIN REGARDING THE ENGINEERING DESIGN DATA PROVIDED.

DAVID W. MYERS 11403



SHEET 4 OF 5
PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

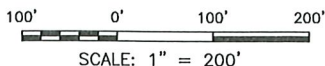
Page 10 of 31
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Released to Imaging: 9/24/2021 1:10:03 PM

INTERIM RECLAMATION PLAT

CAVE LION 5 FEDERAL
SEC. 5, TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, N.M.

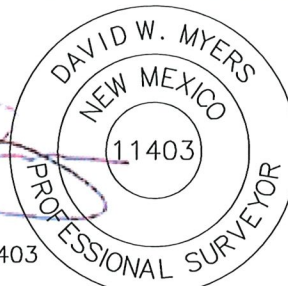


- A. CAVE LION 5 TB FEDERAL 15H
- B. CAVE LION 5 TB FEDERAL 12H
- C. CAVE LION 5 TB FEDERAL 14H
- D. CAVE LION 5 WXY FEDERAL 18H

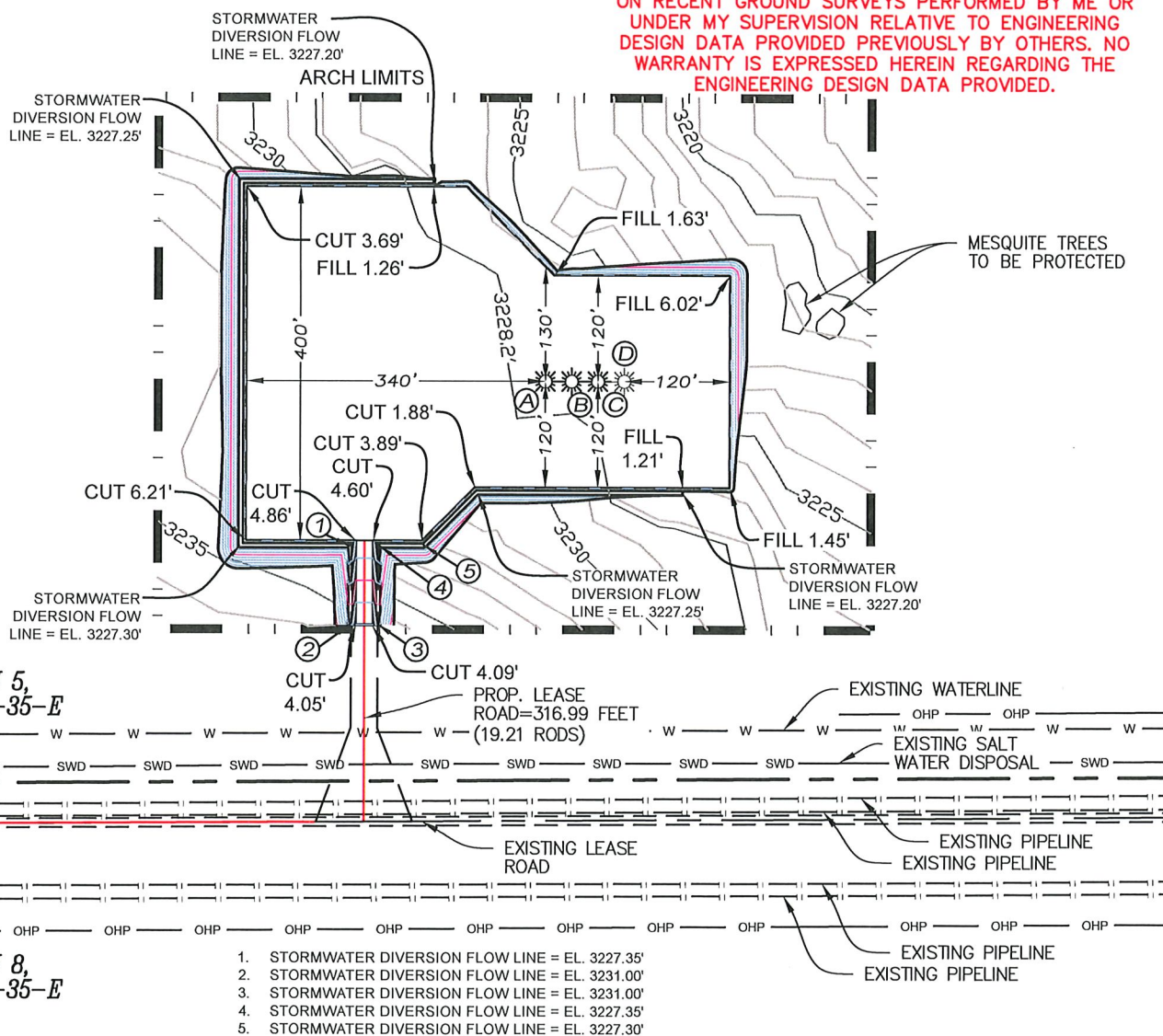
DECEMBER 3, 2020

LONG-TERM PAD DISTURBANCE = 4.92 ACRES

DAVID W. MYERS 11403



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SECTION 5,
T-26-S, R-35-E

SECTION 8,
T-26-S, R-35-E

REV 6 12/03/2020 MWS

LEGEND	
INTERIM RECLAMATION	---
ARCH SURVEY LIMITS	==
PROPOSED LEASE ROAD	---
EXIST. 1' CONTOUR LINES	---
EXIST. 5' CONTOUR LINES	---

PIPELINE	---
SALT WATER DISPOSAL	---
PROPERTY LINE	---
PROPOSED 1' CONTOUR LINES	---
PROPOSED 5' CONTOUR LINES	---
EROSION CONTROL FENCE	---
OVERHEAD POWER	---
FENCE	---

SHEET 5 OF 5
PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
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JOB No. R3757_006

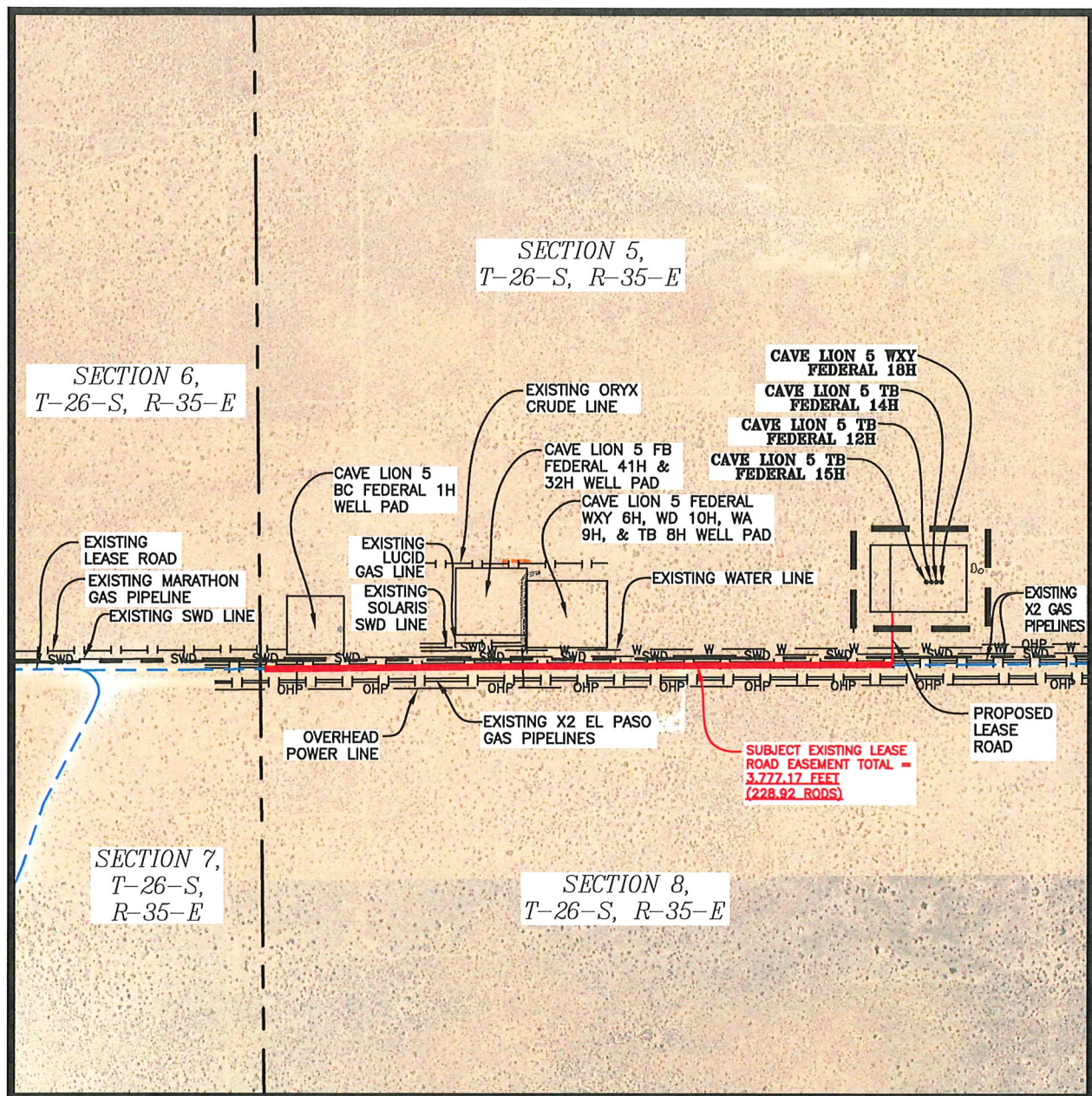
EXISTING ACCESS ROAD

CAVE LION 5 FEDERAL
SEC. 5 TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: ANDREW'S PLACE, N.M.



5	12/03/2020	MWS
REV.	DATE	BY

SCALE: 1" = 1,000'

LEGEND	
WELL PAD	—
ARCH SURVEY LIMITS	— — —
SUBJECT EXISTING LEASE ROAD	—
EXISTING LEASE ROAD	- - -
PROPOSED LEASE ROAD	—
SECTION LINE	— — —
FUTURE WELLS	*
WELLS	.

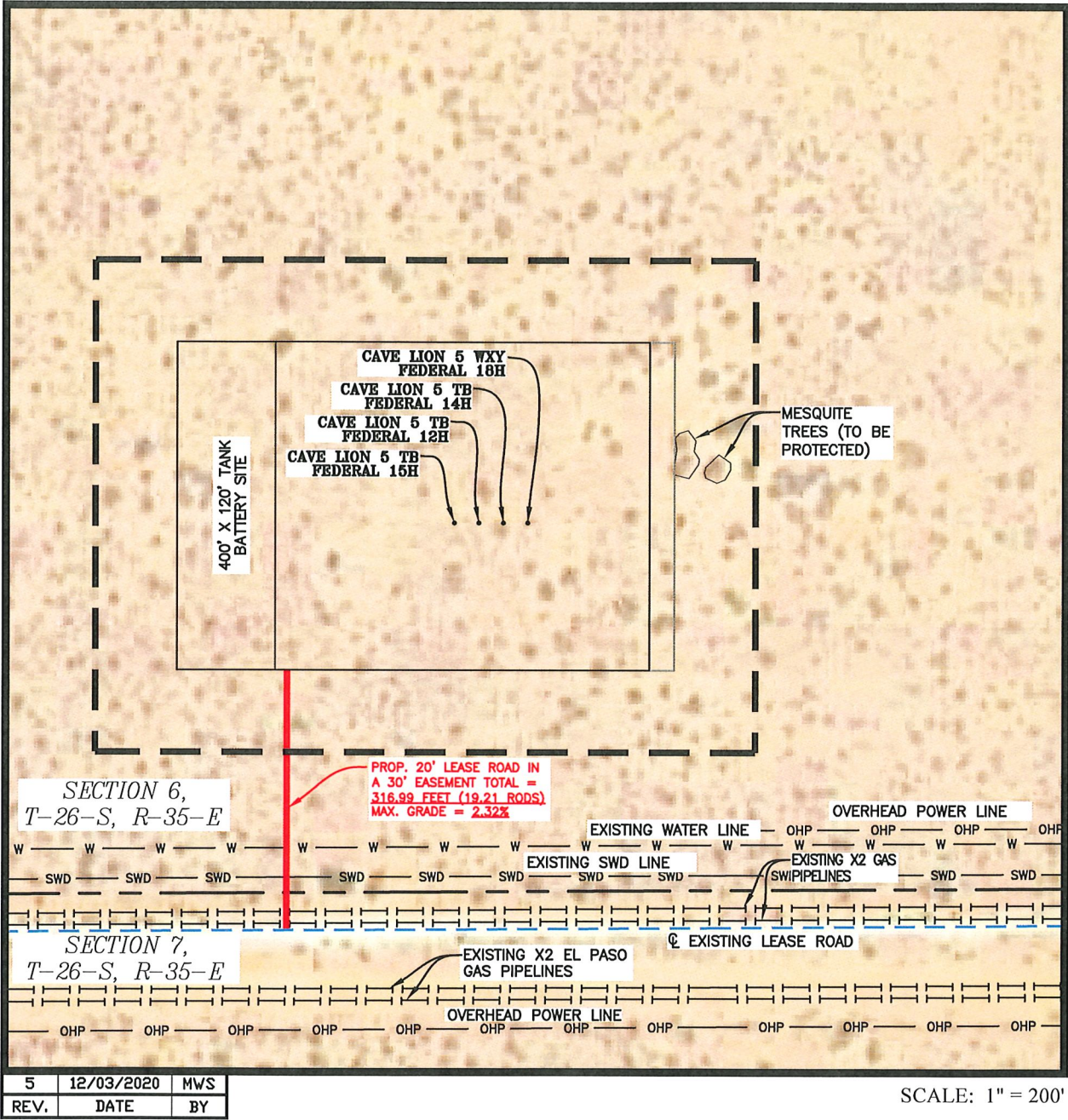
EXISTING WATER LINE	— W — W —
SALT WATER DISPOSAL LINE	— SWD — SWD —
EXISTING GAS PIPELINE	— — — — —
OVERHEAD POWER	— OHP — OHP —

SHEET 1 OF 8

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_007

NEW OR RECONSTRUCTED ACCESS ROADS

CAVE LION 5 FEDERAL
SEC. 5 TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.
COUNTY: LEA
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: ANDREW'S PLACE, N.M.



LEGEND				
WELL PAD	—		EXISTING WATER LINE	— W — W —
ARCH SURVEY LIMITS	— — —		SALT WATER DISPOSAL LINE	— SWD — SWD —
EXISTING LEASE ROAD	— — —		EXISTING GAS PIPELINE	— — — — —
PROPOSED LEASE ROAD	—		OVERHEAD POWER	— OHP — OHP —
SECTION LINE	— — —			
FUTURE WELLS	*			
WELLS	.			

SHEET 2 OF 8

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_007

ONE-MILE RADIUS MAP

CAVE LION 5 FEDERAL (PAD 2)

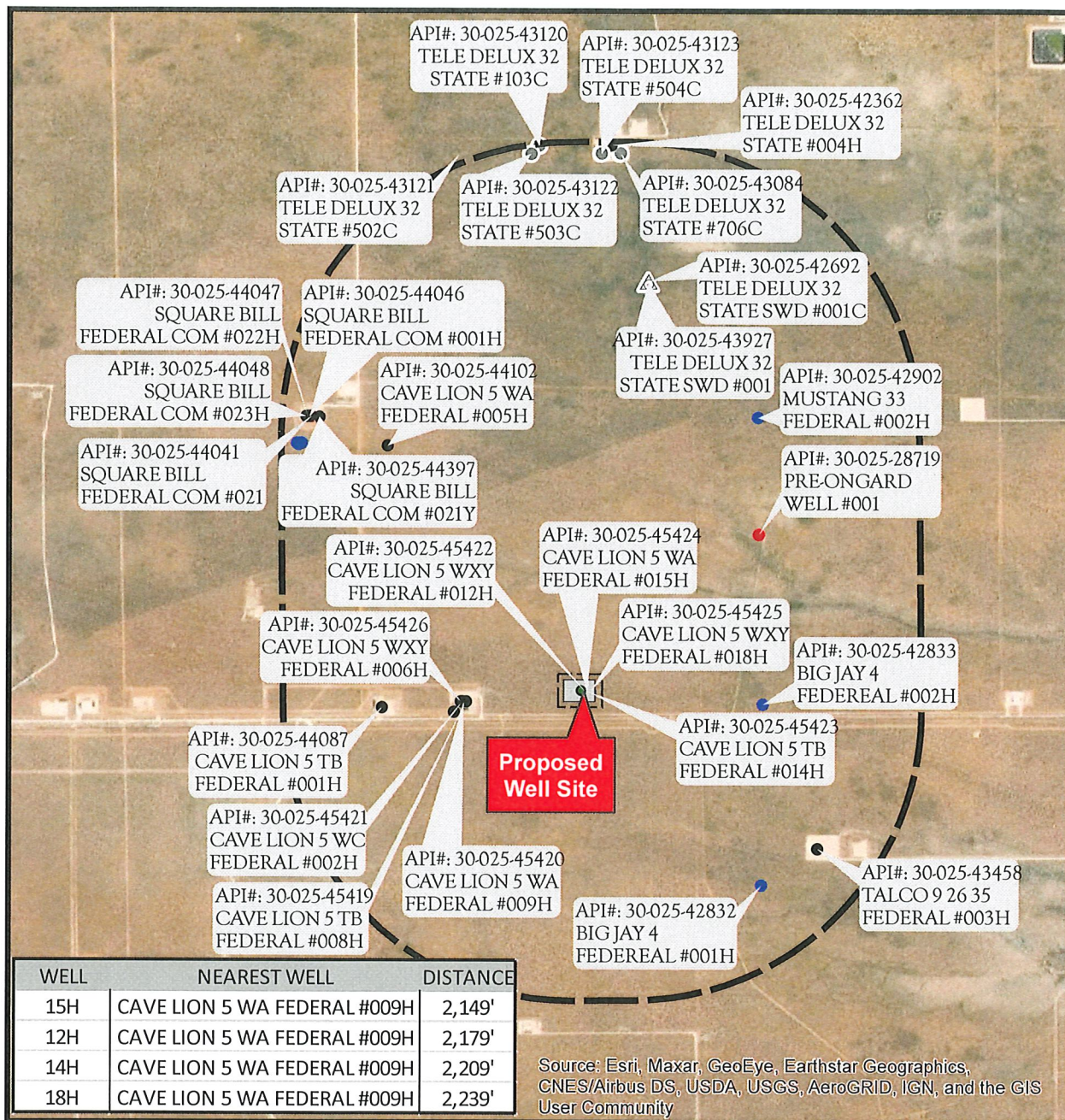
SEC. 5 TWP. 26-S RGE. 35-E

SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, NM, TX.



REV 5 MWS 12/03/2020

1" = 3,000'

- Proposed Well Pad
- Arch Survey Limits
- Section Line
- CO2 Active
- CO2 Cancelled
- CO2, Plugged
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Abandoned
- Injection, Active
- Injection, New
- Injection, Plugged
- Salt Water Injection, Cancelled
- Injection, Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Abandoned
- Salt Water Injection, Active
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Water, Active
- Water, Plugged



SHEET 3 OF 8

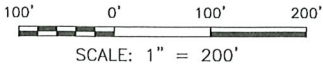
PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3757_006

Page 14 of 31
Retrieved by O.C.D.: 7/15/2021 9:33:21 AM
Released to Imaging: 9/24/2021 1:10:03 PM

WELL PAD PLAT

CAVE LION 5 FEDERAL
SEC. 5 TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.
COUNTY: LEA

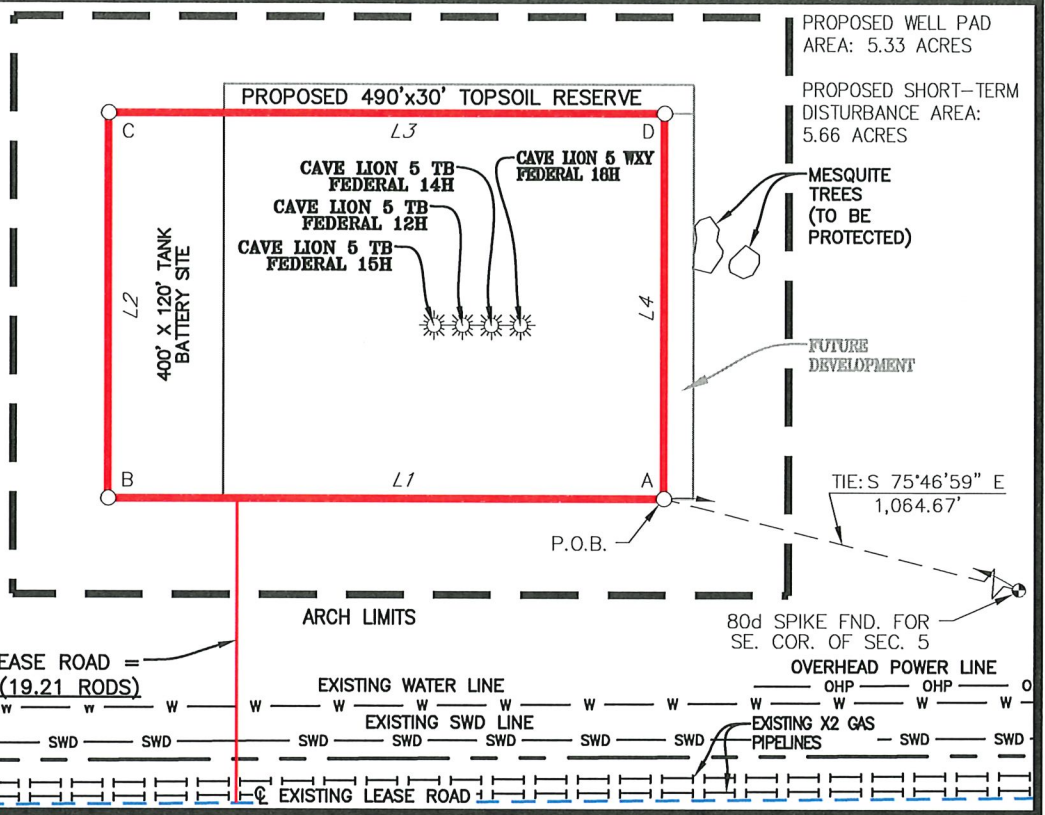
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: ANDREW'S PLACE, N.M.



LINE	BEARING	DISTANCE
L1	WEST	580.00'
L2	NORTH	400.00'
L3	EAST	580.00'
L4	SOUTH	400.00'

NAD 83			
A	E:(X)835324.26 N:(Y)388972.64	LAT:32.06581200 LON:-103.38429298	
B	E:(X)834744.26 N:(Y)388972.64	LAT:32.06582600 LON:-103.38616510	
C	E:(X)834744.26 N:(Y)389372.64	LAT:32.06692544 LON:-103.38615377	
D	E:(X)835324.26 N:(Y)389372.64	LAT:32.06691144 LON:-103.38428162	

NAD 27			
A	E:(X)794136.60 N:(Y)388915.02	LAT:32.06568562 LON:-103.38383091	
B	E:(X)793556.60 N:(Y)388915.01	LAT:32.06569965 LON:-103.38570297	
C	E:(X)793556.62 N:(Y)389315.01	LAT:32.06679910 LON:-103.38569157	
D	E:(X)794136.61 N:(Y)389315.01	LAT:32.06678507 LON:-103.38381949	



SECTION 5,
T-26-S, R-35-E
PROP. LEASE ROAD =
316.99 FEET (19.21 RODS)
SECTION 8, T-26-S, R-35-E

FIELD NOTES DESCRIBING

A tract of land being 5.33 acres. Said tract being located in Section 5, Township 26 South, Range 35 East, New Mexico Principal Meridian, Lea County, New Mexico.

Being more particularly described by metes and bounds as follows:

BEGINNING at a point from which an 80d spike found for the Southeast corner of said Section 5 bears S 75°46'59" E a distance of 1,064.67 feet.

THENCE

WEST a distance of 580.00 feet to the Southwest corner of this tract, and
NORTH a distance of 400.00 feet to the Northwest corner of this tract, and
EAST a distance of 580.00 feet to the Northeast corner of this tract, and
SOUTH a distance of 400.00 feet to the **POINT OF BEGINNING**.

The total area of the herein described tract contains 5.33 acres of land.

All bearings and coordinates refer to NAD 83, New Mexico State Plane Coordinate System, East Zone, U.S. Survey Feet. (All bearings, distances, coordinates and areas are based on grid measurements utilizing a combined scale factor of 0.99985058, convergence angle of 0.49300132°.)

Title information furnished by Marathon Oil Permian LLC.

Reference accompanying Certificate of Survey prepared in conjunction with this legal description for easement.

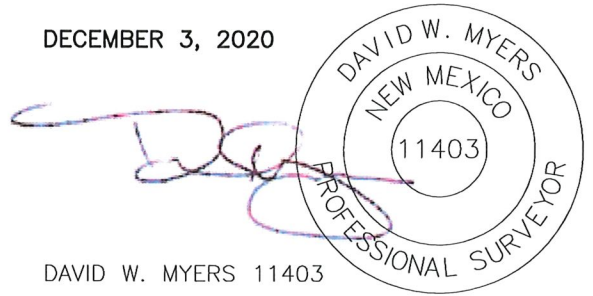
STATE OF NEW MEXICO
COUNTY OF LEA

I, David W. Myers, New Mexico Professional Surveyor No. 11403, do hereby certify that this easement survey plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the minimum standards for surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an easement survey plat crossing an existing tract or tracts.

LEGEND P.O.B. POINT OF BEGINNING

EXISTING ROAD	ARCH LIMITS	OHP	OVERHEAD POWER
PROPOSED ROAD	FENCE		
SURFACE SITE EDGE	SECTION LINE		
EXIST. PIPELINE	SALT WATER DISPOSAL		
MONUMENT	WATER LINE		
QUARTER SPLIT			

DECEMBER 3, 2020



DAVID W. MYERS 11403

Marathon Oil
Permian LLC

PLAT FOR A SURFACE SITE ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
LEA COUNTY, NEW MEXICO

5	12/03/2020	ADD WELL LABEL	MWS	AJG
REV.	DATE	DESCRIPTION	BY	CHKD
SHEET 4 OF 8				
DRAWN BY:	JCS			
DATE:	03/05/2018			
CHECKED BY:	MWS			

1309 LOUISVILLE AVE.
MONROE, LA 71201
(318) 323-6900
FAX (318) 362-0064

WELL LOCATION PLAT

CAVE LION 5 FEDERAL

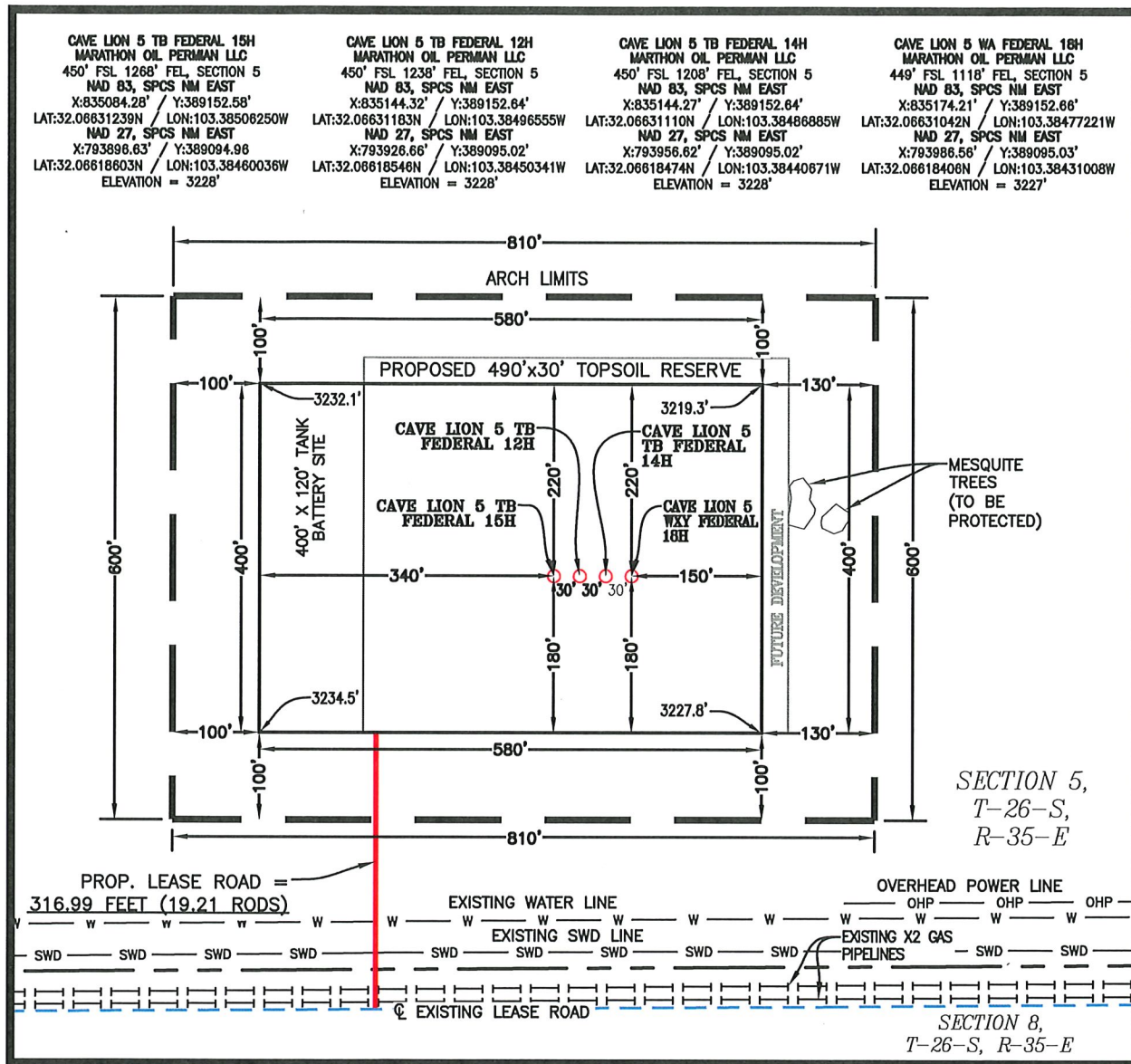
SEC. 5 TWP. 26-S RGE. 35-E

SURVEY: N.M.P.M.

COUNTY: LEA

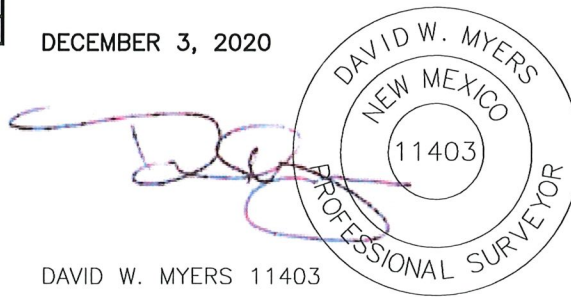
OPERATOR: MARATHON OIL PERMIAN LLC

U.S.G.S. TOPOGRAPHIC MAP: ANDREW'S PLACE, N.M.



5	12/03/2020	MWS
REV.	DATE	BY

DECEMBER 3, 2020



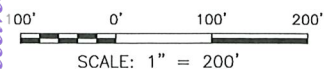
DAVID W. MYERS 11403

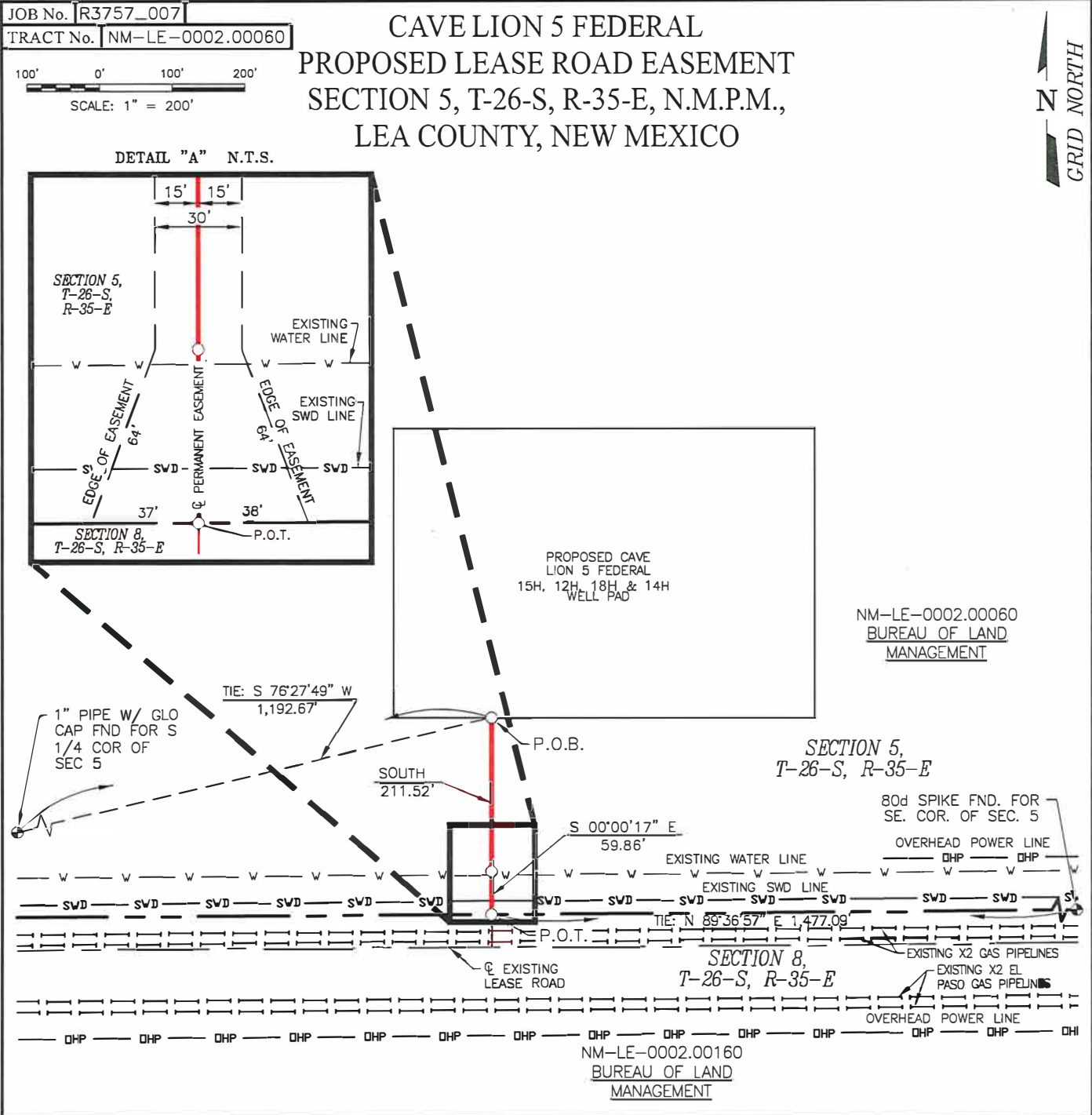
LEGEND	
PROPOSED WELL PAD	—
ARCH SURVEY LIMITS	— —
PROPOSED LEASE ROAD	—
EXISTING LEASE ROAD	- - -
SECTION LINE	- - -
SALT WATER DISPOSAL	— SWD —
WATER LINE	— W —
EXISTING GAS PIPELINE	— + + + —
OVERHEAD POWER LINE	— OHP —

SHEET 5 OF 8

PREPARED BY:
R-SQUARED GLOBAL, LLC
1809 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6000 OFFICE
JOB No. R3757_007

NOTE:
THIS IS NOT A BOUNDARY SURVEY,
APPARENT PROPERTY CORNERS AND
PROPERTY LINES ARE SHOWN FOR
INFORMATION ONLY. BOUNDARY DATA SHOWN
IS FROM STATE OF NEW MEXICO OIL
CONSERVATION DIVISION FORM C-102
INCLUDED IN THIS SUBMITTAL.





EASEMENT DESCRIPTION		MarathonOil Permian LLC				
THE LENGTH OF THE HEREIN DESCRIBED PROPOSED 30 FOOT WIDE PROPOSED LEASE ROAD EASEMENT CROSSING SAID SECTION 5 BEING 271.38 FEET (16.45 RODS) AND CONTAINS 0.22 ACRES OF LAND; SECTION 5, TOWNSHIP 26 SOUTH, RANGE 35 EAST, NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO.						
CENTERLINE EASEMENT TOTALS AS SHOWN IN PLAN ABOVE						
PERMANENT EASEMENT ACREAGE	0.22					
CENTERLINE FOOTAGE	271.38'	LEGEND				
CENTERLINE RODS	16.45					
STAMP						
OCTOBER 27, 2020 DAVID W. MYERS NEW MEXICO 11403 PROFESSIONAL SURVEYOR DAVID W. MYERS 11403						
CERTIFICATION		PLAT FOR A PROPOSED LEASE ROAD EASEMENT CROSSING THE PROPERTY OF				
I, DAVID W. MYERS, NEW MEXICO PROFESSIONAL SURVEYOR NO. 11403, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT AND THAT THIS INSTRUMENT IS AN EASEMENT SURVEY PLAT CROSSING AN EXISTING TRACT OR TRACTS.		BUREAU OF LAND MANAGEMENT				
NOTES		LEA COUNTY, NEW MEXICO				
BASIS OF BEARING		DATE SURVEYED: 8/24/2020				
ALL BEARINGS AND COORDINATES REFER TO NAD 83, NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET. (ALL BEARINGS, DISTANCES, COORDINATES AND AREAS ARE GRID MEASUREMENTS UTILIZING A COMBINED SCALE FACTOR OF 0.999985058 CONVERGENCE ANGLE OF 0.49300132")		4	10/12/2020	RE-DESIGN	DEF	MWS
		REV.	DATE	DESCRIPTION	BY	CHKD
		SHEET 1 OF 1		B-SOURCED R GLOBAL LLC		
		DRAWN BY: DEF				
		DATE DRAWN: 10/12/2020				
		CHECKED BY: MWS				
				1309 LOUISVILLE AVE. MONROE, LA 71201 (318) 323-6900 FAX (318) 362-0064		

Pad Plat - Page 13 of 13

MARATHON OIL PERMIAN LLC

DRILLING AND OPERATIONS PLAN

WELL NAME / NUMBER: CAVE LION 5 TB FED COM 12H

STATE: NEW MEXICO **COUNTY:** LEA

Application Data Report

1. WELL LOCATION TABLE

Traverse Segment	Latitude NAD83	Longitude NAD83	Elevation (ft SS)	MD (RKB)	TVD (RKB)	Lease Serial	NS Foot	NS Indicator	EW Foot	EW Indicator	TWSP	Range	Section	Aliquot/Lot	Lease Type
SHL	32.06631183	-103.3849656	3228	0	0	NMNM013647	450	FSL	1238	FEL	26S	35E	5	SESE	F
FTP	32.06534509	-103.3820344	-9388	12695.46	12615.6	NMNM013647	100	FSL	330	FEL	26S	35E	5	SESE	F
BHL	32.07932016	-103.3820508	-9328	17571.82	12556.19	NMNM013647	100	FNL	330	FEL	26S	35E	5	NENE	F

Drilling Plan Data Report

1. GEOLOGIC FORMATIONS

Formation	True Vertical Depth (ft)	Measured Depth (ft)	Lithologies	Mineral Resources
Rustler	1061	1061	Salt/Anhydrite	BRINE
Castile	3539	3554.2	Salt/Anhydrite	BRINE
Base of Salt	5359	5402.3	Limy Sands	BRINE
Lamar	5359	5402.3	Sand/Shales	NONE
Delaware	5388	5431.8	Sands/Shale	OIL
Bone Spring	9299	9378.8	Sands/Carbonates	OIL
Wolfcamp	12509	12644.5	Carbonates/Shales/Sands	OIL

2. BLOWOUT PREVENTION

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
14 3/4"	13 5/8"	10000	Annular	X	100% of working pressure
			BOP Stack	X	10000
9 7/8"	13 5/8"	10000	Annular	X	100% of working pressure
			BOP Stack	X	10000
6 3/4"	13 5/8"	10000	Annular	X	100% of working pressure
			BOP Stack	X	10000

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being 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.	

3. CASING PROGRAM

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	14 3/4"	10 3/4	0	1261	0	1261	3228	1967	40.5	J-55	STC	6.57	1.95	2.98
Intermediate	9 7/8"	7 5/8	0	11580	0	11500	3228	-8272	29.7	P-110	BTC	2.3	1.24	2.35
Production	6 3/4"	5 1/2	0	17571.5/6	0	12556 1/5	3228	-9328 1/5	20	P-110	BTC	1.33	1.24	1.86

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

4. CEMENT

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft3/sks)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	1008.8	811	1.73	13.5	1403	150	Class C	LCM
Surface	Tail	--	1008.8	1261	211	1.33	14.8	281	100	Class C	Accelerator
Intermediate	Lead	--	0	10500	1811	2.49	11.0	4510	100	Class C	Extender, Accelerator
Intermediate	Tail	--	10500	11580	236	1.28	13.8	302	30	Class H	Retarder
Production	Lead	--	9080	9580	47	1.29	14.5	60	30	Class H	Viscosifier, Retarder
Production	Tail	--	9580	17571.82	818	1.09	14.5	891	30	Class H	Extender, Fluid Loss, Dispersant

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Pilot hole depth: N/A TVD/MD

KOP: N/A TVD/MD

Plug Top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sks)	Water gal/sk	Slurry Description and Cement Type

Attach plugging procedure for pilot hole: N/A

5. CIRCULATING MEDIUM

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max Weight (ppg)
0	1261	Water Based Mud	8.4	8.8
1261	11580	Brine	9.2	10.2
11580	17571.82	Oil Based Mud	10.5	12.5

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.
The necessary mud products for additional weight and fluid loss control will be on location at all times.

6. TEST, LOGGING, CORING

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

GR from TD to surface (horizontal well - vertical portion of hole)

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

GR while drilling from Intermediate casing shoe to TD.

Coring operation description for the well:

No coring is planned at this time.

Mud Logger: None.

DST's: None.

Open Hole Logs: GR while drilling from Intermediate casing shoe to TD.

7. PRESSURE

ANTICIPATED BOTTOM HOLE PRESSURE: 8,162 psi

ANTICIPATED BOTTOM HOLE TEMPERATURE: 195 °F

ANTICIPATED ABNORMAL PRESSURE: N

ANTICIPATED ABNORMAL TEMPERATURE: N

POTENTIAL HAZARDS:

A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.

B. No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

C. No losses are anticipated at this time.

D. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

E. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

8. OTHER

Other Well Information**AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT**

A Kelly cock will be in the drill string at all times.

A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.

Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM**

ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



Marathon Oil Corporation
Well Name: Cave Lion 5 TB Federal #12H
Project: Lea County, NM
Wellbore: Wellbore #1
Plan: Preliminary Plan #1



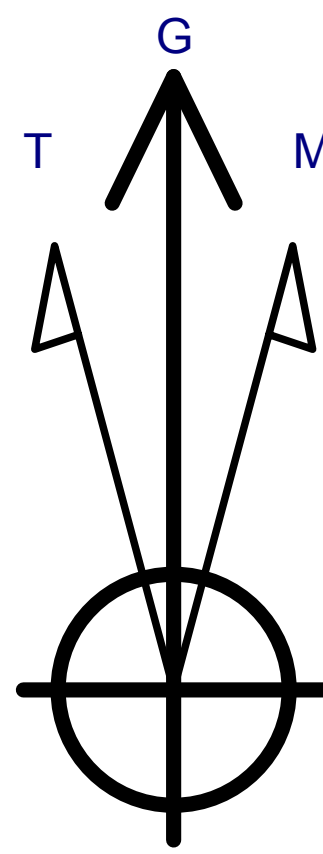
Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Latitude: 32.06618547
Longitude: -103.38450342

Grid East: 793926.66
Grid North: 389095.02
Scale Factor: 1.000

Geomagnetic Model: IGRF2020
Sample Date: 21-Oct-20
Magnetic Declination: 6.52°
Dip Angle from Horizontal: 59.81°
Magnetic Field Strength: 47488.37994044nT

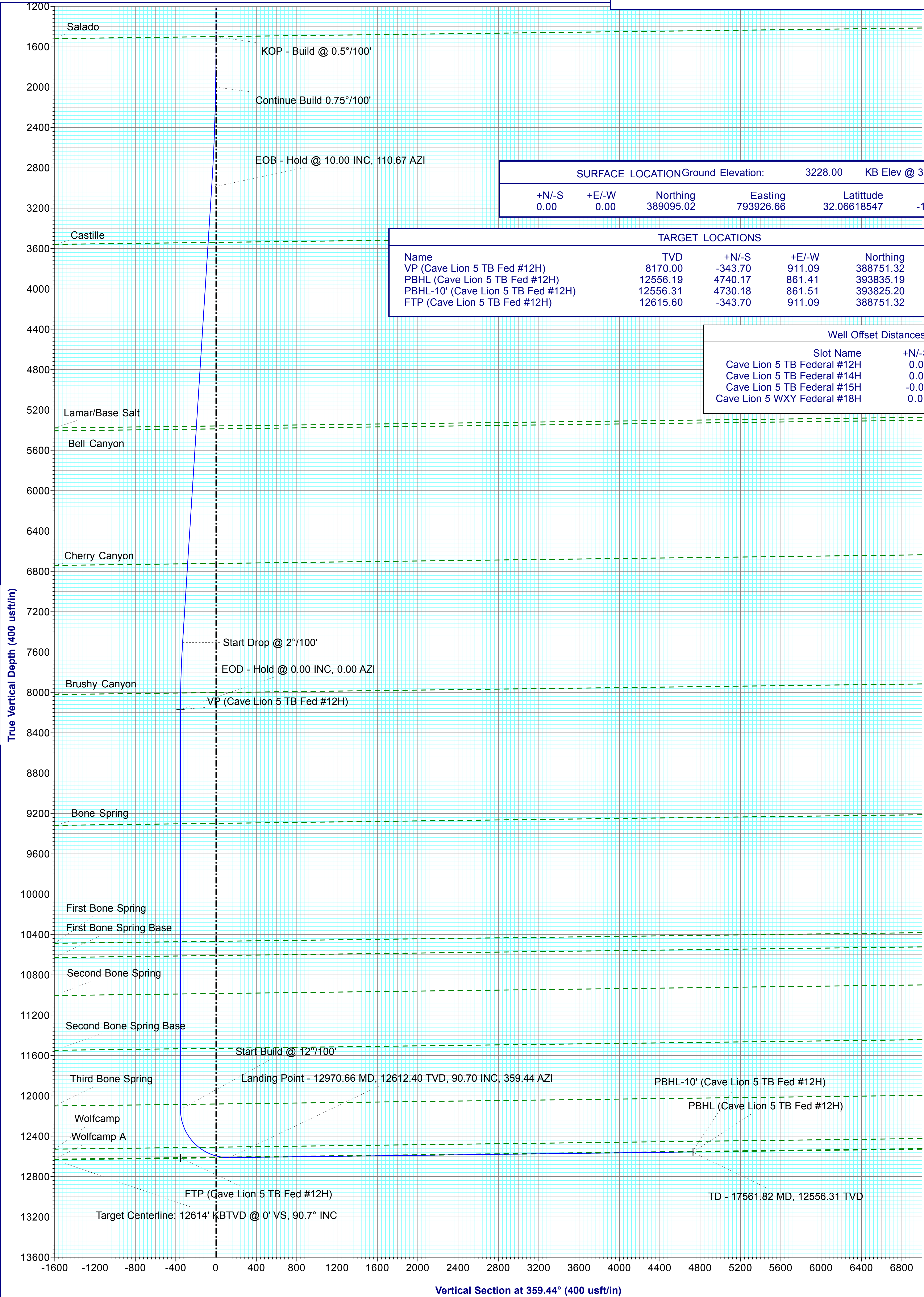
To convert a Magnetic Direction to a Grid Direction, Add 6.02°



Azimuths to Grid North
True North: -0.50°
Magnetic North: 6.02°

Magnetic Field
Strength: 47488.4nT
Dip Angle: 59.81°
Date: 10/21/2020
Model: IGRF2020

Well Planning: Chris Thomas
11:18, October 22 2020



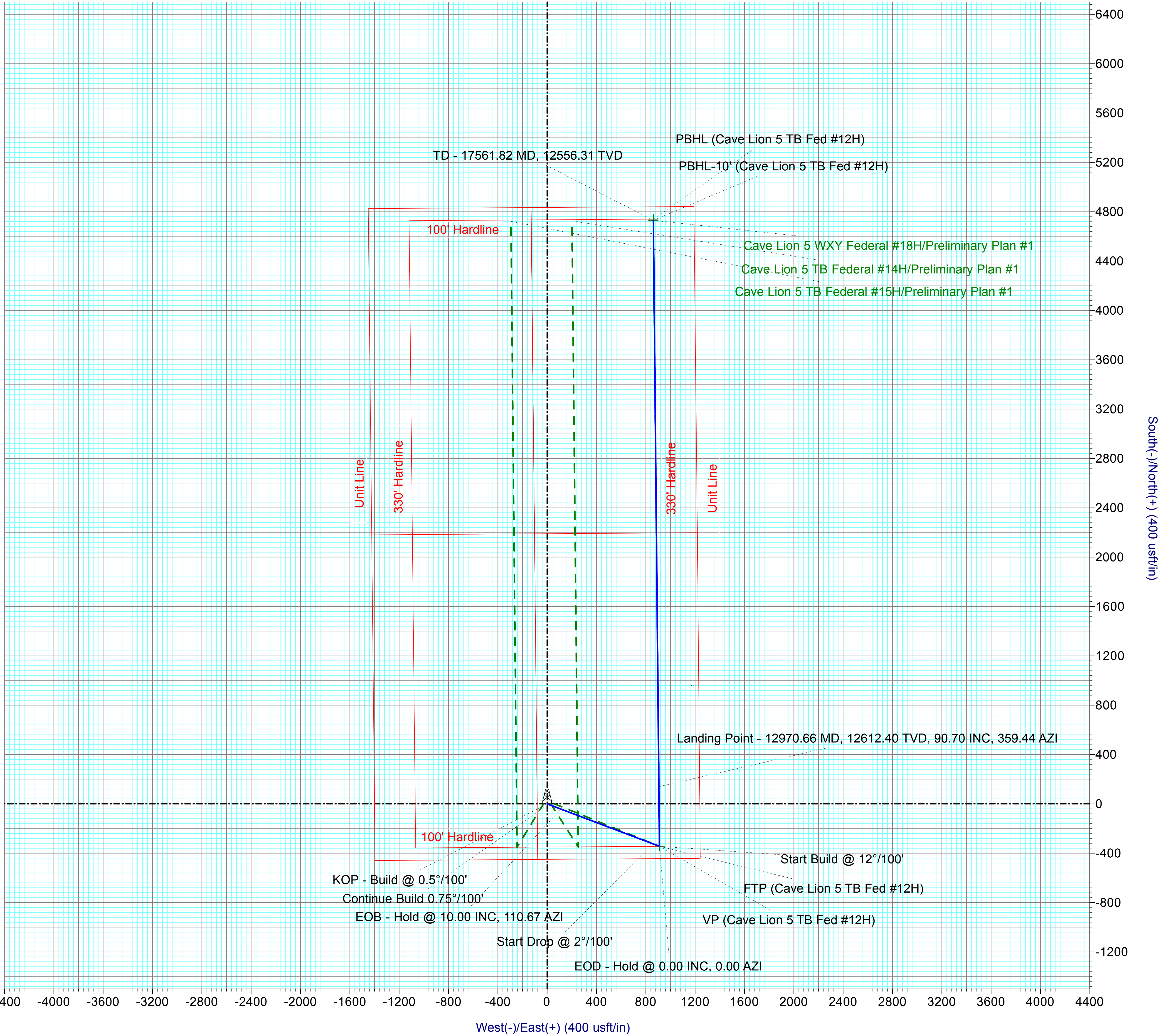
SURFACE LOCATIONGround Elevation:				3228.00	KB Elev @ 3253.00usft
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	389095.02	793926.66	32.06618547	-103.38450342

TARGET LOCATIONS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
VP (Cave Lion 5 TB Fed #12H)	8170.00	-343.70	911.09	388751.32	794837.75
PBHL (Cave Lion 5 TB Fed #12H)	12556.19	4740.17	861.41	393835.19	794788.07
PBHL-10' (Cave Lion 5 TB Fed #12H)	12556.31	4730.18	861.51	393825.20	794788.17
FTP (Cave Lion 5 TB Fed #12H)	12615.60	-343.70	911.09	388751.32	794837.75

Well Offset Distances			
Slot Name	+N/-S	+E/-W	
Cave Lion 5 TB Federal #12H	0.00	0.00	
Cave Lion 5 TB Federal #14H	0.00	29.96	
Cave Lion 5 TB Federal #15H	-0.06	-30.03	
Cave Lion 5 WXY Federal #18H	0.01	59.90	

SECTION DETAILS:

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	KOP - Build @ 0.5°/100'
3	2000.00	2.50	110.67	1999.84	-3.85	10.20	0.50	110.67	-3.95	Continue Build 0.75°/100'
4	3000.30	10.00	110.67	2993.48	-42.27	112.04	0.75	0.00	-43.36	EOB - Hold @ 10.00 INC, 110.67 AZI
5	7583.04	10.00	110.67	7506.57	-323.21	856.77	0.00	0.00	-331.57	Start Drop @ 2°/100'
6	8249.85	0.00	0.00	8170.00	-343.70	911.09	1.50	180.00	-352.59	EOD - Hold @ 0.00 INC, 0.00 AZI
7	12214.83	0.00	0.00	12134.97	-343.70	911.09	0.00	0.00	-352.59	Start Build @ 12°/100'
8	12970.66	90.70	359.44	12612.40	139.57	906.37	12.00	359.44	130.71	Landing Point - 12970.66 MD, 12612.40 TVD, 90.70 INC, 359.44 AZI
9	17561.82	90.70	359.44	12556.31	4730.18	861.51	0.00	0.00	4721.53	TD - 17561.82 MD, 12556.31 TVD



Marathon Oil Corporation

Lea County, NM

Cave Lion 5

Cave Lion 5 TB Federal #12H

Wellbore #1

Plan: Preliminary Plan #1

Standard Planning Report - Geographic

21 October, 2020

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Project	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Cave Lion 5			
Site Position:		Northing:	389,095.02 usft	Latitude:	32.06618547
From:	Map	Easting:	793,926.66 usft	Longitude:	-103.38450342
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	Cave Lion 5 TB Federal #12H					
Well Position	+N/-S	0.00 usft	Northing:	389,095.02 usft	Latitude:	32.06618547
	+E/-W	0.00 usft	Easting:	793,926.66 usft	Longitude:	-103.38450342
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,228.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/21/2020	6.52	59.81	47,488.37994044

Design	Preliminary Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.44

Plan Survey Tool Program	Date	10/21/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,561.82 Preliminary Plan #1 (Wellbore #1)	MWD+IFR1 OWSG MWD + IFR1	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	2.50	110.67	1,999.84	-3.85	10.20	0.50	0.50	0.00	110.67	
3,000.30	10.00	110.67	2,993.48	-42.27	112.04	0.75	0.75	0.00	0.00	
7,583.04	10.00	110.67	7,506.57	-323.21	856.77	0.00	0.00	0.00	0.00	
8,249.85	0.00	0.00	8,170.00	-343.70	911.09	1.50	-1.50	0.00	180.00	VP (Cave Lion 5 TB F
12,214.83	0.00	0.00	12,134.97	-343.70	911.09	0.00	0.00	0.00	0.00	
12,970.66	90.70	359.44	12,612.40	139.57	906.37	12.00	12.00	0.00	359.44	
17,561.82	90.70	359.44	12,556.31	4,730.18	861.51	0.00	0.00	0.00	0.00	PBHL-10' (Cave Lion

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
100.00	0.00	0.00	100.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
200.00	0.00	0.00	200.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
300.00	0.00	0.00	300.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
400.00	0.00	0.00	400.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
500.00	0.00	0.00	500.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
600.00	0.00	0.00	600.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
700.00	0.00	0.00	700.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
800.00	0.00	0.00	800.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
900.00	0.00	0.00	900.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,000.00	0.00	0.00	1,000.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,061.00	0.00	0.00	1,061.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
Rustler									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,200.00	0.00	0.00	1,200.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,300.00	0.00	0.00	1,300.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,400.00	0.00	0.00	1,400.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
1,499.00	0.00	0.00	1,499.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
Salado									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	389,095.02	793,926.66	32.06618547	-103.38450342
KOP - Build @ 0.5°/100'									
1,600.00	0.50	110.67	1,600.00	-0.15	0.41	389,094.86	793,927.07	32.06618504	-103.38450211
1,700.00	1.00	110.67	1,699.99	-0.62	1.63	389,094.40	793,928.29	32.06618374	-103.38449817
1,800.00	1.50	110.67	1,799.97	-1.39	3.67	389,093.63	793,930.33	32.06618157	-103.38449160
1,900.00	2.00	110.67	1,899.92	-2.46	6.53	389,092.55	793,933.19	32.06617854	-103.38448241
2,000.00	2.50	110.67	1,999.84	-3.85	10.20	389,091.17	793,936.86	32.06617465	-103.38447059
Continue Build 0.75°/100'									
2,100.00	3.25	110.67	2,099.71	-5.62	14.90	389,089.40	793,941.56	32.06616967	-103.38445549
2,200.00	4.00	110.67	2,199.51	-7.85	20.81	389,087.17	793,947.47	32.06616339	-103.38443646
2,300.00	4.75	110.67	2,299.22	-10.54	27.95	389,084.47	793,954.61	32.06615582	-103.38441350
2,400.00	5.50	110.67	2,398.82	-13.70	36.31	389,081.32	793,962.97	32.06614695	-103.38438661
2,500.00	6.25	110.67	2,498.30	-17.31	45.89	389,077.71	793,972.54	32.06613678	-103.38435580
2,600.00	7.00	110.67	2,597.63	-21.38	56.68	389,073.64	793,983.34	32.06612533	-103.38432108
2,700.00	7.75	110.67	2,696.80	-25.91	68.69	389,069.11	793,995.35	32.06611259	-103.38428244
2,800.00	8.50	110.67	2,795.79	-30.90	81.91	389,064.12	794,008.57	32.06609856	-103.38423990
2,900.00	9.25	110.67	2,894.60	-36.35	96.35	389,058.67	794,023.01	32.06608324	-103.38419346
3,000.00	10.00	110.67	2,993.19	-42.25	111.99	389,052.77	794,038.65	32.06606664	-103.38414314
3,000.30	10.00	110.67	2,993.48	-42.27	112.04	389,052.75	794,038.70	32.06606659	-103.38414298
EOB - Hold @ 10.00 INC, 110.67 AZI									
3,100.00	10.00	110.67	3,091.67	-48.38	128.24	389,046.64	794,054.90	32.06604940	-103.38409086
3,200.00	10.00	110.67	3,190.15	-54.51	144.49	389,040.51	794,071.15	32.06603215	-103.38403858
3,300.00	10.00	110.67	3,288.63	-60.64	160.74	389,034.38	794,087.40	32.06601491	-103.38398630
3,400.00	10.00	110.67	3,387.11	-66.77	177.00	389,028.25	794,103.65	32.06599767	-103.38393402
3,500.00	10.00	110.67	3,485.59	-72.90	193.25	389,022.12	794,119.90	32.06598042	-103.38388174
3,555.21	10.00	110.67	3,539.96	-76.28	202.22	389,018.73	794,128.88	32.06597090	-103.38385288
Castille									
3,600.00	10.00	110.67	3,584.07	-79.03	209.50	389,015.99	794,136.15	32.06596318	-103.38382946
3,700.00	10.00	110.67	3,682.55	-85.16	225.75	389,009.86	794,152.41	32.06594593	-103.38377719
3,800.00	10.00	110.67	3,781.03	-91.29	242.00	389,003.73	794,168.66	32.06592869	-103.38372491
3,900.00	10.00	110.67	3,879.51	-97.42	258.25	388,997.60	794,184.91	32.06591145	-103.38367263
4,000.00	10.00	110.67	3,977.99	-103.55	274.50	388,991.47	794,201.16	32.06589420	-103.38362035
4,100.00	10.00	110.67	4,076.47	-109.68	290.75	388,985.34	794,217.41	32.06587696	-103.38356807
4,200.00	10.00	110.67	4,174.95	-115.81	307.00	388,979.21	794,233.66	32.06585972	-103.38351579
4,300.00	10.00	110.67	4,273.43	-121.94	323.25	388,973.07	794,249.91	32.06584247	-103.38346351

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,400.00	10.00	110.67	4,371.91	-128.07	339.50	388,966.94	794,266.16	32.06582523	-103.38341123
4,500.00	10.00	110.67	4,470.39	-134.20	355.75	388,960.81	794,282.41	32.06580798	-103.38335895
4,600.00	10.00	110.67	4,568.87	-140.34	372.00	388,954.68	794,298.66	32.06579074	-103.38330667
4,700.00	10.00	110.67	4,667.35	-146.47	388.26	388,948.55	794,314.91	32.06577350	-103.38325440
4,800.00	10.00	110.67	4,765.83	-152.60	404.51	388,942.42	794,331.16	32.06575625	-103.38320212
4,900.00	10.00	110.67	4,864.31	-158.73	420.76	388,936.29	794,347.41	32.06573901	-103.38314984
5,000.00	10.00	110.67	4,962.79	-164.86	437.01	388,930.16	794,363.67	32.06572176	-103.38309756
5,100.00	10.00	110.67	5,061.27	-170.99	453.26	388,924.03	794,379.92	32.06570452	-103.38304528
5,200.00	10.00	110.67	5,159.75	-177.12	469.51	388,917.90	794,396.17	32.06568728	-103.38299300
5,300.00	10.00	110.67	5,258.23	-183.25	485.76	388,911.77	794,412.42	32.06567003	-103.38294072
5,400.00	10.00	110.67	5,356.71	-189.38	502.01	388,905.64	794,428.67	32.06565279	-103.38288845
5,404.74	10.00	110.67	5,361.38	-189.67	502.78	388,905.35	794,429.44	32.06565197	-103.38288597
Lamar/Base Salt									
5,434.21	10.00	110.67	5,390.40	-191.48	507.57	388,903.54	794,434.23	32.06564689	-103.38287056
Bell Canyon									
5,500.00	10.00	110.67	5,455.19	-195.51	518.26	388,899.51	794,444.92	32.06563554	-103.38283617
5,600.00	10.00	110.67	5,553.67	-201.64	534.51	388,893.38	794,461.17	32.06561830	-103.38278389
5,700.00	10.00	110.67	5,652.15	-207.77	550.76	388,887.25	794,477.42	32.06560106	-103.38273161
5,800.00	10.00	110.67	5,750.63	-213.90	567.01	388,881.12	794,493.67	32.06558381	-103.38267933
5,900.00	10.00	110.67	5,849.11	-220.03	583.26	388,874.99	794,509.92	32.06556657	-103.38262705
6,000.00	10.00	110.67	5,947.59	-226.16	599.52	388,868.86	794,526.17	32.06554932	-103.38257477
6,100.00	10.00	110.67	6,046.07	-232.29	615.77	388,862.73	794,542.42	32.06553208	-103.38252250
6,200.00	10.00	110.67	6,144.55	-238.42	632.02	388,856.60	794,558.67	32.06551483	-103.38247022
6,300.00	10.00	110.67	6,243.03	-244.55	648.27	388,850.47	794,574.93	32.06549759	-103.38241794
6,400.00	10.00	110.67	6,341.51	-250.68	664.52	388,844.34	794,591.18	32.06548035	-103.38236566
6,500.00	10.00	110.67	6,439.99	-256.81	680.77	388,838.21	794,607.43	32.06546310	-103.38231338
6,600.00	10.00	110.67	6,538.47	-262.94	697.02	388,832.07	794,623.68	32.06544586	-103.38226110
6,700.00	10.00	110.67	6,636.95	-269.07	713.27	388,825.94	794,639.93	32.06542861	-103.38220882
6,789.86	10.00	110.67	6,725.44	-274.58	727.87	388,820.44	794,654.53	32.06541312	-103.38216185
Cherry Canyon									
6,800.00	10.00	110.67	6,735.43	-275.20	729.52	388,819.81	794,656.18	32.06541137	-103.38215655
6,900.00	10.00	110.67	6,833.91	-281.34	745.77	388,813.68	794,672.43	32.06539412	-103.38210427
7,000.00	10.00	110.67	6,932.39	-287.47	762.02	388,807.55	794,688.68	32.06537688	-103.38205199
7,100.00	10.00	110.67	7,030.87	-293.60	778.27	388,801.42	794,704.93	32.06535964	-103.38199971
7,200.00	10.00	110.67	7,129.35	-299.73	794.52	388,795.29	794,721.18	32.06534239	-103.38194743
7,300.00	10.00	110.67	7,227.83	-305.86	810.78	388,789.16	794,737.43	32.06532515	-103.38189515
7,400.00	10.00	110.67	7,326.31	-311.99	827.03	388,783.03	794,753.68	32.06530790	-103.38184288
7,500.00	10.00	110.67	7,424.79	-318.12	843.28	388,776.90	794,769.93	32.06529066	-103.38179060
7,583.04	10.00	110.67	7,506.57	-323.21	856.77	388,771.81	794,783.43	32.06527634	-103.38174719
Start Drop @ 2°/100'									
7,600.00	9.75	110.67	7,523.28	-324.24	859.49	388,770.78	794,786.15	32.06527345	-103.38173843
7,700.00	8.25	110.67	7,622.05	-329.76	874.13	388,765.26	794,800.78	32.06525792	-103.38169136
7,800.00	6.75	110.67	7,721.19	-334.36	886.33	388,760.66	794,812.99	32.06524497	-103.38165208
7,900.00	5.25	110.67	7,820.64	-338.05	896.11	388,756.97	794,822.77	32.06523459	-103.38162063
8,000.00	3.75	110.67	7,920.33	-340.82	903.45	388,754.20	794,830.10	32.06522681	-103.38159703
8,086.09	2.46	110.67	8,006.29	-342.46	907.81	388,752.56	794,834.46	32.06522218	-103.38158301
Brushy Canyon									
8,100.00	2.25	110.67	8,020.19	-342.66	908.34	388,752.36	794,835.00	32.06522162	-103.38158129
8,200.00	0.75	110.67	8,120.15	-343.59	910.79	388,751.43	794,837.44	32.06521902	-103.38157342
8,249.85	0.00	0.00	8,170.00	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
EOD - Hold @ 0.00 INC, 0.00 AZI - VP (Cave Lion 5 TB Fed #12H)									
8,300.00	0.00	0.00	8,220.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
8,400.00	0.00	0.00	8,320.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
8,500.00	0.00	0.00	8,420.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245

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Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,600.00	0.00	0.00	8,520.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
8,700.00	0.00	0.00	8,620.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
8,800.00	0.00	0.00	8,720.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
8,900.00	0.00	0.00	8,820.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,000.00	0.00	0.00	8,920.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,100.00	0.00	0.00	9,020.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,200.00	0.00	0.00	9,120.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,300.00	0.00	0.00	9,220.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,383.16	0.00	0.00	9,303.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
Bone Spring									
9,400.00	0.00	0.00	9,320.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,500.00	0.00	0.00	9,420.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,600.00	0.00	0.00	9,520.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,700.00	0.00	0.00	9,620.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,800.00	0.00	0.00	9,720.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
9,900.00	0.00	0.00	9,820.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,000.00	0.00	0.00	9,920.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,100.00	0.00	0.00	10,020.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,200.00	0.00	0.00	10,120.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,300.00	0.00	0.00	10,220.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,400.00	0.00	0.00	10,320.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,500.00	0.00	0.00	10,420.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,552.16	0.00	0.00	10,472.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
First Bone Spring									
10,600.00	0.00	0.00	10,520.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,693.16	0.00	0.00	10,613.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
First Bone Spring Base									
10,700.00	0.00	0.00	10,620.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,800.00	0.00	0.00	10,720.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
10,900.00	0.00	0.00	10,820.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,000.00	0.00	0.00	10,920.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,070.16	0.00	0.00	10,990.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
Second Bone Spring									
11,100.00	0.00	0.00	11,020.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,200.00	0.00	0.00	11,120.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,300.00	0.00	0.00	11,220.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,400.00	0.00	0.00	11,320.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,500.00	0.00	0.00	11,420.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,600.00	0.00	0.00	11,520.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,613.16	0.00	0.00	11,533.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
Second Bone Spring Base									
11,700.00	0.00	0.00	11,620.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,800.00	0.00	0.00	11,720.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
11,900.00	0.00	0.00	11,820.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
12,000.00	0.00	0.00	11,920.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
12,100.00	0.00	0.00	12,020.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
12,165.16	0.00	0.00	12,085.31	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
Third Bone Spring									
12,200.00	0.00	0.00	12,120.15	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
12,214.83	0.00	0.00	12,134.98	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
Start Build @ 12°/100'									
12,300.00	10.22	359.44	12,219.70	-336.12	911.02	388,758.90	794,837.67	32.06523952	-103.38157247
12,400.00	22.22	359.44	12,315.54	-308.24	910.74	388,786.78	794,837.40	32.06531617	-103.38157255
12,500.00	34.22	359.44	12,403.49	-261.04	910.28	388,833.98	794,836.94	32.06544592	-103.38157270

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
12,600.00	46.22	359.44	12,479.71	-196.59	909.65	388,898.43	794,836.31	32.06562309	-103.38157290	
FTP (Cave Lion 5 TB Fed #12H)										
12,647.91	51.97	359.44	12,511.07	-160.40	909.30	388,934.62	794,835.96	32.06572258	-103.38157301	
Wolfcamp										
12,700.00	58.22	359.44	12,540.86	-117.70	908.88	388,977.32	794,835.54	32.06583995	-103.38157314	
12,800.00	70.22	359.44	12,584.27	-27.82	908.00	389,067.20	794,834.66	32.06608702	-103.38157342	
12,900.00	82.22	359.44	12,608.05	69.12	907.06	389,164.14	794,833.71	32.06635350	-103.38157371	
12,901.50	82.40	359.44	12,608.25	70.61	907.04	389,165.63	794,833.70	32.06635759	-103.38157372	
Wolfcamp A										
12,970.63	90.70	359.44	12,612.40	139.54	906.37	389,234.56	794,833.03	32.06654710	-103.38157393	
Target Centerline: 12614' KBTVD @ 0° VS, 90.7° INC										
12,970.66	90.70	359.44	12,612.40	139.58	906.37	389,234.60	794,833.03	32.06654719	-103.38157393	
Landing Point - 12970.66 MD, 12612.40 TVD, 90.70 INC, 359.44 AZI										
13,000.00	90.70	359.44	12,612.04	168.91	906.08	389,263.93	794,832.74	32.06662783	-103.38157402	
13,100.00	90.70	359.44	12,610.82	268.90	905.10	389,363.92	794,831.76	32.06690269	-103.38157433	
13,200.00	90.70	359.44	12,609.60	368.89	904.13	389,463.91	794,830.78	32.06717755	-103.38157464	
13,300.00	90.70	359.44	12,608.38	468.88	903.15	389,563.89	794,829.81	32.06745241	-103.38157494	
13,400.00	90.70	359.44	12,607.16	568.86	902.17	389,663.88	794,828.83	32.06772726	-103.38157525	
13,500.00	90.70	359.44	12,605.94	668.85	901.20	389,763.87	794,827.85	32.06800212	-103.38157556	
13,600.00	90.70	359.44	12,604.71	768.84	900.22	389,863.86	794,826.88	32.06827698	-103.38157586	
13,700.00	90.70	359.44	12,603.49	868.83	899.24	389,963.85	794,825.90	32.06855184	-103.38157617	
13,800.00	90.70	359.44	12,602.27	968.82	898.26	390,063.83	794,824.92	32.06882670	-103.38157648	
13,900.00	90.70	359.44	12,601.05	1,068.80	897.29	390,163.82	794,823.94	32.06910156	-103.38157679	
14,000.00	90.70	359.44	12,599.83	1,168.79	896.31	390,263.81	794,822.97	32.06937641	-103.38157709	
14,100.00	90.70	359.44	12,598.61	1,268.78	895.33	390,363.80	794,821.99	32.06965127	-103.38157740	
14,200.00	90.70	359.44	12,597.38	1,368.77	894.36	390,463.78	794,821.01	32.06992613	-103.38157771	
14,300.00	90.70	359.44	12,596.16	1,468.75	893.38	390,563.77	794,820.04	32.07020099	-103.38157801	
14,400.00	90.70	359.44	12,594.94	1,568.74	892.40	390,663.76	794,819.06	32.07047585	-103.38157832	
14,500.00	90.70	359.44	12,593.72	1,668.73	891.42	390,763.75	794,818.08	32.07075071	-103.38157863	
14,600.00	90.70	359.44	12,592.50	1,768.72	890.45	390,863.74	794,817.11	32.07102556	-103.38157894	
14,700.00	90.70	359.44	12,591.28	1,868.71	889.47	390,963.72	794,816.13	32.07130042	-103.38157924	
14,800.00	90.70	359.44	12,590.05	1,968.69	888.49	391,063.71	794,815.15	32.07157528	-103.38157955	
14,900.00	90.70	359.44	12,588.83	2,068.68	887.52	391,163.70	794,814.17	32.07185014	-103.38157986	
15,000.00	90.70	359.44	12,587.61	2,168.67	886.54	391,263.69	794,813.20	32.07212500	-103.38158016	
15,025.75	90.70	359.44	12,587.30	2,194.42	886.29	391,289.44	794,812.95	32.07219578	-103.38158024	
PPP-2 (Cave Lion 5 TB Fed #12H)										
15,100.00	90.70	359.44	12,586.39	2,268.66	885.56	391,363.67	794,812.22	32.07239985	-103.38158047	
15,200.00	90.70	359.44	12,585.17	2,368.64	884.58	391,463.66	794,811.24	32.07267471	-103.38158078	
15,300.00	90.70	359.44	12,583.95	2,468.63	883.61	391,563.65	794,810.27	32.07294957	-103.38158108	
15,400.00	90.70	359.44	12,582.72	2,568.62	882.63	391,663.64	794,809.29	32.07322443	-103.38158139	
15,500.00	90.70	359.44	12,581.50	2,668.61	881.65	391,763.63	794,808.31	32.07349929	-103.38158170	
15,600.00	90.70	359.44	12,580.28	2,768.59	880.68	391,863.61	794,807.33	32.07377415	-103.38158200	
15,700.00	90.70	359.44	12,579.06	2,868.58	879.70	391,963.60	794,806.36	32.07404900	-103.38158231	
15,800.00	90.70	359.44	12,577.84	2,968.57	878.72	392,063.59	794,805.38	32.07432386	-103.38158262	
15,900.00	90.70	359.44	12,576.62	3,068.56	877.75	392,163.58	794,804.40	32.07459872	-103.38158292	
16,000.00	90.70	359.44	12,575.39	3,168.55	876.77	392,263.56	794,803.43	32.07487358	-103.38158323	
16,100.00	90.70	359.44	12,574.17	3,268.53	875.79	392,363.55	794,802.45	32.07514844	-103.38158354	
16,200.00	90.70	359.44	12,572.95	3,368.52	874.81	392,463.54	794,801.47	32.07542329	-103.38158384	
16,300.00	90.70	359.44	12,571.73	3,468.51	873.84	392,563.53	794,800.49	32.07569815	-103.38158415	
16,400.00	90.70	359.44	12,570.51	3,568.50	872.86	392,663.52	794,799.52	32.07597301	-103.38158446	
16,500.00	90.70	359.44	12,569.29	3,668.48	871.88	392,763.50	794,798.54	32.07624787	-103.38158476	
16,600.00	90.70	359.44	12,568.06	3,768.47	870.91	392,863.49	794,797.56	32.07652273	-103.38158507	
16,700.00	90.70	359.44	12,566.84	3,868.46	869.93	392,963.48	794,796.59	32.07679758	-103.38158538	
16,800.00	90.70	359.44	12,565.62	3,968.45	868.95	393,063.47	794,795.61	32.07707244	-103.38158568	

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,900.00	90.70	359.44	12,564.40	4,068.44	867.97	393,163.45	794,794.63	32.07734730	-103.38158599
17,000.00	90.70	359.44	12,563.18	4,168.42	867.00	393,263.44	794,793.65	32.07762216	-103.38158630
17,100.00	90.70	359.44	12,561.96	4,268.41	866.02	393,363.43	794,792.68	32.07789702	-103.38158660
17,200.00	90.70	359.44	12,560.73	4,368.40	865.04	393,463.42	794,791.70	32.07817187	-103.38158691
17,300.00	90.70	359.44	12,559.51	4,468.39	864.07	393,563.41	794,790.72	32.07844673	-103.38158722
17,400.00	90.70	359.44	12,558.29	4,568.37	863.09	393,663.39	794,789.75	32.07872159	-103.38158752
17,500.00	90.70	359.44	12,557.07	4,668.36	862.11	393,763.38	794,788.77	32.07899645	-103.38158783
17,561.82	90.70	359.44	12,556.31	4,730.17	861.51	393,825.19	794,788.17	32.07916637	-103.38158802
TD - 17561.82 MD, 12556.31 TVD - PBHL-10' (Cave Lion 5 TB Fed #12H) - PBHL (Cave Lion 5 TB Fed #12H)									

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
VP (Cave Lion 5 TB Fed - plan hits target center - Point	0.00	0.00	8,170.00	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245
PBHL (Cave Lion 5 TB F - plan misses target center by 10.00usft at 17561.82usft MD (12556.31 TVD, 4730.17 N, 861.51 E) - Point	0.00	0.00	12,556.19	4,740.17	861.41	393,835.19	794,788.07	32.07919384	-103.38158805
PBHL-10' (Cave Lion 5 T - plan hits target center - Point	0.00	0.00	12,556.31	4,730.18	861.51	393,825.19	794,788.17	32.07916637	-103.38158802
FTP (Cave Lion 5 TB Fe - plan misses target center by 200.27usft at 12600.00usft MD (12479.71 TVD, -196.59 N, 909.65 E) - Point	0.00	0.00	12,615.60	-343.70	911.09	388,751.32	794,837.75	32.06521870	-103.38157245

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,061.00	1,061.00	Rustler		-0.70	359.44	
1,499.00	1,499.00	Salado		-0.70	359.44	
3,555.21	3,539.96	Castille		-0.70	359.44	
5,404.74	5,361.38	Lamar/Base Salt		-0.70	359.44	
5,434.21	5,390.40	Bell Canyon		-0.70	359.44	
6,789.86	6,725.44	Cherry Canyon		-0.70	359.44	
8,086.09	8,006.29	Brushy Canyon		-0.70	359.44	
9,383.16	9,303.31	Bone Spring		-0.70	359.44	
10,552.16	10,472.31	First Bone Spring		-0.70	359.44	
10,693.16	10,613.31	First Bone Spring Base		-0.70	359.44	
11,070.16	10,990.31	Second Bone Spring		-0.70	359.44	
11,613.16	11,533.31	Second Bone Spring Base		-0.70	359.44	
12,165.16	12,085.31	Third Bone Spring		-0.70	359.44	
12,647.91	12,511.07	Wolfcamp		-0.70	359.44	
12,901.50	12,608.25	Wolfcamp A		-0.70	359.44	
12,970.63	12,612.40	Target Centerline: 12614' KBTVD @ 0' \		-0.70	359.44	

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Site Cave Lion 5
Company:	Marathon Oil Corporation	TVD Reference:	KB Elev @ 3253.00usft
Project:	Lea County, NM	MD Reference:	KB Elev @ 3253.00usft
Site:	Cave Lion 5	North Reference:	Grid
Well:	Cave Lion 5 TB Federal #12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Preliminary Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.00	1,500.00	0.00	0.00	KOP - Build @ 0.5°/100'
2,000.00	1,999.84	-3.85	10.20	Continue Build 0.75°/100'
3,000.30	2,993.48	-42.27	112.04	EOB - Hold @ 10.00 INC, 110.67 AZI
7,583.04	7,506.57	-323.21	856.77	Start Drop @ 2°/100'
8,249.85	8,170.00	-343.70	911.09	EOD - Hold @ 0.00 INC, 0.00 AZI
12,214.83	12,134.98	-343.70	911.09	Start Build @ 12°/100'
12,970.66	12,612.40	139.58	906.37	Landing Point - 12970.66 MD, 12612.40 TVD, 90.70 INC, 359.44 AZI
17,561.82	12,556.31	4,730.17	861.51	TD - 17561.82 MD, 12556.31 TVD

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

CONDITIONS

Action 36462

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 5555 San Felipe St. Houston, TX 77056	OGRID: 372098
	Action Number: 36462
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	9/24/2021