

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☐ DRILL ☐ REENTER 1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. [330442]
2. Name of Operator [373910]		9. API Well No. 10. Field and Pool, or Exploratory 11. Sec., T. R. M. or Blk. and Survey or Area
3a. Address	3b. Phone No. (include area code)	12. County or Parish
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		13. State
14. Distance in miles and direction from nearest town or post office*	15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	
16. No of acres in lease	17. Spacing Unit dedicated to this well	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	
20. BLM/BIA Bond No. in file	21. Elevations (Show whether DF, KDB, RT, GL, etc.)	
22. Approximate date work will start*	23. Estimated duration	
24. Attachments		

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

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

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

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

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

GCP Rec 04/07/2021

SL

(Continued on page 2)



Approval Date: 01/15/2021

 KZ
 04/09/2021

*(Instructions on page 2)

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: LOT 2 / 250 FNL / 2374 FEL / TWSP: 25S / RANGE: 35E / SECTION: 1 / LAT: 32.166034 / LONG: -103.320391 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 3 / 612 FNL / 2264 FWL / TWSP: 25S / RANGE: 35E / SECTION: 1 / LAT: 32.16504 / LONG: -103.322465 (TVD: 12001 feet, MD: 12363 feet)

BHL: SESW / 150 FSL / 2265 FWL / TWSP: 25S / RANGE: 35E / SECTION: 12 / LAT: 32.138065 / LONG: -103.322442 (TVD: 12095 feet, MD: 22178 feet)

BLM Point of Contact

Name: TYLER HILL

Title: LIE

Phone: (575) 234-5972

Email: tjhill@blm.gov

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Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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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 30-025-48620		² Pool Code 98187	³ Pool Name WC-025 G-09 S253502D;UPR WOLFCAMP	
⁴ Property Code 330442	⁵ Property Name MERIT FEDERAL			⁶ Well Number 703H
⁷ OGRID No. 373910	⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC			⁹ Elevation 3324.9'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	1	25S	35E		250	NORTH	2374	EAST	LEA

"Bottom Hole Location If Different From Surface

UL or lot no. N	Section 12	Township 25S	Range 35E	Lot Idn	Feet from the 150	North/South line SOUTH	Feet from the 2265	East/West line WEST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N72°30'28"W	674.44'
L2	S00°20'23"E	567.56'

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'57.72" (32.166034°)
LONGITUDE = 103°19'13.41" (103.320391°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'57.26" (32.165907°)
LONGITUDE = 103°19'11.73" (103.319926°)
STATE PLANE NAD 83 (N.M. EAST)
N: 425613.17' E: 854777.43'
STATE PLANE NAD 27 (N.M. EAST)
N: 425554.36' E: 813590.97'

NAD 83 (KICK OFF POINT)
LATITUDE = 32°09'59.76" (32.166600°)
LONGITUDE = 103°19'20.88" (103.322466°)
NAD 27 (KICK OFF POINT)
LATITUDE = 32°09'59.30" (32.166473°)
LONGITUDE = 103°19'19.20" (103.322001°)
STATE PLANE NAD 83 (N.M. EAST)
N: 425813.17' E: 854133.43'
STATE PLANE NAD 27 (N.M. EAST)
N: 425754.37' E: 812946.99'

NAD 83 (PPP #1)
LATITUDE = 32°09'54.14" (32.165040°)
LONGITUDE = 103°19'20.87" (103.322465°)
NAD 27 (PPP #1)
LATITUDE = 32°09'53.69" (32.164914°)
LONGITUDE = 103°19'19.20" (103.322000°)
STATE PLANE NAD 83 (N.M. EAST)
N: 425245.72' E: 854139.17'
STATE PLANE NAD 27 (N.M. EAST)
N: 425186.94' E: 812952.71'

NAD 83 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'17.03" (32.138065°)
LONGITUDE = 103°19'20.79" (103.322442°)
NAD 27 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'16.58" (32.137938°)
LONGITUDE = 103°19'19.12" (103.321978°)
STATE PLANE NAD 83 (N.M. EAST)
N: 415432.18' E: 854238.39'
STATE PLANE NAD 27 (N.M. EAST)
N: 415373.66' E: 813051.54'

NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

- = SURFACE HOLE LOCATION
 ◆ = KICK OFF POINT/PPP
 ○ = BOTTOM HOLE LOCATION
 ▲ = SECTION CORNER LOCATED
 △ = SECTION CORNER
 RE-ESTABLISHED.
 (Not Set on Ground.)



SCALE

DRAWN BY: T.A. 02-24-20

REV: 1 05-11-20 D.J.S.

(ADD TAKE POINTS, LEASE INFO & NAME CHANGE)

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 5-12-2020
Date

Shelly Albrecht
Printed Name

salbrecht@fmellc.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 13, 2020

Date of Survey _____
Signature and Seal of Professional Surveyor: _____



Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
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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: 12/2/2020

☒ Original

Operator & OGRID No.: Franklin Mountain Energy, LLC 373910

☐ 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
Merit Federal 602H	TBD	Lot 2-1-25S-35E	250 FNL 2409 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Merit Federal 703H 30,025-48620	TBD	Lot 2-1-25S-35E	250 FNL 2374 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Mission Fed Com 704H	TBD	Lot 2-1-25S-35E	250 FNL 2339 FEL	1100 +/-	Flared	New well; expect to tie-in at IP

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 Lucid Energy and will be connected to Lucid Energy's gathering system located in Lea County, New Mexico. It will require 5,000' of pipeline to connect the facility to low/high pressure gathering system. Franklin Mountain Energy, LLC provides (periodically) to Lucid Energy a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Franklin Mountain Energy, LLC and Lucid Energy have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Lucid Energy's Red Hills Processing Plant located in Sec.13, Twn. 24S, Rng. 33E, 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 permanent central tank battery and gas will be sold or flared. Gas sales should start as soon as the wells start producing gas unless there are operational issues on Lucid Energy's system at that time. Based on current information, it is Franklin Mountain Energy'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



Merit Federal 703H

1. Geologic name of surface location: Permian
2. Estimated tops of important geological markers:

Formations	PROG SS	PROG TVD	Picked TVD	delta	Potential/Issues
Cenozoic Alluvium (surface)	3,325'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,136'	1,219'			Carbonates
Salado	2,018'	1,337'			Salt, Carbonate & Clastics
Base Salt	-133'	3,488'			Shaley Carbonate & Shale
Lamar	-1,698'	5,053'			Carbonate & Clastics
Bell Canyon	-1,756'	5,111'			Sandstone - oil/gas/water
Cherry Canyon	-2,644'	5,999'			Sandstone - oil/gas/water
Brushy Canyon	-4,065'	7,420'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,340'	8,695'			Shale/Carbonates - oil/gas
Avalon	-5,437'	8,792'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,629'	9,984'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,759'	10,114'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,135'	10,490'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,683'	11,038'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,215'	11,570'			Sandstone - oil/gas/water
Wolfcamp	-8,532'	11,887'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,567'	11,922'			Overpressure Shale - Oil/Gas
HZ Target	-8,644'	11,999'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,759'	12,114'			Overpressure Shale - Oil/Gas

3. Estimated depth of anticipated fresh water, oil or gas:

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,053'	Oil
Bone Spring	9,984'	Oil
Wolfcamp	11,887'	Oil

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Surface freshwater sands will be protected by setting 13 3/8" casing at 1,300' and circulating cement back to surface.

4. Casing Program:

All casings strings will be run new. Safety factors calculated assuming the well is vertical.

Casing string	Weight	Grade	Burst	Collapse	Tension	Conn	Length	API design factor			
								Burst	Collapse	Tension	Coupling
Surface 13 3/8"	54.5	J-55	2730	1130	853	BTC 909	1300	1.18	1.67	4.99	5.32
Intermediate 9 5/8"	40	HCL-80	7430	4230	916	BTC 1042	5400	1.72	1.67	2.90	3.30
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	11950	1.11	1.28	1.82	1.24
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	22178	1.32	1.4	1.19	1.08



Preliminary plan is to set 7 5/8" string before entering Wolfcamp formation at 11,855'TVD/11,950'MD at 48° Inc due too potential overpressure. Safety factors calculated assuming the well is vertical.

Cementing Program:

Cementing Stage tool can be placed in the 1st Intermediate string as a contingency to ensure required TOC to surface.

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Type of cmt	Lead Yield ft ³ /sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft ³ /sk	Water gal/sk	TOC	Excess
Surf	17.5	13.375	1300	795	Extenda Cem, 13.5 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	334	HalCem TM, 14.8 ppg, Class C, 1% CaCl ₂ , 0.125pps Celo-Flake	1.349	6.51	1000	100%
Int1	12.25	9.625	5400	1167	0.125pps Poly-E-Flake Neocem TM, 11.5 ppg, Class C 5% Salt,	2.444	14.32	0	153	0.125 pps Poly-E-Flake HalCem TM, 14.8 ppg, Class C, 0.1% HR 800 .125 pps Poly-E-Flake	1.334	6.42	5100	100%
Int2	8.75	7.625	11950	338	NeoCem, 11 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake	2.798	17.15	4400	112	NeoCem 13.2 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.44	7.29	10950	50%
Prod	6.75	5.5	22178	827	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	10950						20%

5. Minimum Specifications for Pressure Control:

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5,000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on bottom and 4 ½" x 7" variable pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5,000/250 psig and the annular preventer to 5,000/250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the second intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/250 psig and the annular preventer to 5,000/250 psig. The second intermediate casing will be tested to 2000 psi for 30 minutes prior to drillout.

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.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.



6. Types and characteristics of the proposed mud system:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal. The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,300'	Fresh - Gel	8.6-8.8	28-34	N/c
1,300' – 11,950'	Brine	8.8-10.2	28-34	N/c
11,950' – 22,178' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 10-11 ppg. In order to maintain hole stability, mud weights up to 12.5 ppg may be utilized.

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

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

7. Auxiliary well control and monitoring equipment:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

(D) A wear bushing will be installed in the wellhead prior to drilling out of the surface casing.

8. Logging, testing and coring program:

GR–CCL–CNL Will be run in cased hole during completions phase of operations.

Open-hole logs are not planned for this well.

9. Abnormal conditions, pressures, temperatures and potential hazards:

The estimated bottom-hole temperature at 12,095' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,594 psig (based on 12.5 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment

a. Well Control Equipment

i. Flare line 150' from wellhead to be ignited by auto ignition sparking system.

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

1. Rescue packs (SCBA) – 1 unit shall be placed at each briefing area, 2 shall be stored in a safety trailer on site.

2. Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity



3. Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation
- ii. Auxiliary Rescue Equipment
 1. Stretcher
 2. Two OSHA full body harnesses
 3. 100 feet of 5/8 inches OSHA approved rope
 4. 1-20# class ABC fire extinguisher
- c. H2S Detection and Monitoring Equipment
 - i. A stationary detector with three sensors will be placed in the doghouse if equipped, set to visually alarm at 10 ppm and audible at 14 ppm. The detector will be calibrated a minimum of every 30 days or as needed. The sensors will be placed in the following places:
 1. Rig Floor
 2. Below Rig Floor / Near BOPs
 3. End of flow line or where well bore fluid is being discharged (near shakers)
 - ii. If H2S is encountered, measured values and formations will be provided to the BLM.
- d. Visual Warning Systems
 - i. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - ii. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - iii. Two windsocks will be placed in strategic locations, visible from all angles.
- e. Mud Program
 - i. The Mud program will be designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.
- f. Metallurgy
 - i. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service at the anticipated operating pressures to prevent sour sulfide stress cracking.
- g. Communication
 - i. Communication will be via cell phones and walkie talkies on location.

Franklin Mountain Energy has conducted a review of offset operated wells to determine if an H2S contingency plan is required for the proposed well. Based on concentrations of offset wells, proximity to main roads, and distance to populated areas, the radius of exposure created by a potential release was determined to be minimal and low enough to not necessitate an H2S contingency plan. This will be reevaluated during wellbore construction if H2S is observed and after the well is on production.

11. Anticipated starting date and duration of operations:

The drilling operations on the well should be finished in approximately one month. However, in order to minimize disturbance in the area and to improve efficiency Franklin Mountain is planning to drill all the wells on the pad prior to commence completion operations. To even further reduce the time heavy machinery is used the “batch drilling” method may be used. A batch drilling sequence sundry will be submitted for BLM approval prior to spud. A drilling rig with walking/skidding capabilities will be used.

**12. Disposal/environmental concerns:**

- (A) Drilled cuttings will be hauled to and disposed of in a state-certified disposal site.
- (B) Non-hazardous waste mud/cement from the drilling process will be also be hauled to and disposed of in a state-certified disposal site.
- (C) Garbage will be hauled to the Pecos City Landfill.
- (D) Sewage (grey water) will be hauled to the Carlsbad City Landfill

13. Wellhead:

A multi-bowl wellhead system will be utilized.

After running the 13 3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5,000 psi pressure test. This pressure test will be repeated at least every 21 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 5,000 psi.

After running the 2nd intermediate casing, and before drilling out, the wellhead, BOP, and related equipment will be tested to 10,000/250 psig.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cameron Multi-Bowl WH system has been sent to the BLM office in Carlsbad.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing strings. After installation of the first intermediate string the pack-off and lower flanges will be pressure tested to 5000 psi. After installation of the second intermediate string, the pack-off and upper flange will be pressure tested to 10,000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

14. Additional variance requests**A. Casing.**

In order to minimize potential environmental and technical hazards, this well is planned with two intermediate strings of casing.

1. Variance is requested to wave the centralizer requirements for the 7 5/8" casing due to the tight clearance with 9 5/8" string.
2. Variance is requested to wave/reduce the centralizer requirements for the 5 1/2" casing due to the tight clearance with 6 3/4" hole and 5 1/2" casing due to tight clearances.

Project: Lea County, NM (NAD83)
Site: Merit/Mission Fed Com
Well: Merit Fed Com 703H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.01°

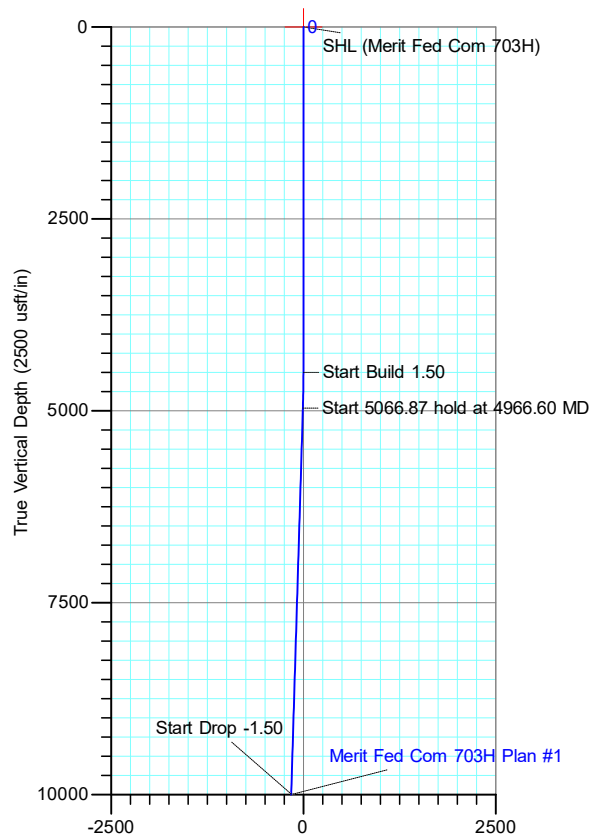
Magnetic Field
Strength: 47601.5nT
Dip Angle: 59.92°
Date: 5/6/2020
Model: IGRF2020

PROJECT DETAILS: Lea County, NM (NAD83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



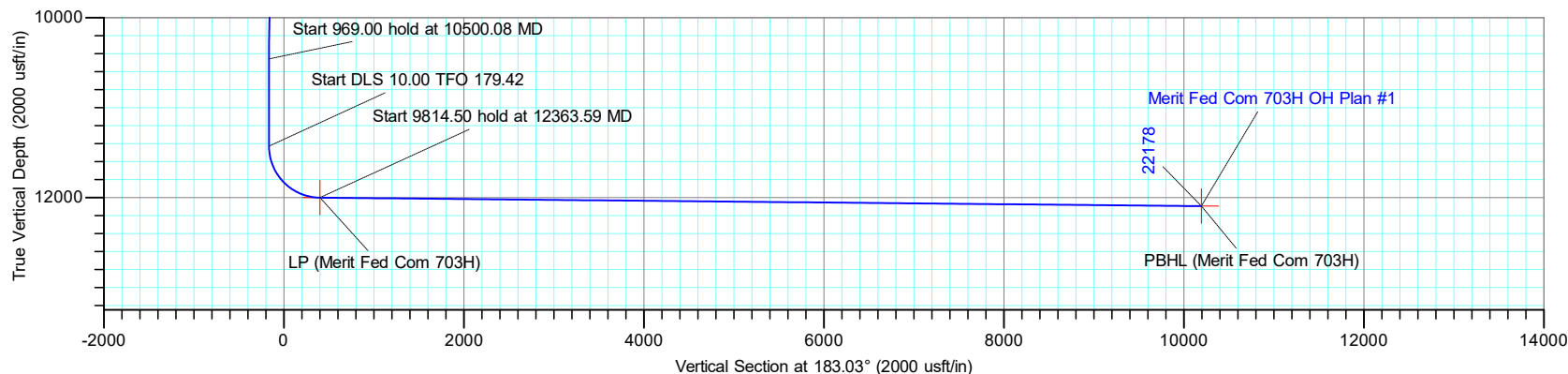
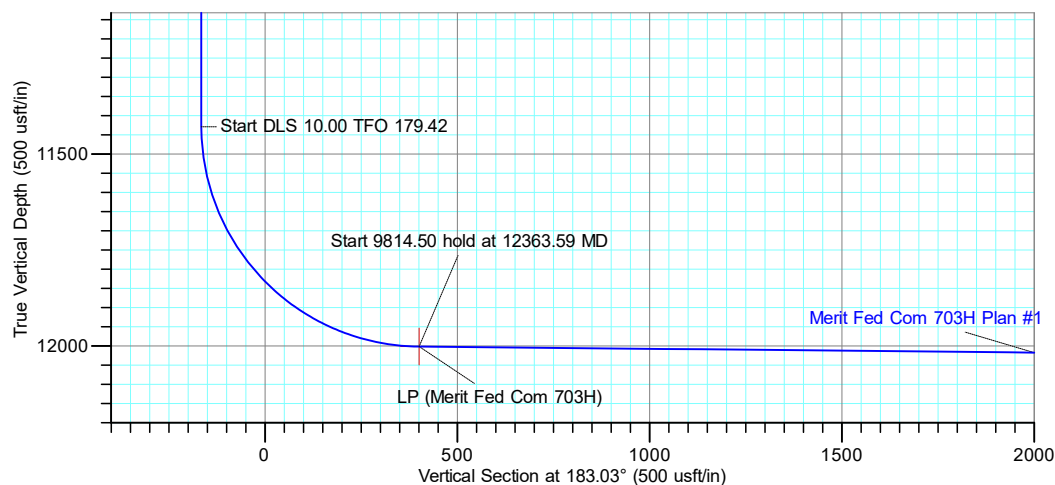
3324.9' GE + 30' KB @ 3354.90usft



MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4966.60	7.00	287.25	4965.44	8.44	-27.18	1.50	287.25	-6.99	Start 5066.87 hold at 4966.60 MD
10033.47	7.00	287.25	9994.56	191.56	-616.82	0.00	0.00	-158.68	Start Drop -1.50
10500.08	0.00	0.00	10460.00	200.00	-644.00	1.50	180.00	-165.67	Start 969.00 hold at 10500.08 MD
11469.08	0.00	0.00	11429.00	200.00	-644.00	0.00	0.00	-165.67	Start DLS 10.00 TFO 179.42
12363.59	89.45	179.42	12001.93	-367.44	-638.26	10.00	179.42	400.68	Start 9814.50 hold at 12363.59 MD
22178.09	89.45	179.42	12095.87	-10180.99	-539.04	0.00	0.00	10195.25	TD at 22178.09

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Merit Fed Com 703H)	12001.93	-367.44	-638.26	32.165040	-103.322465
PBHL (Merit Fed Com 703H)	12095.87	-10180.99	-539.04	32.138065	-103.322442
SHL (Merit Fed Com 703H)	0.00	0.00	0.00	32.166034	-103.320391



Project: Lea County, NM (NAD83)
 Site: Merit/Mission Fed Com
 Well: Merit Fed Com 703H
 Wellbore: OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.54°
 Magnetic North: 6.01°

Magnetic Field
 Strength: 47601.5nT
 Dip Angle: 59.92°
 Date: 5/6/2020
 Model: IGRF2020

PROJECT DETAILS: Lea County, NM (NAD83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

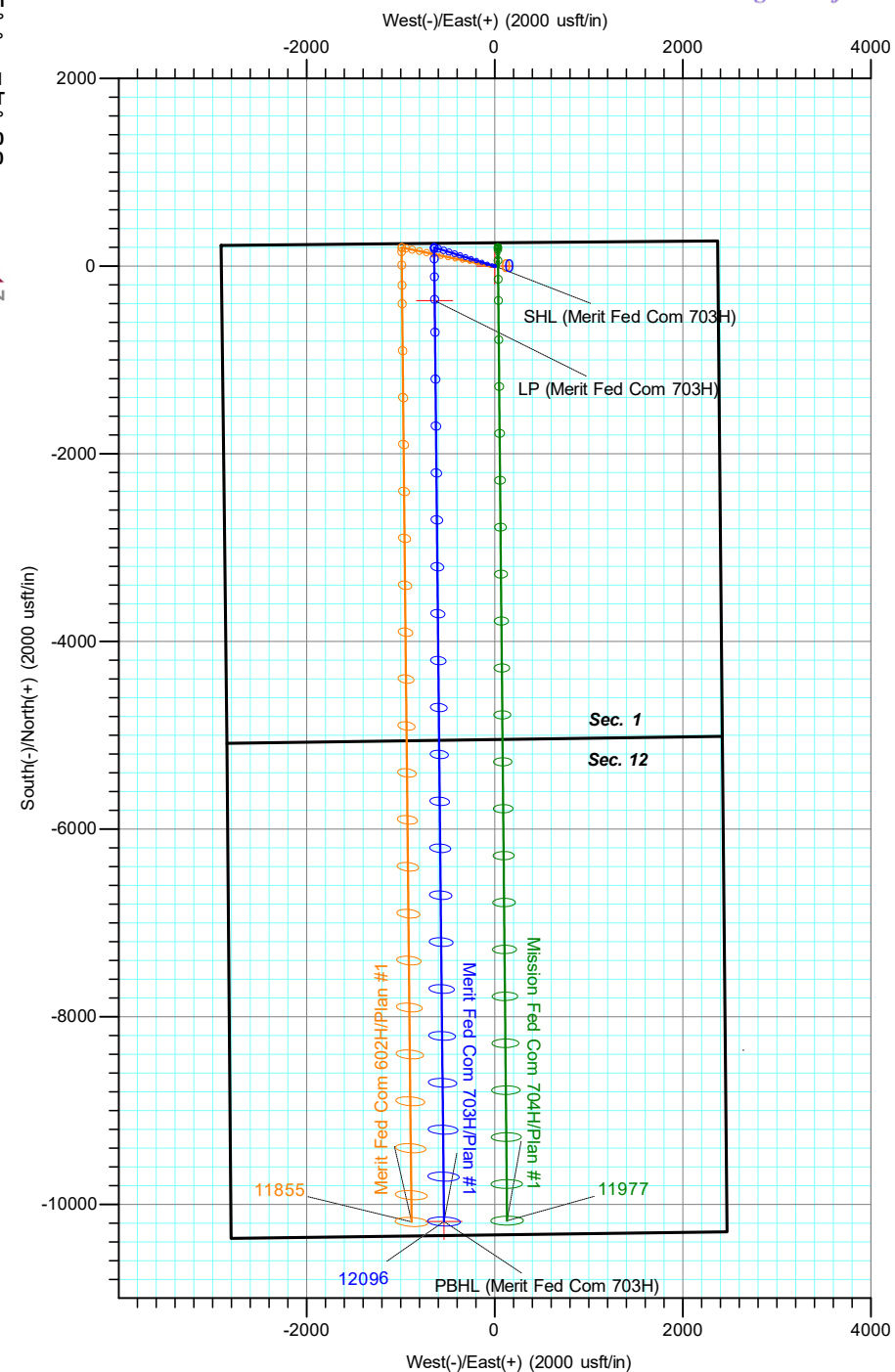
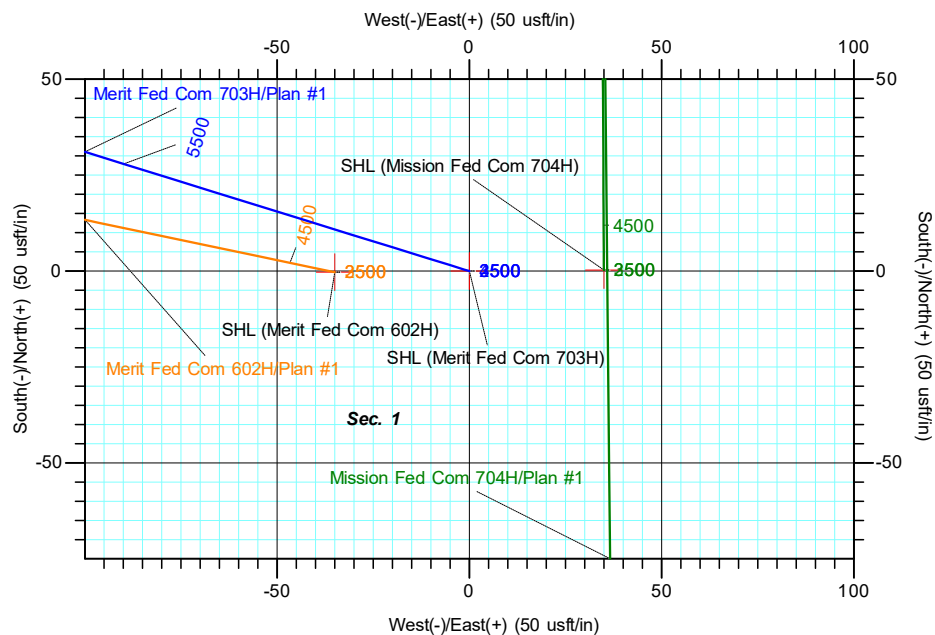


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Merit Fed Com 703H)	12001.93	-367.44	-638.26	425245.73	854139.17	32.165040	-103.322465
PBHL (Merit Fed Com 703H)	12095.87	-10180.99	-539.04	415432.18	854238.39	32.138065	-103.322442
SHL (Merit Fed Com 703H)	0.00	0.00	0.00	425613.17	854777.43	32.166034	-103.320391

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4966.60	7.00	287.25	4965.44	8.44	-27.18	1.50	287.25	-6.99	Start 5066.87 hold at 4966.60 MD
10033.47	7.00	287.25	9994.56	191.56	-616.82	0.00	0.00	-158.68	Start Drop -1.50
10500.08	0.00	0.00	10460.00	200.00	-644.00	1.50	180.00	-165.67	Start 969.00 hold at 10500.08 MD
11469.08	0.00	0.00	11429.00	200.00	-644.00	0.00	0.00	-165.67	Start DLS 10.00 TFO 179.42
12363.59	89.45	179.42	12001.93	-367.44	-638.26	10.00	179.42	400.68	Start 9814.50 hold at 12363.59 MD
22178.09	89.45	179.42	12095.87	-10180.99	-539.04	0.00	0.00	10195.25	TD at 22178.09





Franklin Mountain Energy

Lea County, NM (NAD83)

Merit/Mission Fed Com

Merit Fed Com 703H

OH

Plan: Plan #1

Standard Planning Report

07 May, 2020





Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Merit/Mission Fed Com				
Site Position:		Northing:	425,612.89 usft	Latitude:	32.166034
From:	Map	Easting:	854,742.44 usft	Longitude:	-103.320505
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Merit Fed Com 703H					
Well Position	+N/-S	0.28 usft	Northing:	425,613.17 usft	Latitude:	32.166034
	+E/-W	34.99 usft	Easting:	854,777.43 usft	Longitude:	-103.320392
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,324.90 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/6/2020	6.55	59.92	47,601.47454890

Design	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	183.03

Plan Survey Tool Program	Date	5/7/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,177.79 Plan #1 (OH)	OWSG (Rev2) MWD	
			OWSG MWD - Standard	

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	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,966.60	7.00	287.25	4,965.44	8.44	-27.18	1.50	1.50	0.00	287.25	
10,033.47	7.00	287.25	9,994.56	191.56	-616.82	0.00	0.00	0.00	0.00	
10,500.08	0.00	0.00	10,460.00	200.00	-644.00	1.50	-1.50	0.00	180.00	
11,469.08	0.00	0.00	11,429.00	200.00	-644.00	0.00	0.00	0.00	0.00	
12,363.59	89.45	179.42	12,001.93	-367.44	-638.26	10.00	10.00	20.06	179.42	
22,178.09	89.45	179.42	12,095.87	-10,180.99	-539.04	0.00	0.00	0.00	0.00	PBHL (Merit Fed Corr)



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (Merit Fed Com 703H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
4,600.00	1.50	287.25	4,599.99	0.39	-1.25	-0.32	1.50	1.50	0.00
4,700.00	3.00	287.25	4,699.91	1.55	-5.00	-1.29	1.50	1.50	0.00
4,800.00	4.50	287.25	4,799.69	3.49	-11.25	-2.89	1.50	1.50	0.00
4,900.00	6.00	287.25	4,899.27	6.21	-19.98	-5.14	1.50	1.50	0.00
4,966.60	7.00	287.25	4,965.44	8.44	-27.18	-6.99	1.50	1.50	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Start 5066.87 hold at 4966.60 MD									
5,000.00	7.00	287.25	4,998.59	9.65	-31.07	-7.99	0.00	0.00	0.00
5,100.00	7.00	287.25	5,097.85	13.26	-42.71	-10.99	0.00	0.00	0.00
5,200.00	7.00	287.25	5,197.10	16.88	-54.34	-13.98	0.00	0.00	0.00
5,300.00	7.00	287.25	5,296.36	20.49	-65.98	-16.97	0.00	0.00	0.00
5,400.00	7.00	287.25	5,395.61	24.10	-77.62	-19.97	0.00	0.00	0.00
5,500.00	7.00	287.25	5,494.87	27.72	-89.25	-22.96	0.00	0.00	0.00
5,600.00	7.00	287.25	5,594.12	31.33	-100.89	-25.95	0.00	0.00	0.00
5,700.00	7.00	287.25	5,693.38	34.95	-112.53	-28.95	0.00	0.00	0.00
5,800.00	7.00	287.25	5,792.63	38.56	-124.17	-31.94	0.00	0.00	0.00
5,900.00	7.00	287.25	5,891.89	42.17	-135.80	-34.94	0.00	0.00	0.00
6,000.00	7.00	287.25	5,991.14	45.79	-147.44	-37.93	0.00	0.00	0.00
6,100.00	7.00	287.25	6,090.39	49.40	-159.08	-40.92	0.00	0.00	0.00
6,200.00	7.00	287.25	6,189.65	53.02	-170.71	-43.92	0.00	0.00	0.00
6,300.00	7.00	287.25	6,288.90	56.63	-182.35	-46.91	0.00	0.00	0.00
6,400.00	7.00	287.25	6,388.16	60.24	-193.99	-49.90	0.00	0.00	0.00
6,500.00	7.00	287.25	6,487.41	63.86	-205.63	-52.90	0.00	0.00	0.00
6,600.00	7.00	287.25	6,586.67	67.47	-217.26	-55.89	0.00	0.00	0.00
6,700.00	7.00	287.25	6,685.92	71.09	-228.90	-58.89	0.00	0.00	0.00
6,800.00	7.00	287.25	6,785.18	74.70	-240.54	-61.88	0.00	0.00	0.00
6,900.00	7.00	287.25	6,884.43	78.31	-252.17	-64.87	0.00	0.00	0.00
7,000.00	7.00	287.25	6,983.69	81.93	-263.81	-67.87	0.00	0.00	0.00
7,100.00	7.00	287.25	7,082.94	85.54	-275.45	-70.86	0.00	0.00	0.00
7,200.00	7.00	287.25	7,182.20	89.16	-287.08	-73.85	0.00	0.00	0.00
7,300.00	7.00	287.25	7,281.45	92.77	-298.72	-76.85	0.00	0.00	0.00
7,400.00	7.00	287.25	7,380.71	96.38	-310.36	-79.84	0.00	0.00	0.00
7,500.00	7.00	287.25	7,479.96	100.00	-322.00	-82.83	0.00	0.00	0.00
7,600.00	7.00	287.25	7,579.22	103.61	-333.63	-85.83	0.00	0.00	0.00
7,700.00	7.00	287.25	7,678.47	107.23	-345.27	-88.82	0.00	0.00	0.00
7,800.00	7.00	287.25	7,777.73	110.84	-356.91	-91.82	0.00	0.00	0.00
7,900.00	7.00	287.25	7,876.98	114.45	-368.54	-94.81	0.00	0.00	0.00
8,000.00	7.00	287.25	7,976.24	118.07	-380.18	-97.80	0.00	0.00	0.00
8,100.00	7.00	287.25	8,075.49	121.68	-391.82	-100.80	0.00	0.00	0.00
8,200.00	7.00	287.25	8,174.75	125.30	-403.45	-103.79	0.00	0.00	0.00
8,300.00	7.00	287.25	8,274.00	128.91	-415.09	-106.78	0.00	0.00	0.00
8,400.00	7.00	287.25	8,373.26	132.52	-426.73	-109.78	0.00	0.00	0.00
8,500.00	7.00	287.25	8,472.51	136.14	-438.37	-112.77	0.00	0.00	0.00
8,600.00	7.00	287.25	8,571.77	139.75	-450.00	-115.76	0.00	0.00	0.00
8,700.00	7.00	287.25	8,671.02	143.37	-461.64	-118.76	0.00	0.00	0.00
8,800.00	7.00	287.25	8,770.27	146.98	-473.28	-121.75	0.00	0.00	0.00
8,900.00	7.00	287.25	8,869.53	150.59	-484.91	-124.75	0.00	0.00	0.00
9,000.00	7.00	287.25	8,968.78	154.21	-496.55	-127.74	0.00	0.00	0.00
9,100.00	7.00	287.25	9,068.04	157.82	-508.19	-130.73	0.00	0.00	0.00
9,200.00	7.00	287.25	9,167.29	161.44	-519.83	-133.73	0.00	0.00	0.00
9,300.00	7.00	287.25	9,266.55	165.05	-531.46	-136.72	0.00	0.00	0.00
9,400.00	7.00	287.25	9,365.80	168.66	-543.10	-139.71	0.00	0.00	0.00
9,500.00	7.00	287.25	9,465.06	172.28	-554.74	-142.71	0.00	0.00	0.00
9,600.00	7.00	287.25	9,564.31	175.89	-566.37	-145.70	0.00	0.00	0.00
9,700.00	7.00	287.25	9,663.57	179.51	-578.01	-148.69	0.00	0.00	0.00
9,800.00	7.00	287.25	9,762.82	183.12	-589.65	-151.69	0.00	0.00	0.00
9,900.00	7.00	287.25	9,862.08	186.73	-601.28	-154.68	0.00	0.00	0.00
10,000.00	7.00	287.25	9,961.33	190.35	-612.92	-157.68	0.00	0.00	0.00
10,033.47	7.00	287.25	9,994.56	191.56	-616.82	-158.68	0.00	0.00	0.00
Start Drop -1.50									



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,100.00	6.00	287.25	10,060.65	193.79	-624.01	-160.53	1.50	-1.50	0.00	
10,200.00	4.50	287.25	10,160.23	196.51	-632.75	-162.78	1.50	-1.50	0.00	
10,300.00	3.00	287.25	10,260.01	198.45	-639.00	-164.38	1.50	-1.50	0.00	
10,400.00	1.50	287.25	10,359.93	199.61	-642.75	-165.35	1.50	-1.50	0.00	
10,500.08	0.00	0.00	10,460.00	200.00	-644.00	-165.67	1.50	-1.50	0.00	
Start 969.00 hold at 10500.08 MD										
10,600.00	0.00	0.00	10,559.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,659.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,759.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,859.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,959.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,059.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,159.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,259.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,359.92	200.00	-644.00	-165.67	0.00	0.00	0.00	
11,469.08	0.00	0.00	11,429.00	200.00	-644.00	-165.67	0.00	0.00	0.00	
Start DLS 10.00 TFO 179.42										
11,500.00	3.09	179.42	11,459.91	199.17	-643.99	-164.84	10.00	10.00	0.00	
11,550.00	8.09	179.42	11,509.65	194.30	-643.94	-159.98	10.00	10.00	0.00	
11,600.00	13.09	179.42	11,558.79	185.11	-643.85	-150.81	10.00	10.00	0.00	
11,650.00	18.09	179.42	11,606.93	171.67	-643.71	-137.40	10.00	10.00	0.00	
11,700.00	23.09	179.42	11,653.72	154.09	-643.54	-119.85	10.00	10.00	0.00	
11,750.00	28.09	179.42	11,698.80	132.50	-643.32	-98.30	10.00	10.00	0.00	
11,800.00	33.09	179.42	11,741.83	107.07	-643.06	-72.92	10.00	10.00	0.00	
11,850.00	38.09	179.42	11,782.48	77.98	-642.77	-43.88	10.00	10.00	0.00	
11,900.00	43.09	179.42	11,820.43	45.45	-642.44	-11.42	10.00	10.00	0.00	
11,950.00	48.09	179.42	11,855.41	9.75	-642.08	24.21	10.00	10.00	0.00	
12,000.00	53.09	179.42	11,887.14	-28.87	-641.69	62.76	10.00	10.00	0.00	
12,050.00	58.09	179.42	11,915.38	-70.11	-641.27	103.91	10.00	10.00	0.00	
12,100.00	63.09	179.42	11,939.93	-113.65	-640.83	147.37	10.00	10.00	0.00	
12,150.00	68.09	179.42	11,960.58	-159.16	-640.37	192.80	10.00	10.00	0.00	
12,200.00	73.09	179.42	11,977.19	-206.30	-639.89	239.85	10.00	10.00	0.00	
12,250.00	78.09	179.42	11,989.63	-254.71	-639.40	288.16	10.00	10.00	0.00	
12,300.00	83.09	179.42	11,997.80	-304.02	-638.90	337.38	10.00	10.00	0.00	
12,350.00	88.09	179.42	12,001.64	-353.86	-638.40	387.11	10.00	10.00	0.00	
12,363.59	89.45	179.42	12,001.93	-367.44	-638.26	400.67	10.00	10.00	0.00	
Start 9814.50 hold at 12363.59 MD - LP (Merit Fed Com 703H)										
12,400.00	89.45	179.42	12,002.28	-403.85	-637.89	437.01	0.00	0.00	0.00	
12,500.00	89.45	179.42	12,003.24	-503.84	-636.88	536.81	0.00	0.00	0.00	
12,600.00	89.45	179.42	12,004.19	-603.83	-635.87	636.60	0.00	0.00	0.00	
12,700.00	89.45	179.42	12,005.15	-703.82	-634.86	736.40	0.00	0.00	0.00	
12,800.00	89.45	179.42	12,006.11	-803.81	-633.85	836.20	0.00	0.00	0.00	
12,900.00	89.45	179.42	12,007.07	-903.80	-632.84	936.00	0.00	0.00	0.00	
13,000.00	89.45	179.42	12,008.02	-1,003.79	-631.83	1,035.79	0.00	0.00	0.00	
13,100.00	89.45	179.42	12,008.98	-1,103.78	-630.82	1,135.59	0.00	0.00	0.00	
13,200.00	89.45	179.42	12,009.94	-1,203.77	-629.81	1,235.39	0.00	0.00	0.00	
13,300.00	89.45	179.42	12,010.89	-1,303.76	-628.80	1,335.18	0.00	0.00	0.00	
13,400.00	89.45	179.42	12,011.85	-1,403.75	-627.78	1,434.98	0.00	0.00	0.00	
13,500.00	89.45	179.42	12,012.81	-1,503.74	-626.77	1,534.78	0.00	0.00	0.00	
13,600.00	89.45	179.42	12,013.77	-1,603.73	-625.76	1,634.57	0.00	0.00	0.00	
13,700.00	89.45	179.42	12,014.72	-1,703.72	-624.75	1,734.37	0.00	0.00	0.00	
13,800.00	89.45	179.42	12,015.68	-1,803.71	-623.74	1,834.17	0.00	0.00	0.00	
13,900.00	89.45	179.42	12,016.64	-1,903.70	-622.73	1,933.97	0.00	0.00	0.00	



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,000.00	89.45	179.42	12,017.59	-2,003.69	-621.72	2,033.76	0.00	0.00	0.00
14,100.00	89.45	179.42	12,018.55	-2,103.68	-620.71	2,133.56	0.00	0.00	0.00
14,200.00	89.45	179.42	12,019.51	-2,203.67	-619.70	2,233.36	0.00	0.00	0.00
14,300.00	89.45	179.42	12,020.47	-2,303.66	-618.69	2,333.15	0.00	0.00	0.00
14,400.00	89.45	179.42	12,021.42	-2,403.65	-617.68	2,432.95	0.00	0.00	0.00
14,500.00	89.45	179.42	12,022.38	-2,503.65	-616.66	2,532.75	0.00	0.00	0.00
14,600.00	89.45	179.42	12,023.34	-2,603.64	-615.65	2,632.54	0.00	0.00	0.00
14,700.00	89.45	179.42	12,024.29	-2,703.63	-614.64	2,732.34	0.00	0.00	0.00
14,800.00	89.45	179.42	12,025.25	-2,803.62	-613.63	2,832.14	0.00	0.00	0.00
14,900.00	89.45	179.42	12,026.21	-2,903.61	-612.62	2,931.94	0.00	0.00	0.00
15,000.00	89.45	179.42	12,027.17	-3,003.60	-611.61	3,031.73	0.00	0.00	0.00
15,100.00	89.45	179.42	12,028.12	-3,103.59	-610.60	3,131.53	0.00	0.00	0.00
15,200.00	89.45	179.42	12,029.08	-3,203.58	-609.59	3,231.33	0.00	0.00	0.00
15,300.00	89.45	179.42	12,030.04	-3,303.57	-608.58	3,331.12	0.00	0.00	0.00
15,400.00	89.45	179.42	12,030.99	-3,403.56	-607.57	3,430.92	0.00	0.00	0.00
15,500.00	89.45	179.42	12,031.95	-3,503.55	-606.55	3,530.72	0.00	0.00	0.00
15,600.00	89.45	179.42	12,032.91	-3,603.54	-605.54	3,630.51	0.00	0.00	0.00
15,700.00	89.45	179.42	12,033.87	-3,703.53	-604.53	3,730.31	0.00	0.00	0.00
15,800.00	89.45	179.42	12,034.82	-3,803.52	-603.52	3,830.11	0.00	0.00	0.00
15,900.00	89.45	179.42	12,035.78	-3,903.51	-602.51	3,929.91	0.00	0.00	0.00
16,000.00	89.45	179.42	12,036.74	-4,003.50	-601.50	4,029.70	0.00	0.00	0.00
16,100.00	89.45	179.42	12,037.69	-4,103.49	-600.49	4,129.50	0.00	0.00	0.00
16,200.00	89.45	179.42	12,038.65	-4,203.48	-599.48	4,229.30	0.00	0.00	0.00
16,300.00	89.45	179.42	12,039.61	-4,303.47	-598.47	4,329.09	0.00	0.00	0.00
16,400.00	89.45	179.42	12,040.57	-4,403.46	-597.46	4,428.89	0.00	0.00	0.00
16,500.00	89.45	179.42	12,041.52	-4,503.45	-596.44	4,528.69	0.00	0.00	0.00
16,600.00	89.45	179.42	12,042.48	-4,603.44	-595.43	4,628.48	0.00	0.00	0.00
16,700.00	89.45	179.42	12,043.44	-4,703.43	-594.42	4,728.28	0.00	0.00	0.00
16,800.00	89.45	179.42	12,044.39	-4,803.42	-593.41	4,828.08	0.00	0.00	0.00
16,900.00	89.45	179.42	12,045.35	-4,903.41	-592.40	4,927.88	0.00	0.00	0.00
17,000.00	89.45	179.42	12,046.31	-5,003.40	-591.39	5,027.67	0.00	0.00	0.00
17,100.00	89.45	179.42	12,047.27	-5,103.39	-590.38	5,127.47	0.00	0.00	0.00
17,200.00	89.45	179.42	12,048.22	-5,203.38	-589.37	5,227.27	0.00	0.00	0.00
17,300.00	89.45	179.42	12,049.18	-5,303.37	-588.36	5,327.06	0.00	0.00	0.00
17,400.00	89.45	179.42	12,050.14	-5,403.36	-587.35	5,426.86	0.00	0.00	0.00
17,500.00	89.45	179.42	12,051.09	-5,503.35	-586.33	5,526.66	0.00	0.00	0.00
17,600.00	89.45	179.42	12,052.05	-5,603.34	-585.32	5,626.45	0.00	0.00	0.00
17,700.00	89.45	179.42	12,053.01	-5,703.34	-584.31	5,726.25	0.00	0.00	0.00
17,800.00	89.45	179.42	12,053.97	-5,803.33	-583.30	5,826.05	0.00	0.00	0.00
17,900.00	89.45	179.42	12,054.92	-5,903.32	-582.29	5,925.85	0.00	0.00	0.00
18,000.00	89.45	179.42	12,055.88	-6,003.31	-581.28	6,025.64	0.00	0.00	0.00
18,100.00	89.45	179.42	12,056.84	-6,103.30	-580.27	6,125.44	0.00	0.00	0.00
18,200.00	89.45	179.42	12,057.79	-6,203.29	-579.26	6,225.24	0.00	0.00	0.00
18,300.00	89.45	179.42	12,058.75	-6,303.28	-578.25	6,325.03	0.00	0.00	0.00
18,400.00	89.45	179.42	12,059.71	-6,403.27	-577.24	6,424.83	0.00	0.00	0.00
18,500.00	89.45	179.42	12,060.67	-6,503.26	-576.22	6,524.63	0.00	0.00	0.00
18,600.00	89.45	179.42	12,061.62	-6,603.25	-575.21	6,624.42	0.00	0.00	0.00
18,700.00	89.45	179.42	12,062.58	-6,703.24	-574.20	6,724.22	0.00	0.00	0.00
18,800.00	89.45	179.42	12,063.54	-6,803.23	-573.19	6,824.02	0.00	0.00	0.00
18,900.00	89.45	179.42	12,064.49	-6,903.22	-572.18	6,923.82	0.00	0.00	0.00
19,000.00	89.45	179.42	12,065.45	-7,003.21	-571.17	7,023.61	0.00	0.00	0.00
19,100.00	89.45	179.42	12,066.41	-7,103.20	-570.16	7,123.41	0.00	0.00	0.00
19,200.00	89.45	179.42	12,067.37	-7,203.19	-569.15	7,223.21	0.00	0.00	0.00
19,300.00	89.45	179.42	12,068.32	-7,303.18	-568.14	7,323.00	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,400.00	89.45	179.42	12,069.28	-7,403.17	-567.13	7,422.80	0.00	0.00	0.00
19,500.00	89.45	179.42	12,070.24	-7,503.16	-566.11	7,522.60	0.00	0.00	0.00
19,600.00	89.45	179.42	12,071.19	-7,603.15	-565.10	7,622.39	0.00	0.00	0.00
19,700.00	89.45	179.42	12,072.15	-7,703.14	-564.09	7,722.19	0.00	0.00	0.00
19,800.00	89.45	179.42	12,073.11	-7,803.13	-563.08	7,821.99	0.00	0.00	0.00
19,900.00	89.45	179.42	12,074.07	-7,903.12	-562.07	7,921.79	0.00	0.00	0.00
20,000.00	89.45	179.42	12,075.02	-8,003.11	-561.06	8,021.58	0.00	0.00	0.00
20,100.00	89.45	179.42	12,075.98	-8,103.10	-560.05	8,121.38	0.00	0.00	0.00
20,200.00	89.45	179.42	12,076.94	-8,203.09	-559.04	8,221.18	0.00	0.00	0.00
20,300.00	89.45	179.42	12,077.89	-8,303.08	-558.03	8,320.97	0.00	0.00	0.00
20,400.00	89.45	179.42	12,078.85	-8,403.07	-557.02	8,420.77	0.00	0.00	0.00
20,500.00	89.45	179.42	12,079.81	-8,503.06	-556.01	8,520.57	0.00	0.00	0.00
20,600.00	89.45	179.42	12,080.77	-8,603.05	-554.99	8,620.36	0.00	0.00	0.00
20,700.00	89.45	179.42	12,081.72	-8,703.04	-553.98	8,720.16	0.00	0.00	0.00
20,800.00	89.45	179.42	12,082.68	-8,803.03	-552.97	8,819.96	0.00	0.00	0.00
20,900.00	89.45	179.42	12,083.64	-8,903.03	-551.96	8,919.76	0.00	0.00	0.00
21,000.00	89.45	179.42	12,084.59	-9,003.02	-550.95	9,019.55	0.00	0.00	0.00
21,100.00	89.45	179.42	12,085.55	-9,103.01	-549.94	9,119.35	0.00	0.00	0.00
21,200.00	89.45	179.42	12,086.51	-9,203.00	-548.93	9,219.15	0.00	0.00	0.00
21,300.00	89.45	179.42	12,087.47	-9,302.99	-547.92	9,318.94	0.00	0.00	0.00
21,400.00	89.45	179.42	12,088.42	-9,402.98	-546.91	9,418.74	0.00	0.00	0.00
21,500.00	89.45	179.42	12,089.38	-9,502.97	-545.90	9,518.54	0.00	0.00	0.00
21,600.00	89.45	179.42	12,090.34	-9,602.96	-544.88	9,618.33	0.00	0.00	0.00
21,700.00	89.45	179.42	12,091.29	-9,702.95	-543.87	9,718.13	0.00	0.00	0.00
21,800.00	89.45	179.42	12,092.25	-9,802.94	-542.86	9,817.93	0.00	0.00	0.00
21,900.00	89.45	179.42	12,093.21	-9,902.93	-541.85	9,917.73	0.00	0.00	0.00
22,000.00	89.45	179.42	12,094.17	-10,002.92	-540.84	10,017.52	0.00	0.00	0.00
22,100.00	89.45	179.42	12,095.12	-10,102.91	-539.83	10,117.32	0.00	0.00	0.00
22,178.09	89.45	179.42	12,095.87	-10,180.99	-539.04	10,195.25	0.00	0.00	0.00
TD at 22178.09 - PBHL (Merit Fed Com 703H)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Merit Fed Com 703H) - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	425,613.17	854,777.43	32.166034	-103.320392
LP (Merit Fed Com 703H) - plan hits target center - Point	0.00	0.00	12,001.93	-367.44	-638.26	425,245.73	854,139.17	32.165040	-103.322465
PBHL (Merit Fed Com 703H) - plan hits target center - Point	0.00	0.00	12,095.87	-10,180.99	-539.04	415,432.18	854,238.39	32.138065	-103.322442



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Company:	Franklin Mountain Energy	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Project:	Lea County, NM (NAD83)	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site:	Merit/Mission Fed Com	North Reference:	Grid
Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,500.00	4,500.00	0.00	0.00	Start Build 1.50
4,966.60	4,965.44	8.44	-27.18	Start 5066.87 hold at 4966.60 MD
10,033.47	9,994.56	191.56	-616.82	Start Drop -1.50
10,500.08	10,460.00	200.00	-644.00	Start 969.00 hold at 10500.08 MD
11,469.08	11,429.00	200.00	-644.00	Start DLS 10.00 TFO 179.42
12,363.59	12,001.93	-367.44	-638.26	Start 9814.50 hold at 12363.59 MD
22,178.09	12,095.87	-10,180.99	-539.04	TD at 22178.09



Franklin Mountain Energy

Lea County, NM (NAD83)

Merit/Mission Fed Com

Merit Fed Com 703H

OH

Plan #1

Anticollision Report

07 May, 2020





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Combined Separation
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	5/7/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	22,177.79	Plan #1 (OH)	OWSG (Rev2) MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Merit/Mission Fed Com						
Merit Fed Com 602H - OH - Plan #1	4,116.30	4,117.40	34.99	14.45	1.703	CC
Merit Fed Com 602H - OH - Plan #1	4,200.00	4,201.09	34.99	14.03	1.669	ES, SF
Mission Fed Com 704H - OH - Plan #1	4,200.00	4,198.50	35.00	14.04	1.670	CC
Mission Fed Com 704H - OH - Plan #1	4,400.00	4,398.32	35.39	13.42	1.611	ES, SF

Offset Design		Merit/Mission Fed Com - Merit Fed Com 602H - OH - Plan #1											Offset Site Error:		0.00 usft
Survey Program:		0-OWSG (Rev2) MWD											Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.00	0.00	1.10	1.10	0.00	0.00	-90.46	-0.28	-34.99	34.99						
100.00	100.00	101.10	101.10	0.13	0.13	-90.46	-0.28	-34.99	34.99	34.81	0.18	194.131			
200.00	200.00	201.10	201.10	0.48	0.49	-90.46	-0.28	-34.99	34.99	34.30	0.69	50.920			
300.00	300.00	301.10	301.10	0.84	0.85	-90.46	-0.28	-34.99	34.99	33.80	1.19	29.302			
400.00	400.00	401.10	401.10	1.20	1.20	-90.46	-0.28	-34.99	34.99	33.29	1.70	20.570			
500.00	500.00	501.10	501.10	1.56	1.56	-90.46	-0.28	-34.99	34.99	32.78	2.21	15.847			
600.00	600.00	601.10	601.10	1.92	1.92	-90.46	-0.28	-34.99	34.99	32.28	2.72	12.888			
700.00	700.00	701.10	701.10	2.28	2.28	-90.46	-0.28	-34.99	34.99	31.77	3.22	10.860			
800.00	800.00	801.10	801.10	2.63	2.64	-90.46	-0.28	-34.99	34.99	31.26	3.73	9.384			
900.00	900.00	901.10	901.10	2.99	3.00	-90.46	-0.28	-34.99	34.99	30.76	4.24	8.261			
1,000.00	1,000.00	1,001.10	1,001.10	3.35	3.36	-90.46	-0.28	-34.99	34.99	30.25	4.74	7.378			
1,100.00	1,100.00	1,101.10	1,101.10	3.71	3.71	-90.46	-0.28	-34.99	34.99	29.74	5.25	6.665			
1,200.00	1,200.00	1,201.10	1,201.10	4.07	4.07	-90.46	-0.28	-34.99	34.99	29.23	5.76	6.078			
1,300.00	1,300.00	1,301.10	1,301.10	4.43	4.43	-90.46	-0.28	-34.99	34.99	28.73	6.26	5.586			
1,400.00	1,400.00	1,401.10	1,401.10	4.79	4.79	-90.46	-0.28	-34.99	34.99	28.22	6.77	5.168			
1,500.00	1,500.00	1,501.10	1,501.10	5.14	5.15	-90.46	-0.28	-34.99	34.99	27.71	7.28	4.808			
1,600.00	1,600.00	1,601.10	1,601.10	5.50	5.51	-90.46	-0.28	-34.99	34.99	27.21	7.78	4.495			
1,700.00	1,700.00	1,701.10	1,701.10	5.86	5.86	-90.46	-0.28	-34.99	34.99	26.70	8.29	4.220			
1,800.00	1,800.00	1,801.10	1,801.10	6.22	6.22	-90.46	-0.28	-34.99	34.99	26.19	8.80	3.977			
1,900.00	1,900.00	1,901.10	1,901.10	6.58	6.58	-90.46	-0.28	-34.99	34.99	25.69	9.31	3.760			
2,000.00	2,000.00	2,001.10	2,001.10	6.94	6.94	-90.46	-0.28	-34.99	34.99	25.18	9.81	3.566			
2,100.00	2,100.00	2,101.10	2,101.10	7.29	7.30	-90.46	-0.28	-34.99	34.99	24.67	10.32	3.391			
2,200.00	2,200.00	2,201.10	2,201.10	7.65	7.66	-90.46	-0.28	-34.99	34.99	24.16	10.83	3.232			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
2,300.00	2,300.00	2,301.10	2,301.10	8.01	8.02	-90.46	-0.28	-34.99	34.99	23.66	11.33	3.087		
2,400.00	2,400.00	2,401.10	2,401.10	8.37	8.37	-90.46	-0.28	-34.99	34.99	23.15	11.84	2.955		
2,500.00	2,500.00	2,501.10	2,501.10	8.73	8.73	-90.46	-0.28	-34.99	34.99	22.64	12.35	2.834		
2,600.00	2,600.00	2,601.10	2,601.10	9.09	9.09	-90.46	-0.28	-34.99	34.99	22.14	12.85	2.722		
2,700.00	2,700.00	2,701.10	2,701.10	9.45	9.45	-90.46	-0.28	-34.99	34.99	21.63	13.36	2.619		
2,800.00	2,800.00	2,801.10	2,801.10	9.80	9.81	-90.46	-0.28	-34.99	34.99	21.12	13.87	2.523		
2,900.00	2,900.00	2,901.10	2,901.10	10.16	10.17	-90.46	-0.28	-34.99	34.99	20.62	14.37	2.434		
3,000.00	3,000.00	3,001.10	3,001.10	10.52	10.53	-90.46	-0.28	-34.99	34.99	20.11	14.88	2.351		
3,100.00	3,100.00	3,101.10	3,101.10	10.88	10.88	-90.46	-0.28	-34.99	34.99	19.60	15.39	2.274		
3,200.00	3,200.00	3,201.10	3,201.10	11.24	11.24	-90.46	-0.28	-34.99	34.99	19.10	15.90	2.201		
3,300.00	3,300.00	3,301.10	3,301.10	11.60	11.60	-90.46	-0.28	-34.99	34.99	18.59	16.40	2.133		
3,400.00	3,400.00	3,401.10	3,401.10	11.96	11.96	-90.46	-0.28	-34.99	34.99	18.08	16.91	2.069		
3,500.00	3,500.00	3,501.10	3,501.10	12.31	12.32	-90.46	-0.28	-34.99	34.99	17.57	17.42	2.009		
3,600.00	3,600.00	3,601.10	3,601.10	12.67	12.68	-90.46	-0.28	-34.99	34.99	17.07	17.92	1.952		
3,700.00	3,700.00	3,701.10	3,701.10	13.03	13.03	-90.46	-0.28	-34.99	34.99	16.56	18.43	1.899		
3,800.00	3,800.00	3,801.10	3,801.10	13.39	13.39	-90.46	-0.28	-34.99	34.99	16.05	18.94	1.848		
3,900.00	3,900.00	3,901.10	3,901.10	13.75	13.75	-90.46	-0.28	-34.99	34.99	15.55	19.44	1.800		
4,000.00	4,000.00	4,001.10	4,001.10	14.11	14.11	-90.46	-0.28	-34.99	34.99	15.04	19.95	1.754		
4,100.00	4,100.00	4,101.10	4,101.10	14.46	14.47	-90.46	-0.28	-34.99	34.99	14.53	20.46	1.710		
4,116.30	4,116.30	4,117.40	4,117.40	14.52	14.53	-90.46	-0.28	-34.99	34.99	14.45	20.54	1.703 CC		
4,200.00	4,200.00	4,201.09	4,201.09	14.82	14.83	-90.46	-0.28	-34.99	34.99	14.03	20.97	1.669 ES, SF		
4,300.00	4,300.00	4,300.00	4,299.99	15.18	15.17	-90.02	-0.01	-36.27	36.29	14.84	21.45	1.692		
4,400.00	4,400.00	4,399.14	4,399.05	15.54	15.52	-88.88	0.78	-40.07	40.13	18.22	21.91	1.831		
4,500.00	4,500.00	4,497.82	4,497.52	15.90	15.86	-87.41	2.10	-46.35	46.53	24.17	22.36	2.081		
4,600.00	4,599.99	4,596.24	4,595.53	16.25	16.20	-13.46	3.93	-55.09	54.24	31.45	22.79	2.380		
4,700.00	4,699.91	4,694.46	4,693.08	16.60	16.55	-12.78	6.27	-66.27	61.96	38.77	23.20	2.671		
4,800.00	4,799.69	4,792.48	4,790.11	16.95	16.90	-12.45	9.12	-79.87	69.68	46.09	23.59	2.954		
4,900.00	4,899.27	4,892.12	4,888.52	17.30	17.26	-12.47	12.31	-95.13	76.32	52.24	24.08	3.170		
4,966.60	4,965.44	4,958.65	4,954.23	17.53	17.50	-12.71	14.45	-105.32	79.33	54.92	24.41	3.250		
5,000.00	4,998.59	4,992.02	4,987.19	17.65	17.62	-12.87	15.52	-110.43	80.55	55.98	24.57	3.278		
5,100.00	5,097.85	5,091.96	5,085.89	18.00	17.98	-13.33	18.72	-125.73	84.22	59.16	25.07	3.360		
5,200.00	5,197.10	5,191.89	5,184.59	18.36	18.35	-13.76	21.93	-141.04	87.90	62.34	25.56	3.439		
5,300.00	5,296.36	5,291.82	5,283.29	18.72	18.73	-14.14	25.13	-156.34	91.58	65.52	26.06	3.514		
5,400.00	5,395.61	5,391.75	5,381.99	19.08	19.10	-14.50	28.34	-171.65	95.27	68.71	26.56	3.587		
5,500.00	5,494.87	5,491.68	5,480.69	19.44	19.48	-14.84	31.54	-186.95	98.96	71.90	27.06	3.657		
5,600.00	5,594.12	5,591.61	5,579.39	19.81	19.86	-15.14	34.75	-202.26	102.65	75.09	27.56	3.725		
5,700.00	5,693.38	5,691.54	5,678.09	20.18	20.24	-15.43	37.96	-217.56	106.35	78.29	28.06	3.790		
5,800.00	5,792.63	5,791.47	5,776.79	20.54	20.63	-15.70	41.16	-232.87	110.05	81.48	28.56	3.853		
5,900.00	5,891.89	5,891.40	5,875.49	20.91	21.01	-15.95	44.37	-248.17	113.75	84.68	29.07	3.913		
6,000.00	5,991.14	5,991.33	5,974.19	21.28	21.40	-16.18	47.57	-263.48	117.45	87.88	29.57	3.972		
6,100.00	6,090.39	6,091.26	6,072.89	21.66	21.79	-16.40	50.78	-278.78	121.15	91.08	30.08	4.028		
6,200.00	6,189.65	6,191.19	6,171.59	22.03	22.18	-16.61	53.98	-294.09	124.86	94.28	30.58	4.083		
6,300.00	6,288.90	6,291.12	6,270.29	22.40	22.58	-16.81	57.19	-309.40	128.57	97.48	31.09	4.135		
6,400.00	6,388.16	6,391.05	6,368.99	22.78	22.97	-16.99	60.39	-324.70	132.28	100.68	31.60	4.186		
6,500.00	6,487.41	6,490.98	6,467.68	23.16	23.37	-17.16	63.60	-340.01	135.99	103.88	32.10	4.236		
6,600.00	6,586.67	6,590.91	6,566.38	23.53	23.77	-17.33	66.80	-355.31	139.70	107.08	32.61	4.283		
6,700.00	6,685.92	6,690.84	6,665.08	23.91	24.17	-17.49	70.01	-370.62	143.41	110.29	33.12	4.330		
6,800.00	6,785.18	6,790.77	6,763.78	24.29	24.57	-17.63	73.21	-385.92	147.12	113.49	33.63	4.374		
6,900.00	6,884.43	6,890.70	6,862.48	24.67	24.97	-17.78	76.42	-401.23	150.84	116.69	34.14	4.418		
7,000.00	6,983.69	6,990.63	6,961.18	25.05	25.38	-17.91	79.62	-416.53	154.55	119.90	34.66	4.460		
7,100.00	7,082.94	7,090.56	7,059.88	25.44	25.78	-18.04	82.83	-431.84	158.27	123.10	35.17	4.500		
7,200.00	7,182.20	7,190.49	7,158.58	25.82	26.19	-18.16	86.03	-447.14	161.98	126.30	35.68	4.540		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,300.00	7,281.45	7,290.42	7,257.28	26.20	26.59	-18.28	89.24	-462.45	165.70	129.51	36.19	4.578		
7,400.00	7,380.71	7,390.35	7,355.98	26.59	27.00	-18.39	92.44	-477.75	169.42	132.71	36.71	4.615		
7,500.00	7,479.96	7,490.28	7,454.68	26.97	27.41	-18.50	95.65	-493.06	173.14	135.92	37.22	4.652		
7,600.00	7,579.22	7,590.21	7,553.38	27.36	27.82	-18.60	98.86	-508.36	176.86	139.12	37.74	4.687		
7,700.00	7,678.47	7,690.14	7,652.08	27.74	28.23	-18.70	102.06	-523.67	180.58	142.33	38.25	4.721		
7,800.00	7,777.73	7,790.07	7,750.78	28.13	28.64	-18.79	105.27	-538.97	184.30	145.53	38.77	4.754		
7,900.00	7,876.98	7,890.00	7,849.47	28.52	29.05	-18.88	108.47	-554.28	188.02	148.74	39.28	4.786		
8,000.00	7,976.24	7,989.93	7,948.17	28.91	29.46	-18.97	111.68	-569.58	191.74	151.94	39.80	4.818		
8,100.00	8,075.49	8,089.86	8,046.87	29.30	29.88	-19.05	114.88	-584.89	195.46	155.15	40.32	4.848		
8,200.00	8,174.75	8,189.80	8,145.57	29.68	30.29	-19.13	118.09	-600.19	199.18	158.35	40.83	4.878		
8,300.00	8,274.00	8,289.73	8,244.27	30.07	30.71	-19.21	121.29	-615.50	202.91	161.56	41.35	4.907		
8,400.00	8,373.26	8,389.66	8,342.97	30.46	31.12	-19.28	124.50	-630.80	206.63	164.76	41.87	4.935		
8,500.00	8,472.51	8,489.59	8,441.67	30.85	31.54	-19.36	127.70	-646.11	210.35	167.97	42.39	4.963		
8,600.00	8,571.77	8,589.52	8,540.37	31.25	31.95	-19.43	130.91	-661.41	214.08	171.17	42.91	4.990		
8,700.00	8,671.02	8,689.45	8,639.07	31.64	32.37	-19.49	134.11	-676.72	217.80	174.38	43.42	5.016		
8,800.00	8,770.27	8,789.38	8,737.77	32.03	32.79	-19.56	137.32	-692.02	221.52	177.58	43.94	5.041		
8,900.00	8,869.53	8,889.31	8,836.47	32.42	33.21	-19.62	140.52	-707.33	225.25	180.78	44.46	5.066		
9,000.00	8,968.78	8,989.24	8,935.17	32.81	33.62	-19.68	143.73	-722.63	228.97	183.99	44.98	5.090		
9,100.00	9,068.04	9,089.17	9,033.87	33.21	34.04	-19.74	146.93	-737.94	232.70	187.19	45.50	5.114		
9,200.00	9,167.29	9,189.10	9,132.57	33.60	34.46	-19.80	150.14	-753.24	236.42	190.40	46.02	5.137		
9,300.00	9,266.55	9,289.03	9,231.26	33.99	34.88	-19.85	153.34	-768.55	240.15	193.60	46.54	5.160		
9,400.00	9,365.80	9,388.96	9,329.96	34.39	35.30	-19.91	156.55	-783.85	243.87	196.81	47.06	5.182		
9,500.00	9,465.06	9,488.89	9,428.66	34.78	35.72	-19.96	159.76	-799.16	247.60	200.01	47.59	5.203		
9,600.00	9,564.31	9,588.82	9,527.36	35.18	36.15	-20.01	162.96	-814.46	251.32	203.22	48.11	5.224		
9,700.00	9,663.57	9,688.75	9,626.06	35.57	36.57	-20.06	166.17	-829.77	255.05	206.42	48.63	5.245		
9,800.00	9,762.82	9,788.68	9,724.76	35.97	36.99	-20.10	169.37	-845.07	258.78	209.63	49.15	5.265		
9,900.00	9,862.08	9,888.61	9,823.46	36.36	37.41	-20.15	172.58	-860.38	262.50	212.83	49.67	5.285		
10,000.00	9,961.33	9,988.54	9,922.16	36.76	37.83	-20.19	175.78	-875.68	266.23	216.03	50.20	5.304		
10,033.47	9,994.56	10,021.99	9,955.20	36.89	37.98	-20.21	176.85	-880.81	267.48	217.11	50.37	5.310		
10,100.00	10,060.65	10,088.45	10,020.84	37.15	38.26	-20.21	178.99	-890.99	270.50	219.78	50.72	5.333		
10,200.00	10,160.23	10,188.22	10,119.38	37.53	38.68	-20.07	182.19	-906.27	277.09	225.85	51.23	5.408		
10,300.00	10,260.01	10,287.80	10,217.73	37.90	39.10	-19.77	185.38	-921.52	286.13	234.39	51.74	5.530		
10,400.00	10,359.93	10,387.10	10,315.81	38.26	39.52	-19.33	188.57	-936.73	297.64	245.40	52.24	5.697		
10,500.08	10,460.00	10,490.62	10,418.11	38.61	39.96	-91.52	191.80	-952.18	311.27	258.47	52.80	5.896		
10,600.00	10,559.92	10,598.46	10,525.07	38.95	40.40	-90.96	194.63	-965.67	323.72	270.34	53.38	6.065		
10,700.00	10,659.92	10,707.08	10,633.15	39.29	40.82	-90.54	196.85	-976.28	333.46	279.53	53.93	6.183		
10,800.00	10,759.92	10,816.25	10,742.03	39.63	41.23	-90.26	198.44	-983.90	340.43	285.98	54.45	6.252		
10,900.00	10,859.92	10,925.76	10,851.44	39.97	41.61	-90.10	199.40	-988.48	344.61	289.67	54.94	6.272		
11,000.00	10,959.92	11,035.46	10,961.12	40.31	41.98	-90.05	199.72	-989.99	345.99	290.59	55.40	6.245		
11,033.00	10,992.92	11,068.36	10,994.02	40.43	42.09	-90.05	199.72	-989.99	345.99	290.43	55.56	6.227		
11,100.00	11,059.92	11,135.36	11,061.02	40.66	42.31	-90.05	199.72	-989.99	345.99	290.10	55.89	6.190		
11,200.00	11,159.92	11,235.36	11,161.02	41.00	42.64	-90.05	199.72	-989.99	345.99	289.61	56.38	6.136		
11,297.70	11,257.62	11,333.18	11,258.73	41.33	42.95	-90.58	196.49	-989.96	345.97	289.11	56.86	6.084		
11,300.00	11,259.92	11,335.46	11,261.00	41.34	42.95	-90.62	196.25	-989.95	345.97	289.10	56.88	6.083		
11,400.00	11,359.92	11,432.02	11,355.63	41.68	43.22	-93.70	177.61	-989.76	346.53	289.10	57.43	6.034		
11,469.08	11,429.00	11,494.00	11,414.17	41.92	43.38	-97.03	157.38	-989.56	348.54	290.70	57.84	6.026		
11,500.00	11,459.91	11,520.46	11,438.44	42.02	43.44	81.78	146.83	-989.45	350.13	292.12	58.01	6.036		
11,550.00	11,509.65	11,562.43	11,475.86	42.18	43.54	79.00	127.84	-989.26	353.38	295.16	58.22	6.070		
11,600.00	11,558.79	11,603.49	11,511.02	42.32	43.62	76.34	106.66	-989.04	357.35	299.01	58.34	6.125		
11,650.00	11,606.93	11,643.74	11,543.93	42.46	43.70	73.82	83.51	-988.80	361.90	303.53	58.36	6.201		
11,700.00	11,653.72	11,683.27	11,574.59	42.59	43.76	71.45	58.58	-988.55	366.87	308.59	58.28	6.295		
11,750.00	11,698.80	11,722.17	11,603.02	42.71	43.82	69.24	32.04	-988.28	372.13	314.02	58.10	6.404		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
11,800.00	11,741.83	11,760.51	11,629.21	42.82	43.88	67.19	4.05	-987.99	377.52	319.68	57.84	6.527			
11,850.00	11,782.48	11,800.00	11,654.17	42.91	43.93	65.27	-26.55	-987.68	382.93	325.38	57.55	6.654			
11,900.00	11,820.43	11,835.78	11,674.92	43.00	43.96	63.63	-55.69	-987.38	388.22	331.08	57.13	6.795			
11,950.00	11,855.41	11,872.82	11,694.44	43.07	44.00	62.12	-87.17	-987.06	393.28	336.56	56.73	6.933			
12,000.00	11,887.14	11,909.55	11,711.74	43.14	44.04	60.78	-119.55	-986.73	398.03	341.71	56.32	7.068			
12,050.00	11,915.38	11,950.00	11,728.36	43.19	44.08	59.54	-156.42	-986.35	402.40	346.39	56.01	7.184			
12,100.00	11,939.93	11,982.20	11,739.70	43.24	44.11	58.63	-186.55	-986.05	406.23	350.63	55.60	7.307			
12,150.00	11,960.58	12,018.22	11,750.35	43.29	44.14	57.80	-220.95	-985.70	409.55	354.22	55.32	7.403			
12,200.00	11,977.19	12,050.00	11,757.95	43.35	44.18	57.19	-251.80	-985.38	412.29	357.20	55.09	7.484			
12,250.00	11,989.63	12,089.82	11,765.03	43.41	44.22	56.66	-290.98	-984.98	414.34	359.31	55.03	7.529			
12,300.00	11,997.80	12,125.47	11,769.04	43.49	44.27	56.33	-326.40	-984.62	415.76	360.72	55.04	7.554			
12,350.00	12,001.64	12,161.08	11,770.85	43.59	44.33	56.16	-361.95	-984.26	416.48	361.32	55.16	7.551			
12,363.59	12,001.93	12,172.12	11,770.98	43.62	44.35	56.14	-372.99	-984.14	416.55	361.34	55.21	7.545			
12,400.00	12,002.28	12,208.53	11,771.29	43.70	44.42	56.14	-409.40	-983.77	416.56	361.21	55.35	7.526			
12,500.00	12,003.24	12,308.53	11,772.16	43.99	44.65	56.13	-509.39	-982.75	416.61	360.82	55.78	7.468			
12,600.00	12,004.19	12,408.53	11,773.03	44.34	44.95	56.12	-609.38	-981.73	416.65	360.36	56.28	7.403			
12,700.00	12,005.15	12,508.53	11,773.90	44.76	45.32	56.11	-709.37	-980.71	416.69	359.84	56.85	7.330			
12,800.00	12,006.11	12,608.53	11,774.77	45.23	45.76	56.10	-809.36	-979.69	416.73	359.25	57.48	7.250			
12,900.00	12,007.07	12,708.53	11,775.64	45.77	46.26	56.09	-909.35	-978.67	416.77	358.61	58.17	7.165			
13,000.00	12,008.02	12,808.53	11,776.50	46.35	46.83	56.07	-1,009.34	-977.65	416.81	357.90	58.91	7.075			
13,100.00	12,008.98	12,908.53	11,777.37	46.99	47.44	56.06	-1,109.33	-976.63	416.85	357.14	59.72	6.981			
13,200.00	12,009.94	13,008.53	11,778.24	47.67	48.11	56.05	-1,209.32	-975.60	416.89	356.32	60.57	6.883			
13,300.00	12,010.89	13,108.53	11,779.11	48.40	48.83	56.04	-1,309.31	-974.58	416.94	355.46	61.48	6.782			
13,400.00	12,011.85	13,208.53	11,779.98	49.18	49.59	56.03	-1,409.31	-973.56	416.98	354.54	62.44	6.678			
13,500.00	12,012.81	13,308.53	11,780.85	49.99	50.40	56.02	-1,509.30	-972.54	417.02	353.58	63.44	6.573			
13,600.00	12,013.77	13,408.53	11,781.71	50.85	51.25	56.01	-1,609.29	-971.52	417.06	352.57	64.49	6.467			
13,700.00	12,014.72	13,508.53	11,782.58	51.75	52.14	56.00	-1,709.28	-970.50	417.10	351.53	65.58	6.361			
13,800.00	12,015.68	13,608.53	11,783.45	52.68	53.07	55.99	-1,809.27	-969.48	417.14	350.44	66.71	6.254			
13,900.00	12,016.64	13,708.53	11,784.32	53.65	54.03	55.98	-1,909.26	-968.46	417.18	349.31	67.87	6.147			
14,000.00	12,017.59	13,808.53	11,785.19	54.65	55.02	55.97	-2,009.25	-967.44	417.23	348.15	69.07	6.040			
14,100.00	12,018.55	13,908.53	11,786.06	55.68	56.05	55.95	-2,109.24	-966.42	417.27	346.96	70.31	5.935			
14,200.00	12,019.51	14,008.53	11,786.92	56.74	57.11	55.94	-2,209.23	-965.40	417.31	345.74	71.57	5.831			
14,300.00	12,020.47	14,108.53	11,787.79	57.82	58.19	55.93	-2,309.22	-964.37	417.35	344.48	72.87	5.728			
14,400.00	12,021.42	14,208.53	11,788.66	58.94	59.30	55.92	-2,409.21	-963.35	417.39	343.20	74.19	5.626			
14,500.00	12,022.38	14,308.53	11,789.53	60.08	60.43	55.91	-2,509.21	-962.33	417.43	341.90	75.54	5.526			
14,600.00	12,023.34	14,408.53	11,790.40	61.24	61.59	55.90	-2,609.20	-961.31	417.48	340.56	76.91	5.428			
14,700.00	12,024.29	14,508.53	11,791.27	62.42	62.77	55.89	-2,709.19	-960.29	417.52	339.21	78.31	5.332			
14,800.00	12,025.25	14,608.53	11,792.13	63.63	63.97	55.88	-2,809.18	-959.27	417.56	337.84	79.72	5.238			
14,900.00	12,026.21	14,708.53	11,793.00	64.85	65.19	55.87	-2,909.17	-958.25	417.60	336.44	81.16	5.145			
15,000.00	12,027.17	14,808.53	11,793.87	66.09	66.43	55.86	-3,009.16	-957.23	417.64	335.03	82.62	5.055			
15,100.00	12,028.12	14,908.53	11,794.74	67.35	67.69	55.85	-3,109.15	-956.21	417.68	333.59	84.09	4.967			
15,200.00	12,029.08	15,008.53	11,795.61	68.63	68.96	55.84	-3,209.14	-955.19	417.73	332.15	85.58	4.881			
15,300.00	12,030.04	15,108.53	11,796.48	69.92	70.25	55.82	-3,309.13	-954.17	417.77	330.68	87.08	4.797			
15,400.00	12,030.99	15,208.53	11,797.34	71.23	71.56	55.81	-3,409.12	-953.15	417.81	329.21	88.60	4.716			
15,500.00	12,031.95	15,308.53	11,798.21	72.55	72.87	55.80	-3,509.12	-952.12	417.85	327.71	90.14	4.636			
15,600.00	12,032.91	15,408.53	11,799.08	73.89	74.21	55.79	-3,609.11	-951.10	417.89	326.21	91.68	4.558			
15,700.00	12,033.87	15,508.53	11,799.95	75.23	75.55	55.78	-3,709.10	-950.08	417.93	324.70	93.24	4.482			
15,800.00	12,034.82	15,608.53	11,800.82	76.59	76.91	55.77	-3,809.09	-949.06	417.98	323.17	94.81	4.409			
15,900.00	12,035.78	15,708.53	11,801.69	77.96	78.27	55.76	-3,909.08	-948.04	418.02	321.64	96.38	4.337			
16,000.00	12,036.74	15,808.53	11,802.55	79.35	79.65	55.75	-4,009.07	-947.02	418.06	320.09	97.97	4.267			
16,100.00	12,037.69	15,908.53	11,803.42	80.74	81.04	55.74	-4,109.06	-946.00	418.10	318.54	99.57	4.199			
16,200.00	12,038.65	16,008.53	11,804.29	82.14	82.44	55.73	-4,209.05	-944.98	418.14	316.97	101.17	4.133			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
16,300.00	12,039.61	16,108.53	11,805.16	83.55	83.85	55.72	-4,309.04	-943.96	418.19	315.40	102.78	4.069			
16,400.00	12,040.57	16,208.53	11,806.03	84.97	85.26	55.71	-4,409.03	-942.94	418.23	313.83	104.40	4.006			
16,500.00	12,041.52	16,308.53	11,806.90	86.40	86.69	55.69	-4,509.03	-941.92	418.27	312.25	106.02	3.945			
16,600.00	12,042.48	16,408.53	11,807.76	87.83	88.12	55.68	-4,609.02	-940.89	418.31	310.66	107.65	3.886			
16,700.00	12,043.44	16,508.53	11,808.63	89.27	89.56	55.67	-4,709.01	-939.87	418.35	309.06	109.29	3.828			
16,800.00	12,044.39	16,608.53	11,809.50	90.72	91.01	55.66	-4,809.00	-938.85	418.39	307.46	110.93	3.772			
16,900.00	12,045.35	16,708.53	11,810.37	92.18	92.46	55.65	-4,908.99	-937.83	418.44	305.86	112.57	3.717			
17,000.00	12,046.31	16,808.53	11,811.24	93.64	93.92	55.64	-5,008.98	-936.81	418.48	304.25	114.22	3.664			
17,100.00	12,047.27	16,908.53	11,812.10	95.11	95.39	55.63	-5,108.97	-935.79	418.52	302.64	115.88	3.612			
17,200.00	12,048.22	17,008.53	11,812.97	96.59	96.87	55.62	-5,208.96	-934.77	418.56	301.03	117.53	3.561			
17,300.00	12,049.18	17,108.53	11,813.84	98.07	98.34	55.61	-5,308.95	-933.75	418.60	299.41	119.19	3.512			
17,400.00	12,050.14	17,208.53	11,814.71	99.56	99.83	55.60	-5,408.94	-932.73	418.65	297.79	120.86	3.464			
17,500.00	12,051.09	17,308.53	11,815.58	101.05	101.32	55.59	-5,508.94	-931.71	418.69	296.17	122.52	3.417			
17,600.00	12,052.05	17,408.53	11,816.45	102.54	102.81	55.58	-5,608.93	-930.69	418.73	294.54	124.19	3.372			
17,700.00	12,053.01	17,508.53	11,817.31	104.04	104.31	55.57	-5,708.92	-929.67	418.77	292.92	125.86	3.327			
17,800.00	12,053.97	17,608.53	11,818.18	105.55	105.82	55.55	-5,808.91	-928.64	418.82	291.29	127.53	3.284			
17,900.00	12,054.92	17,708.53	11,819.05	107.06	107.32	55.54	-5,908.90	-927.62	418.86	289.66	129.20	3.242			
18,000.00	12,055.88	17,808.53	11,819.92	108.57	108.84	55.53	-6,008.89	-926.60	418.90	288.03	130.87	3.201			
18,100.00	12,056.84	17,908.53	11,820.79	110.09	110.35	55.52	-6,108.88	-925.58	418.94	286.40	132.54	3.161			
18,200.00	12,057.79	18,008.53	11,821.66	111.61	111.87	55.51	-6,208.87	-924.56	418.98	284.77	134.22	3.122			
18,300.00	12,058.75	18,108.53	11,822.52	113.14	113.40	55.50	-6,308.86	-923.54	419.03	283.13	135.89	3.084			
18,400.00	12,059.71	18,208.53	11,823.39	114.67	114.92	55.49	-6,408.85	-922.52	419.07	281.50	137.57	3.046			
18,500.00	12,060.67	18,308.53	11,824.26	116.20	116.45	55.48	-6,508.85	-921.50	419.11	279.87	139.24	3.010			
18,600.00	12,061.62	18,408.53	11,825.13	117.74	117.99	55.47	-6,608.84	-920.48	419.15	278.24	140.91	2.975			
18,700.00	12,062.58	18,508.53	11,826.00	119.28	119.53	55.46	-6,708.83	-919.46	419.19	276.61	142.59	2.940			
18,800.00	12,063.54	18,608.53	11,826.87	120.82	121.07	55.45	-6,808.82	-918.44	419.24	274.97	144.26	2.906			
18,900.00	12,064.49	18,708.53	11,827.73	122.36	122.61	55.44	-6,908.81	-917.41	419.28	273.34	145.94	2.873			
19,000.00	12,065.45	18,808.53	11,828.60	123.91	124.16	55.43	-7,008.80	-916.39	419.32	271.71	147.61	2.841			
19,100.00	12,066.41	18,908.53	11,829.47	125.46	125.70	55.41	-7,108.79	-915.37	419.36	270.08	149.28	2.809			
19,200.00	12,067.37	19,008.53	11,830.34	127.01	127.26	55.40	-7,208.78	-914.35	419.41	268.46	150.95	2.778			
19,300.00	12,068.32	19,108.53	11,831.21	128.57	128.81	55.39	-7,308.77	-913.33	419.45	266.83	152.62	2.748			
19,400.00	12,069.28	19,208.53	11,832.08	130.13	130.37	55.38	-7,408.76	-912.31	419.49	265.20	154.29	2.719			
19,500.00	12,070.24	19,308.53	11,832.94	131.69	131.92	55.37	-7,508.75	-911.29	419.53	263.58	155.95	2.690			
19,600.00	12,071.19	19,408.53	11,833.81	133.25	133.49	55.36	-7,608.75	-910.27	419.58	261.96	157.62	2.662			
19,700.00	12,072.15	19,508.53	11,834.68	134.81	135.05	55.35	-7,708.74	-909.25	419.62	260.34	159.28	2.634			
19,800.00	12,073.11	19,608.53	11,835.55	136.38	136.61	55.34	-7,808.73	-908.23	419.66	258.72	160.94	2.607			
19,900.00	12,074.07	19,708.53	11,836.42	137.95	138.18	55.33	-7,908.72	-907.21	419.70	257.10	162.60	2.581			
20,000.00	12,075.02	19,808.53	11,837.29	139.52	139.75	55.32	-8,008.71	-906.19	419.74	255.48	164.26	2.555			
20,100.00	12,075.98	19,908.53	11,838.15	141.09	141.32	55.31	-8,108.70	-905.16	419.79	253.87	165.92	2.530			
20,200.00	12,076.94	20,008.53	11,839.02	142.67	142.89	55.30	-8,208.69	-904.14	419.83	252.26	167.57	2.505			
20,300.00	12,077.89	20,108.53	11,839.89	144.24	144.47	55.29	-8,308.68	-903.12	419.87	250.65	169.22	2.481			
20,400.00	12,078.85	20,208.53	11,840.76	145.82	146.05	55.27	-8,408.67	-902.10	419.91	249.04	170.87	2.457			
20,500.00	12,079.81	20,308.53	11,841.63	147.40	147.62	55.26	-8,508.66	-901.08	419.96	247.44	172.52	2.434			
20,600.00	12,080.77	20,408.53	11,842.50	148.98	149.20	55.25	-8,608.66	-900.06	420.00	245.84	174.16	2.412			
20,700.00	12,081.72	20,508.53	11,843.36	150.56	150.78	55.24	-8,708.65	-899.04	420.04	244.24	175.80	2.389			
20,800.00	12,082.68	20,608.53	11,844.23	152.15	152.37	55.23	-8,808.64	-898.02	420.08	242.64	177.44	2.367			
20,900.00	12,083.64	20,708.53	11,845.10	153.73	153.95	55.22	-8,908.63	-897.00	420.13	241.05	179.08	2.346			
21,000.00	12,084.59	20,808.53	11,845.97	155.32	155.54	55.21	-9,008.62	-895.98	420.17	239.46	180.71	2.325			
21,100.00	12,085.55	20,908.53	11,846.84	156.91	157.12	55.20	-9,108.61	-894.96	420.21	237.87	182.34	2.305			
21,200.00	12,086.51	21,008.53	11,847.71	158.49	158.71	55.19	-9,208.60	-893.93	420.25	236.28	183.97	2.284			
21,300.00	12,087.47	21,108.53	11,848.57	160.09	160.30	55.18	-9,308.59	-892.91	420.30	234.70	185.60	2.265			
21,400.00	12,088.42	21,208.53	11,849.44	161.68	161.89	55.17	-9,408.58	-891.89	420.34	233.12	187.22	2.245			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Merit/Mission Fed Com - Merit Fed Com 602H - OH - Plan #1												Offset Well Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
21,500.00	12,089.38	21,308.53	11,850.31	163.27	163.49	55.16	-9,508.57	-890.87	420.38	231.54	188.84	2.226	
21,600.00	12,090.34	21,408.53	11,851.18	164.86	165.08	55.15	-9,608.57	-889.85	420.43	229.97	190.46	2.207	
21,700.00	12,091.29	21,508.53	11,852.05	166.46	166.67	55.14	-9,708.56	-888.83	420.47	228.40	192.07	2.189	
21,800.00	12,092.25	21,608.53	11,852.92	168.06	168.27	55.12	-9,808.55	-887.81	420.51	226.83	193.68	2.171	
21,900.00	12,093.21	21,708.53	11,853.78	169.65	169.87	55.11	-9,908.54	-886.79	420.55	225.27	195.29	2.154	
22,000.00	12,094.17	21,808.53	11,854.65	171.25	171.46	55.10	-10,008.53	-885.77	420.60	223.70	196.89	2.136	
22,100.00	12,095.12	21,908.53	11,855.52	172.85	173.06	55.09	-10,108.52	-884.75	420.64	222.15	198.49	2.119	
22,200.00	12,095.12	21,908.53	11,855.52	172.85	173.06	55.09	-10,108.52	-884.75	420.64	222.15	198.49	2.119	
22,278.09	12,095.87	21,985.60	11,856.19	174.10	174.30	55.08	-10,185.59	-883.96	420.67	220.88	199.80	2.106	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	89.54	0.28	35.00	35.03					
100.00	100.00	98.50	98.50	0.13	0.12	89.54	0.28	35.00	35.00	34.83	0.18	198.747		
200.00	200.00	198.50	198.50	0.48	0.48	89.54	0.28	35.00	35.00	34.32	0.68	51.427		
300.00	300.00	298.50	298.50	0.84	0.84	89.54	0.28	35.00	35.00	33.81	1.19	29.473		
400.00	400.00	398.50	398.50	1.20	1.20	89.54	0.28	35.00	35.00	33.31	1.69	20.656		
500.00	500.00	498.50	498.50	1.56	1.55	89.54	0.28	35.00	35.00	32.80	2.20	15.899		
600.00	600.00	598.50	598.50	1.92	1.91	89.54	0.28	35.00	35.00	32.29	2.71	12.923		
700.00	700.00	698.50	698.50	2.28	2.27	89.54	0.28	35.00	35.00	31.79	3.22	10.886		
800.00	800.00	798.50	798.50	2.63	2.63	89.54	0.28	35.00	35.00	31.28	3.72	9.403		
900.00	900.00	898.50	898.50	2.99	2.99	89.54	0.28	35.00	35.00	30.77	4.23	8.276		
1,000.00	1,000.00	998.50	998.50	3.35	3.35	89.54	0.28	35.00	35.00	30.26	4.74	7.390		
1,100.00	1,100.00	1,098.50	1,098.50	3.71	3.70	89.54	0.28	35.00	35.00	29.76	5.24	6.676		
1,200.00	1,200.00	1,198.50	1,198.50	4.07	4.06	89.54	0.28	35.00	35.00	29.25	5.75	6.087		
1,300.00	1,300.00	1,298.50	1,298.50	4.43	4.42	89.54	0.28	35.00	35.00	28.74	6.26	5.594		
1,400.00	1,400.00	1,398.50	1,398.50	4.79	4.78	89.54	0.28	35.00	35.00	28.24	6.76	5.175		
1,500.00	1,500.00	1,498.50	1,498.50	5.14	5.14	89.54	0.28	35.00	35.00	27.73	7.27	4.814		
1,600.00	1,600.00	1,598.50	1,598.50	5.50	5.50	89.54	0.28	35.00	35.00	27.22	7.78	4.500		
1,700.00	1,700.00	1,698.50	1,698.50	5.86	5.86	89.54	0.28	35.00	35.00	26.72	8.28	4.225		
1,800.00	1,800.00	1,798.50	1,798.50	6.22	6.21	89.54	0.28	35.00	35.00	26.21	8.79	3.981		
1,900.00	1,900.00	1,898.50	1,898.50	6.58	6.57	89.54	0.28	35.00	35.00	25.70	9.30	3.764		
2,000.00	2,000.00	1,998.50	1,998.50	6.94	6.93	89.54	0.28	35.00	35.00	25.20	9.81	3.569		
2,100.00	2,100.00	2,098.50	2,098.50	7.29	7.29	89.54	0.28	35.00	35.00	24.69	10.31	3.394		
2,200.00	2,200.00	2,198.50	2,198.50	7.65	7.65	89.54	0.28	35.00	35.00	24.18	10.82	3.235		
2,300.00	2,300.00	2,298.50	2,298.50	8.01	8.01	89.54	0.28	35.00	35.00	23.67	11.33	3.090		
2,400.00	2,400.00	2,398.50	2,398.50	8.37	8.36	89.54	0.28	35.00	35.00	23.17	11.83	2.958		
2,500.00	2,500.00	2,498.50	2,498.50	8.73	8.72	89.54	0.28	35.00	35.00	22.66	12.34	2.836		
2,600.00	2,600.00	2,598.50	2,598.50	9.09	9.08	89.54	0.28	35.00	35.00	22.15	12.85	2.724		
2,700.00	2,700.00	2,698.50	2,698.50	9.45	9.44	89.54	0.28	35.00	35.00	21.65	13.35	2.621		
2,800.00	2,800.00	2,798.50	2,798.50	9.80	9.80	89.54	0.28	35.00	35.00	21.14	13.86	2.525		
2,900.00	2,900.00	2,898.50	2,898.50	10.16	10.16	89.54	0.28	35.00	35.00	20.63	14.37	2.436		
3,000.00	3,000.00	2,998.50	2,998.50	10.52	10.52	89.54	0.28	35.00	35.00	20.13	14.88	2.353		
3,100.00	3,100.00	3,098.50	3,098.50	10.88	10.87	89.54	0.28	35.00	35.00	19.62	15.38	2.275		
3,200.00	3,200.00	3,198.50	3,198.50	11.24	11.23	89.54	0.28	35.00	35.00	19.11	15.89	2.203		
3,300.00	3,300.00	3,298.50	3,298.50	11.60	11.59	89.54	0.28	35.00	35.00	18.60	16.40	2.135		
3,400.00	3,400.00	3,398.50	3,398.50	11.96	11.95	89.54	0.28	35.00	35.00	18.10	16.90	2.071		
3,500.00	3,500.00	3,498.50	3,498.50	12.31	12.31	89.54	0.28	35.00	35.00	17.59	17.41	2.010		
3,600.00	3,600.00	3,598.50	3,598.50	12.67	12.67	89.54	0.28	35.00	35.00	17.08	17.92	1.954		
3,700.00	3,700.00	3,698.50	3,698.50	13.03	13.03	89.54	0.28	35.00	35.00	16.58	18.42	1.900		
3,800.00	3,800.00	3,798.50	3,798.50	13.39	13.38	89.54	0.28	35.00	35.00	16.07	18.93	1.849		
3,900.00	3,900.00	3,898.50	3,898.50	13.75	13.74	89.54	0.28	35.00	35.00	15.56	19.44	1.801		
4,000.00	4,000.00	3,998.50	3,998.50	14.11	14.10	89.54	0.28	35.00	35.00	15.06	19.94	1.755		
4,100.00	4,100.00	4,098.50	4,098.50	14.46	14.46	89.54	0.28	35.00	35.00	14.55	20.45	1.711		
4,200.00	4,200.00	4,198.50	4,198.50	14.82	14.82	89.54	0.28	35.00	35.00	14.04	20.96	1.670 CC		
4,203.47	4,203.47	4,201.97	4,201.97	14.84	14.83	89.54	0.28	35.00	35.00	14.02	20.98	1.669		
4,300.00	4,300.00	4,298.48	4,298.46	15.18	15.18	87.46	1.55	34.99	35.03	13.56	21.47	1.632		
4,400.00	4,400.00	4,398.32	4,398.23	15.54	15.53	81.18	5.43	34.97	35.39	13.42	21.97	1.611 ES, SF		
4,500.00	4,500.00	4,497.89	4,497.58	15.90	15.89	71.21	11.89	34.94	36.92	14.46	22.46	1.644		
4,600.00	4,599.99	4,597.42	4,596.75	16.25	16.24	133.72	20.40	34.90	41.35	18.41	22.95	1.802		
4,700.00	4,699.91	4,697.06	4,696.02	16.60	16.60	127.96	29.08	34.86	48.50	25.06	23.43	2.069		
4,800.00	4,799.69	4,796.64	4,795.21	16.95	16.96	125.83	37.76	34.81	57.48	33.55	23.93	2.402		
4,900.00	4,899.27	4,896.08	4,894.28	17.30	17.31	126.05	46.42	34.77	68.03	43.59	24.43	2.784		
4,966.60	4,965.44	4,962.20	4,960.15	17.53	17.55	127.02	52.18	34.74	75.91	51.14	24.77	3.065		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,998.59	4,995.33	4,993.15	17.65	17.67	127.65	55.07	34.73	80.05	55.11	24.94	3.210		
5,100.00	5,097.85	5,094.52	5,091.97	18.00	18.03	129.18	63.72	34.68	92.49	67.05	25.44	3.636		
5,200.00	5,197.10	5,193.72	5,190.79	18.36	18.39	130.35	72.36	34.64	104.97	79.03	25.94	4.047		
5,300.00	5,296.36	5,292.92	5,289.61	18.72	18.75	131.27	81.00	34.60	117.49	91.05	26.44	4.443		
5,400.00	5,395.61	5,392.12	5,388.43	19.08	19.11	132.01	89.65	34.55	130.04	103.09	26.95	4.825		
5,500.00	5,494.87	5,491.31	5,487.25	19.44	19.47	132.62	98.29	34.51	142.60	115.15	27.45	5.194		
5,600.00	5,594.12	5,590.51	5,586.07	19.81	19.83	133.13	106.93	34.47	155.18	127.22	27.96	5.550		
5,700.00	5,693.38	5,689.71	5,684.89	20.18	20.20	133.57	115.58	34.42	167.76	139.30	28.47	5.893		
5,800.00	5,792.63	5,788.91	5,783.71	20.54	20.56	133.94	124.22	34.38	180.36	151.38	28.98	6.224		
5,900.00	5,891.89	5,888.10	5,882.53	20.91	20.92	134.27	132.86	34.34	192.96	163.47	29.49	6.544		
6,000.00	5,991.14	5,987.30	5,981.35	21.28	21.29	134.56	141.51	34.29	205.57	175.57	30.00	6.853		
6,100.00	6,090.39	6,086.50	6,080.17	21.66	21.65	134.81	150.15	34.25	218.18	187.67	30.51	7.152		
6,200.00	6,189.65	6,185.69	6,178.99	22.03	22.02	135.03	158.80	34.21	230.79	199.78	31.02	7.440		
6,300.00	6,288.90	6,284.89	6,277.81	22.40	22.38	135.24	167.44	34.16	243.41	211.88	31.53	7.720		
6,400.00	6,388.16	6,384.09	6,376.63	22.78	22.75	135.42	176.08	34.12	256.03	223.99	32.04	7.990		
6,500.00	6,487.41	6,483.29	6,475.45	23.16	23.12	135.58	184.73	34.08	268.66	236.10	32.56	8.252		
6,600.00	6,586.67	6,582.43	6,577.28	23.53	23.49	135.93	192.56	34.04	280.82	247.73	33.09	8.486		
6,700.00	6,685.92	6,681.10	6,679.82	23.91	23.87	136.74	197.71	34.01	291.85	258.23	33.62	8.681		
6,800.00	6,785.18	6,780.77	6,782.46	24.29	24.23	137.97	200.10	34.00	301.82	267.68	34.14	8.841		
6,900.00	6,884.43	6,881.24	6,882.93	24.67	24.59	139.45	200.28	34.00	311.08	276.43	34.65	8.979		
7,000.00	6,983.69	6,980.50	6,982.19	25.05	24.94	140.86	200.28	34.00	320.47	285.32	35.15	9.117		
7,100.00	7,082.94	7,089.75	7,081.44	25.44	25.30	142.20	200.28	34.00	330.03	294.38	35.65	9.257		
7,200.00	7,182.20	7,189.01	7,180.70	25.82	25.65	143.45	200.28	34.00	339.77	303.62	36.15	9.398		
7,300.00	7,281.45	7,288.26	7,279.95	26.20	26.00	144.64	200.28	34.00	349.66	313.00	36.65	9.539		
7,400.00	7,380.71	7,387.51	7,379.21	26.59	26.36	145.76	200.28	34.00	359.69	322.53	37.16	9.680		
7,500.00	7,479.96	7,486.77	7,478.46	26.97	26.71	146.82	200.28	34.00	369.85	332.19	37.66	9.821		
7,600.00	7,579.22	7,586.02	7,577.72	27.36	27.06	147.82	200.28	34.00	380.13	341.97	38.16	9.961		
7,700.00	7,678.47	7,685.28	7,676.97	27.74	27.42	148.77	200.28	34.00	390.52	351.86	38.66	10.101		
7,800.00	7,777.73	7,784.53	7,776.23	28.13	27.77	149.67	200.28	34.00	401.01	361.84	39.16	10.239		
7,900.00	7,876.98	7,883.79	7,875.48	28.52	28.12	150.53	200.28	34.00	411.59	371.92	39.67	10.376		
8,000.00	7,976.24	7,983.04	7,974.74	28.91	28.48	151.34	200.28	34.00	422.26	382.09	40.17	10.512		
8,100.00	8,075.49	8,082.30	8,073.99	29.30	28.83	152.11	200.28	34.00	433.01	392.34	40.67	10.646		
8,200.00	8,174.75	8,181.55	8,173.25	29.68	29.18	152.85	200.28	34.00	443.83	402.66	41.17	10.779		
8,300.00	8,274.00	8,280.81	8,272.50	30.07	29.54	153.55	200.28	34.00	454.73	413.05	41.68	10.911		
8,400.00	8,373.26	8,380.06	8,371.76	30.46	29.89	154.21	200.28	34.00	465.68	423.50	42.18	11.040		
8,500.00	8,472.51	8,479.32	8,471.01	30.85	30.24	154.85	200.28	34.00	476.70	434.02	42.68	11.168		
8,600.00	8,571.77	8,578.57	8,570.27	31.25	30.60	155.46	200.28	34.00	487.77	444.59	43.19	11.295		
8,700.00	8,671.02	8,677.83	8,669.52	31.64	30.95	156.04	200.28	34.00	498.90	455.21	43.69	11.419		
8,800.00	8,770.27	8,777.08	8,768.77	32.03	31.31	156.59	200.28	34.00	510.07	465.88	44.19	11.542		
8,900.00	8,869.53	8,876.34	8,868.03	32.42	31.66	157.12	200.28	34.00	521.29	476.59	44.70	11.663		
9,000.00	8,968.78	8,975.59	8,967.28	32.81	32.01	157.63	200.28	34.00	532.55	487.35	45.20	11.782		
9,100.00	9,068.04	9,074.85	9,066.54	33.21	32.37	158.12	200.28	34.00	543.85	498.14	45.70	11.899		
9,200.00	9,167.29	9,174.10	9,165.79	33.60	32.72	158.59	200.28	34.00	555.19	508.98	46.21	12.015		
9,300.00	9,266.55	9,273.36	9,265.05	33.99	33.08	159.04	200.28	34.00	566.56	519.85	46.71	12.129		
9,400.00	9,365.80	9,372.61	9,364.30	34.39	33.43	159.47	200.28	34.00	577.96	530.75	47.22	12.241		
9,500.00	9,465.06	9,471.87	9,463.56	34.78	33.78	159.89	200.28	34.00	589.40	541.68	47.72	12.351		
9,600.00	9,564.31	9,571.12	9,562.81	35.18	34.14	160.29	200.28	34.00	600.87	552.64	48.23	12.459		
9,700.00	9,663.57	9,670.38	9,662.07	35.57	34.49	160.67	200.28	34.00	612.36	563.63	48.73	12.566		
9,800.00	9,762.82	9,769.63	9,761.32	35.97	34.85	161.04	200.28	34.00	623.88	574.65	49.24	12.671		
9,900.00	9,862.08	9,868.89	9,860.58	36.36	35.20	161.40	200.28	34.00	635.43	585.69	49.74	12.775		
10,000.00	9,961.33	9,968.14	9,959.83	36.76	35.55	161.74	200.28	34.00	647.00	596.75	50.25	12.876		
10,033.47	9,994.56	10,001.36	9,993.06	36.89	35.67	161.85	200.28	34.00	650.88	600.46	50.42	12.910		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Merit/Mission Fed Com - Mission Fed Com 704H - OH - Plan #1		Offset Site Error:		0.00 usft	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:		0.00 usft			
Reference		Offset		Semi Major Axis			Distance											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning					
10,100.00	10,060.65	10,067.46	10,059.15	37.15	35.91	162.09	200.28	34.00	658.04	607.29	50.75	12.966						
10,200.00	10,160.23	10,167.04	10,158.73	37.53	36.27	162.37	200.28	34.00	666.76	615.50	51.26	13.008						
10,300.00	10,260.01	10,266.82	10,258.51	37.90	36.62	162.57	200.28	34.00	673.00	621.24	51.76	13.002						
10,400.00	10,359.93	10,366.74	10,358.43	38.26	36.98	162.69	200.28	34.00	676.75	624.48	52.26	12.948						
10,500.08	10,460.00	10,466.81	10,458.50	38.61	37.34	89.98	200.28	34.00	678.00	625.23	52.77	12.849						
10,600.00	10,559.92	10,566.73	10,558.42	38.95	37.69	89.98	200.28	34.00	678.00	624.73	53.27	12.729						
10,700.00	10,659.92	10,666.73	10,658.42	39.29	38.05	89.98	200.28	34.00	678.00	624.23	53.77	12.610						
10,800.00	10,759.92	10,766.73	10,758.42	39.63	38.41	89.98	200.28	34.00	678.00	623.73	54.27	12.494						
10,900.00	10,859.92	10,866.73	10,858.42	39.97	38.76	89.98	200.28	34.00	678.00	623.23	54.77	12.380						
11,000.00	10,959.92	10,966.73	10,958.42	40.31	39.12	89.98	200.28	34.00	678.00	622.73	55.27	12.268						
11,100.00	11,059.92	11,066.73	11,058.42	40.66	39.48	89.98	200.28	34.00	678.00	622.23	55.77	12.158						
11,200.00	11,159.92	11,166.73	11,158.42	41.00	39.84	89.98	200.28	34.00	678.00	621.73	56.27	12.050						
11,300.00	11,259.92	11,266.73	11,258.42	41.34	40.19	89.98	200.28	34.00	678.00	621.23	56.77	11.943						
11,307.81	11,267.74	11,274.54	11,266.24	41.37	40.22	89.98	200.28	34.00	678.00	621.19	56.81	11.935						
11,400.00	11,359.92	11,365.49	11,356.97	41.68	40.51	90.39	195.35	34.05	678.06	620.83	57.24	11.847						
11,469.08	11,429.00	11,431.35	11,421.63	41.92	40.71	91.44	183.01	34.16	678.40	620.87	57.53	11.792						
11,500.00	11,459.91	11,459.97	11,449.19	42.02	40.79	-87.37	175.34	34.23	678.71	621.06	57.65	11.773						
11,550.00	11,509.65	11,505.57	11,492.23	42.18	40.91	-86.40	160.32	34.38	679.36	621.53	57.82	11.749						
11,600.00	11,558.79	11,550.00	11,532.89	42.32	41.03	-85.46	142.43	34.55	680.17	622.19	57.98	11.731						
11,650.00	11,606.93	11,594.55	11,572.15	42.46	41.14	-84.55	121.39	34.74	681.13	623.01	58.12	11.719						
11,700.00	11,653.72	11,638.07	11,608.80	42.59	41.24	-83.69	97.95	34.96	682.20	623.96	58.24	11.713						
11,750.00	11,698.80	11,681.01	11,643.12	42.71	41.34	-82.87	72.16	35.21	683.35	625.01	58.34	11.713						
11,800.00	11,741.83	11,723.45	11,675.05	42.82	41.44	-82.10	44.22	35.47	684.56	626.13	58.43	11.716						
11,850.00	11,782.48	11,765.43	11,704.51	42.91	41.53	-81.39	14.33	35.75	685.77	627.28	58.50	11.723						
11,900.00	11,820.43	11,807.00	11,731.45	43.00	41.62	-80.73	-17.32	36.05	686.98	628.43	58.55	11.733						
11,950.00	11,855.41	11,850.00	11,756.83	43.07	41.71	-80.12	-52.02	36.38	688.14	629.53	58.61	11.740						
12,000.00	11,887.14	11,889.12	11,777.60	43.14	41.80	-79.61	-85.16	36.69	689.23	630.58	58.64	11.753						
12,050.00	11,915.38	11,929.75	11,796.73	43.19	41.89	-79.14	-121.00	37.03	690.22	631.53	58.69	11.761						
12,100.00	11,939.93	11,970.17	11,813.18	43.24	41.98	-78.75	-157.90	37.38	691.09	632.36	58.73	11.767						
12,150.00	11,960.58	12,010.39	11,826.94	43.29	42.07	-78.43	-195.69	37.73	691.82	633.03	58.79	11.768						
12,200.00	11,977.19	12,050.00	11,837.86	43.35	42.17	-78.18	-233.75	38.09	692.39	633.54	58.86	11.764						
12,250.00	11,989.63	12,090.45	11,846.28	43.41	42.26	-78.00	-273.30	38.46	692.80	633.85	58.95	11.753						
12,300.00	11,997.80	12,130.35	11,851.82	43.49	42.36	-77.90	-312.81	38.83	693.02	633.97	59.06	11.735						
12,350.00	12,001.64	12,170.22	11,854.61	43.59	42.46	-77.87	-352.57	39.21	693.06	633.88	59.18	11.711						
12,363.59	12,001.93	12,183.28	11,854.91	43.62	42.49	-77.88	-365.62	39.33	693.05	633.82	59.23	11.702						
12,400.00	12,002.28	12,216.91	11,855.33	43.70	42.58	-77.88	-399.25	39.65	693.00	633.65	59.35	11.677						
12,500.00	12,003.24	12,316.91	11,856.56	43.99	42.89	-77.90	-499.24	40.59	692.87	633.11	59.76	11.594						
12,600.00	12,004.19	12,416.91	11,857.78	44.34	43.25	-77.92	-599.22	41.53	692.75	632.49	60.26	11.497						
12,700.00	12,005.15	12,516.91	11,859.01	44.76	43.68	-77.94	-699.21	42.48	692.62	631.79	60.83	11.385						
12,800.00	12,006.11	12,616.91	11,860.24	45.23	44.16	-77.97	-799.20	43.42	692.50	631.01	61.49	11.262						
12,900.00	12,007.07	12,716.91	11,861.46	45.77	44.69	-77.99	-899.19	44.36	692.38	630.15	62.23	11.126						
13,000.00	12,008.02	12,816.91	11,862.69	46.35	45.29	-78.01	-999.18	45.30	692.25	629.21	63.04	10.981						
13,100.00	12,008.98	12,916.91	11,863.92	46.99	45.93	-78.03	-1,099.16	46.24	692.13	628.21	63.92	10.828						
13,200.00	12,009.94	13,016.91	11,865.15	47.67	46.62	-78.05	-1,199.15	47.19	692.01	627.13	64.87	10.667						
13,300.00	12,010.89	13,116.90	11,866.37	48.40	47.36	-78.07	-1,299.14	48.13	691.88	625.99	65.89	10.500						
13,400.00	12,011.85	13,216.90	11,867.60	49.18	48.15	-78.09	-1,399.13	49.07	691.76	624.79	66.98	10.329						
13,500.00	12,012.81	13,316.90	11,868.83	49.99	48.98	-78.11	-1,499.11	50.01	691.64	623.52	68.12	10.153						
13,600.00	12,013.77	13,416.90	11,870.06	50.85	49.85	-78.13	-1,599.10	50.96	691.52	622.20	69.32	9.976						
13,700.00	12,014.72	13,516.90	11,871.28	51.75	50.76	-78.15	-1,699.09	51.90	691.39	620.82	70.57	9.797						
13,800.00	12,015.68	13,616.90	11,872.51	52.68	51.71	-78.17	-1,799.08	52.84	691.27	619.39	71.88	9.618						
13,900.00	12,016.64	13,716.90	11,873.74	53.65	52.69	-78.19	-1,899.06	53.78	691.15	617.92	73.23	9.438						
14,000.00	12,017.59	13,816.90	11,874.97	54.65	53.70	-78.21	-1,999.05	54.72	691.02	616.39	74.63	9.259						

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	12,018.55	13,916.90	11,876.19	55.68	54.74	-78.24	-2,099.04	55.67	690.90	614.83	76.07	9.082		
14,200.00	12,019.51	14,016.90	11,877.42	56.74	55.82	-78.26	-2,199.03	56.61	690.78	613.22	77.56	8.906		
14,300.00	12,020.47	14,116.90	11,878.65	57.82	56.92	-78.28	-2,299.01	57.55	690.66	611.57	79.08	8.733		
14,400.00	12,021.42	14,216.90	11,879.88	58.94	58.05	-78.30	-2,399.00	58.49	690.54	609.89	80.64	8.563		
14,500.00	12,022.38	14,316.90	11,881.10	60.08	59.20	-78.32	-2,498.99	59.44	690.41	608.17	82.24	8.395		
14,600.00	12,023.34	14,416.90	11,882.33	61.24	60.38	-78.34	-2,598.98	60.38	690.29	606.42	83.87	8.231		
14,700.00	12,024.29	14,516.90	11,883.56	62.42	61.58	-78.36	-2,698.97	61.32	690.17	604.64	85.53	8.070		
14,800.00	12,025.25	14,616.90	11,884.78	63.63	62.79	-78.38	-2,798.95	62.26	690.05	602.83	87.21	7.912		
14,900.00	12,026.21	14,716.90	11,886.01	64.85	64.03	-78.40	-2,898.94	63.20	689.93	601.00	88.93	7.758		
15,000.00	12,027.17	14,816.90	11,887.24	66.09	65.29	-78.42	-2,998.93	64.15	689.80	599.13	90.67	7.608		
15,100.00	12,028.12	14,916.90	11,888.47	67.35	66.56	-78.44	-3,098.92	65.09	689.68	597.25	92.44	7.461		
15,200.00	12,029.08	15,016.90	11,889.69	68.63	67.85	-78.46	-3,198.90	66.03	689.56	595.34	94.22	7.318		
15,300.00	12,030.04	15,116.90	11,890.92	69.92	69.16	-78.48	-3,298.89	66.97	689.44	593.41	96.03	7.179		
15,400.00	12,030.99	15,216.90	11,892.15	71.23	70.48	-78.51	-3,398.88	67.92	689.32	591.45	97.86	7.044		
15,500.00	12,031.95	15,316.90	11,893.38	72.55	71.81	-78.53	-3,498.87	68.86	689.20	589.48	99.71	6.912		
15,600.00	12,032.91	15,416.90	11,894.60	73.89	73.16	-78.55	-3,598.85	69.80	689.08	587.49	101.58	6.783		
15,700.00	12,033.87	15,516.90	11,895.83	75.23	74.52	-78.57	-3,698.84	70.74	688.96	585.49	103.47	6.659		
15,800.00	12,034.82	15,616.90	11,897.06	76.59	75.89	-78.59	-3,798.83	71.68	688.83	583.46	105.37	6.537		
15,900.00	12,035.78	15,716.89	11,898.29	77.96	77.27	-78.61	-3,898.82	72.63	688.71	581.43	107.29	6.419		
16,000.00	12,036.74	15,816.89	11,899.51	79.35	78.66	-78.63	-3,998.80	73.57	688.59	579.37	109.22	6.305		
16,100.00	12,037.69	15,916.89	11,900.74	80.74	80.06	-78.65	-4,098.79	74.51	688.47	577.31	111.17	6.193		
16,200.00	12,038.65	16,016.89	11,901.97	82.14	81.48	-78.67	-4,198.78	75.45	688.35	575.23	113.13	6.085		
16,300.00	12,039.61	16,116.89	11,903.19	83.55	82.90	-78.69	-4,298.77	76.40	688.23	573.13	115.10	5.980		
16,400.00	12,040.57	16,216.89	11,904.42	84.97	84.33	-78.71	-4,398.76	77.34	688.11	571.03	117.08	5.877		
16,500.00	12,041.52	16,316.89	11,905.65	86.40	85.76	-78.74	-4,498.74	78.28	687.99	568.91	119.08	5.778		
16,600.00	12,042.48	16,416.89	11,906.88	87.83	87.21	-78.76	-4,598.73	79.22	687.87	566.79	121.08	5.681		
16,700.00	12,043.44	16,516.89	11,908.10	89.27	88.66	-78.78	-4,698.72	80.16	687.75	564.65	123.10	5.587		
16,800.00	12,044.39	16,616.89	11,909.33	90.72	90.12	-78.80	-4,798.71	81.11	687.63	562.50	125.13	5.495		
16,900.00	12,045.35	16,716.89	11,910.56	92.18	91.58	-78.82	-4,898.69	82.05	687.51	560.35	127.16	5.407		
17,000.00	12,046.31	16,816.89	11,911.79	93.64	93.05	-78.84	-4,998.68	82.99	687.39	558.18	129.21	5.320		
17,100.00	12,047.27	16,916.89	11,913.01	95.11	94.53	-78.86	-5,098.67	83.93	687.27	556.01	131.26	5.236		
17,200.00	12,048.22	17,016.89	11,914.24	96.59	96.01	-78.88	-5,198.66	84.88	687.15	553.83	133.32	5.154		
17,300.00	12,049.18	17,116.89	11,915.47	98.07	97.50	-78.90	-5,298.64	85.82	687.03	551.64	135.39	5.074		
17,400.00	12,050.14	17,216.89	11,916.70	99.56	99.00	-78.92	-5,398.63	86.76	686.91	549.45	137.47	4.997		
17,500.00	12,051.09	17,316.89	11,917.92	101.05	100.50	-78.95	-5,498.62	87.70	686.79	547.24	139.55	4.922		
17,600.00	12,052.05	17,416.89	11,919.15	102.54	102.00	-78.97	-5,598.61	88.64	686.67	545.03	141.64	4.848		
17,700.00	12,053.01	17,516.89	11,920.38	104.04	103.51	-78.99	-5,698.59	89.59	686.55	542.82	143.74	4.777		
17,800.00	12,053.97	17,616.89	11,921.61	105.55	105.02	-79.01	-5,798.58	90.53	686.44	540.60	145.84	4.707		
17,900.00	12,054.92	17,716.89	11,922.83	107.06	106.54	-79.03	-5,898.57	91.47	686.32	538.37	147.95	4.639		
18,000.00	12,055.88	17,816.89	11,924.06	108.57	108.06	-79.05	-5,998.56	92.41	686.20	536.14	150.06	4.573		
18,100.00	12,056.84	17,916.89	11,925.29	110.09	109.58	-79.07	-6,098.55	93.35	686.08	533.90	152.18	4.508		
18,200.00	12,057.79	18,016.89	11,926.51	111.61	111.11	-79.09	-6,198.53	94.30	685.96	531.66	154.30	4.445		
18,300.00	12,058.75	18,116.89	11,927.74	113.14	112.64	-79.11	-6,298.52	95.24	685.84	529.41	156.43	4.384		
18,400.00	12,059.71	18,216.89	11,928.97	114.67	114.18	-79.14	-6,398.51	96.18	685.72	527.15	158.57	4.324		
18,500.00	12,060.67	18,316.88	11,930.20	116.20	115.72	-79.16	-6,498.50	97.12	685.60	524.90	160.71	4.266		
18,600.00	12,061.62	18,416.88	11,931.42	117.74	117.26	-79.18	-6,598.48	98.07	685.49	522.64	162.85	4.209		
18,700.00	12,062.58	18,516.88	11,932.65	119.28	118.80	-79.20	-6,698.47	99.01	685.37	520.37	165.00	4.154		
18,800.00	12,063.54	18,616.88	11,933.88	120.82	120.35	-79.22	-6,798.46	99.95	685.25	518.10	167.15	4.100		
18,900.00	12,064.49	18,716.88	11,935.11	122.36	121.90	-79.24	-6,898.45	100.89	685.13	515.82	169.31	4.047		
19,000.00	12,065.45	18,816.88	11,936.33	123.91	123.45	-79.26	-6,998.43	101.83	685.01	513.55	171.47	3.995		
19,100.00	12,066.41	18,916.88	11,937.56	125.46	125.01	-79.28	-7,098.42	102.78	684.90	511.27	173.63	3.945		
19,200.00	12,067.37	19,016.88	11,938.79	127.01	126.56	-79.30	-7,198.41	103.72	684.78	508.98	175.80	3.895		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,300.00	12,068.32	19,116.88	11,940.02	128.57	128.12	-79.33	-7,298.40	104.66	684.66	506.69	177.97	3.847		
19,400.00	12,069.28	19,216.88	11,941.24	130.13	129.69	-79.35	-7,398.38	105.60	684.54	504.40	180.14	3.800		
19,500.00	12,070.24	19,316.88	11,942.47	131.69	131.25	-79.37	-7,498.37	106.55	684.43	502.11	182.32	3.754		
19,600.00	12,071.19	19,416.88	11,943.70	133.25	132.82	-79.39	-7,598.36	107.49	684.31	499.81	184.50	3.709		
19,700.00	12,072.15	19,516.88	11,944.93	134.81	134.39	-79.41	-7,698.35	108.43	684.19	497.51	186.68	3.665		
19,800.00	12,073.11	19,616.88	11,946.15	136.38	135.96	-79.43	-7,798.33	109.37	684.07	495.21	188.86	3.622		
19,900.00	12,074.07	19,716.88	11,947.38	137.95	137.53	-79.45	-7,898.32	110.31	683.96	492.91	191.05	3.580		
20,000.00	12,075.02	19,816.88	11,948.61	139.52	139.10	-79.47	-7,998.31	111.26	683.84	490.60	193.24	3.539		
20,100.00	12,075.98	19,916.88	11,949.83	141.09	140.68	-79.49	-8,098.30	112.20	683.72	488.29	195.44	3.498		
20,200.00	12,076.94	20,016.88	11,951.06	142.67	142.26	-79.52	-8,198.29	113.14	683.61	485.97	197.63	3.459		
20,300.00	12,077.89	20,116.88	11,952.29	144.24	143.84	-79.54	-8,298.27	114.08	683.49	483.66	199.83	3.420		
20,400.00	12,078.85	20,216.88	11,953.52	145.82	145.42	-79.56	-8,398.26	115.03	683.37	481.34	202.03	3.383		
20,500.00	12,079.81	20,316.88	11,954.74	147.40	147.00	-79.58	-8,498.25	115.97	683.26	479.02	204.23	3.345		
20,600.00	12,080.77	20,416.88	11,955.97	148.98	148.59	-79.60	-8,598.24	116.91	683.14	476.70	206.44	3.309		
20,700.00	12,081.72	20,516.88	11,957.20	150.56	150.17	-79.62	-8,698.22	117.85	683.02	474.38	208.64	3.274		
20,800.00	12,082.68	20,616.88	11,958.43	152.15	151.76	-79.64	-8,798.21	118.79	682.91	472.05	210.85	3.239		
20,900.00	12,083.64	20,716.88	11,959.65	153.73	153.35	-79.66	-8,898.20	119.74	682.79	469.73	213.06	3.205		
21,000.00	12,084.59	20,816.88	11,960.88	155.32	154.94	-79.69	-8,998.19	120.68	682.67	467.40	215.28	3.171		
21,100.00	12,085.55	20,916.87	11,962.11	156.91	156.53	-79.71	-9,098.17	121.62	682.56	465.07	217.49	3.138		
21,200.00	12,086.51	21,016.87	11,963.34	158.49	158.12	-79.73	-9,198.16	122.56	682.44	462.73	219.71	3.106		
21,300.00	12,087.47	21,116.87	11,964.56	160.09	159.72	-79.75	-9,298.15	123.51	682.33	460.40	221.93	3.075		
21,400.00	12,088.42	21,216.87	11,965.79	161.68	161.31	-79.77	-9,398.14	124.45	682.21	458.06	224.15	3.044		
21,500.00	12,089.38	21,316.87	11,967.02	163.27	162.91	-79.79	-9,498.12	125.39	682.10	455.73	226.37	3.013		
21,600.00	12,090.34	21,416.87	11,968.25	164.86	164.50	-79.81	-9,598.11	126.33	681.98	453.39	228.59	2.983		
21,700.00	12,091.29	21,516.87	11,969.47	166.46	166.10	-79.84	-9,698.10	127.27	681.86	451.05	230.82	2.954		
21,800.00	12,092.25	21,616.87	11,970.70	168.06	167.70	-79.86	-9,798.09	128.22	681.75	448.71	233.04	2.925		
21,900.00	12,093.21	21,716.87	11,971.93	169.65	169.30	-79.88	-9,898.08	129.16	681.63	446.36	235.27	2.897		
22,000.00	12,094.17	21,816.87	11,973.15	171.25	170.90	-79.90	-9,998.06	130.10	681.52	444.02	237.50	2.870		
22,100.00	12,095.12	21,916.87	11,974.38	172.85	172.50	-79.92	-10,098.05	131.04	681.40	441.67	239.73	2.842		
22,173.33	12,095.82	21,990.20	11,975.28	174.03	173.68	-79.94	-10,171.37	131.73	681.32	439.95	241.37	2.823		
22,178.09	12,095.87	21,990.86	11,975.29	174.10	173.69	-79.94	-10,172.03	131.74	681.33	439.95	241.38	2.823		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3324.9' GE + 30' KB @ 3354.90usft

Offset Depths are relative to Offset Datum

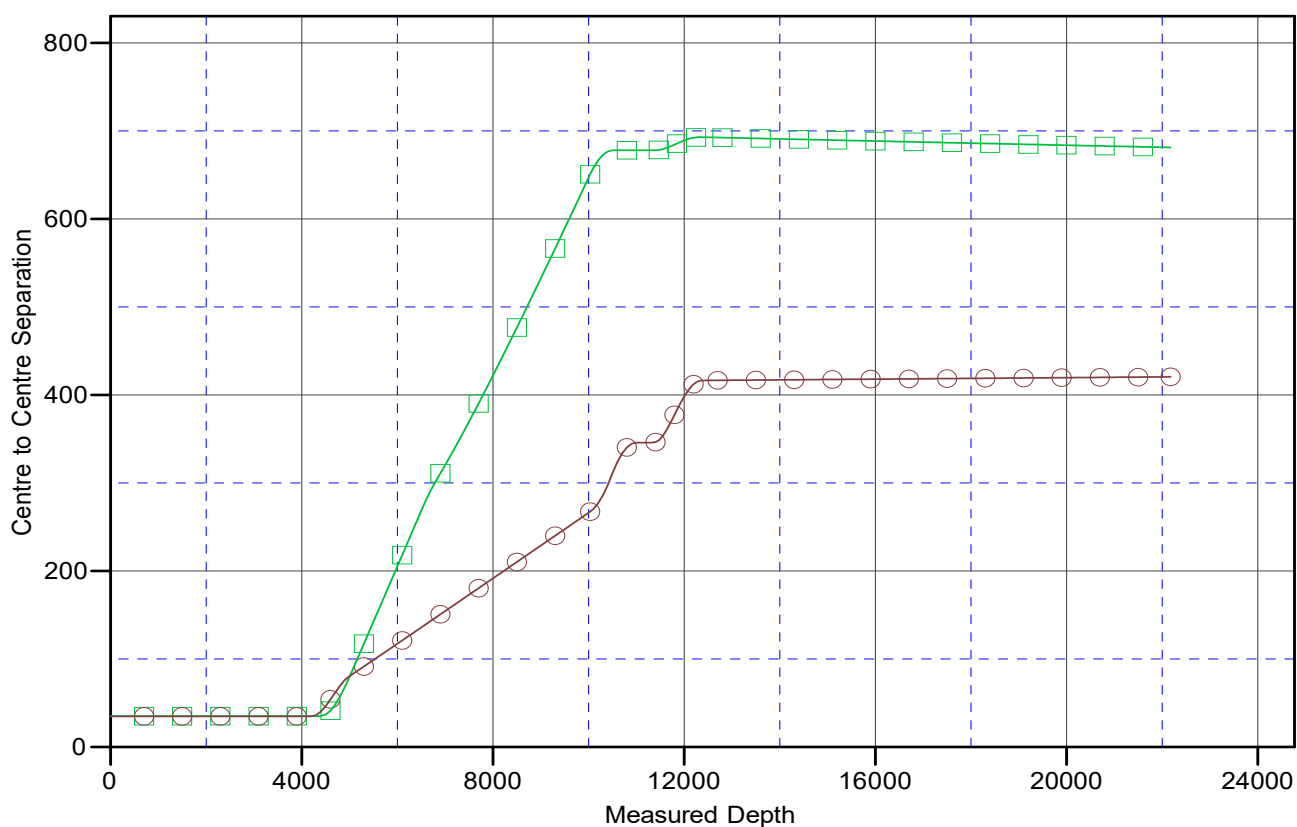
Central Meridian is -104.333334

Coordinates are relative to: Merit Fed Com 703H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.54°

Ladder Plot



LEGEND

Mission Fed Com 704H, OH, Plan #1 V0
 Merit Fed Com 602H, OH, Plan #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Merit Fed Com 703H
Project:	Lea County, NM (NAD83)	TVD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Reference Site:	Merit/Mission Fed Com	MD Reference:	3324.9' GE + 30' KB @ 3354.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Merit Fed Com 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3324.9' GE + 30' KB @ 3354.90usft

Offset Depths are relative to Offset Datum

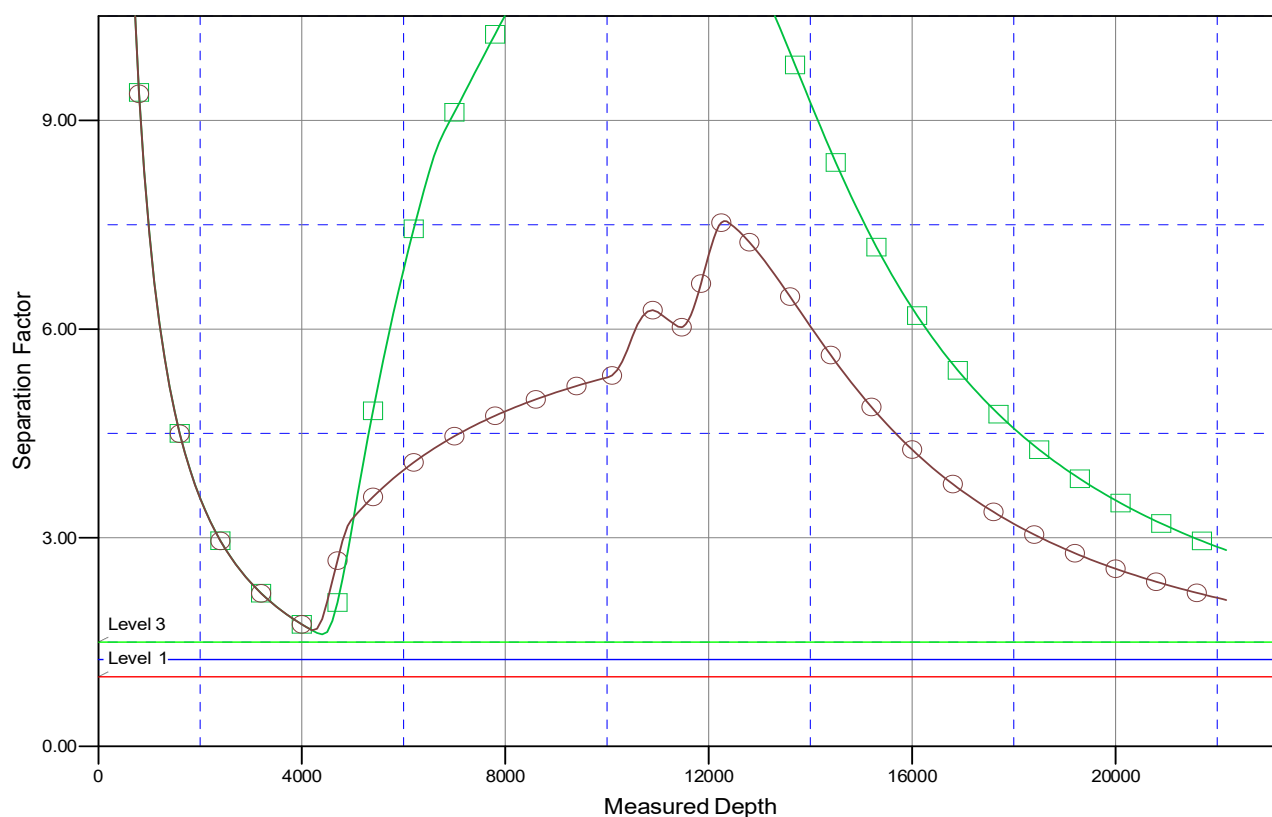
Central Meridian is -104.333334

Coordinates are relative to: Merit Fed Com 703H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

Mission Fed Com 704H, OH, Plan #1 V0
 Merit Fed Com 602H, OH, Plan #1 V0

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM138897
LOCATION:	Section 1, T.25 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Merit Fed Com 602H
SURFACE HOLE FOOTAGE:	250'/N & 2409'/E
BOTTOM HOLE FOOTAGE:	150'/S & 1920'/W

WELL NAME & NO.:	Merit Fed Com 703H
SURFACE HOLE FOOTAGE:	250'/N & 2374'/E
BOTTOM HOLE FOOTAGE:	150'/S & 2265'/W

COA

H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☐ Multibowl	☒ Both
Other	☒ 4 String Area	☒ Capitan Reef	☐ WIPP
Other	☒ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ Unit

A. HYDROGEN SULFIDE

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **1335 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature

survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 200 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.
4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7-5/8 inch intermediate casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 10,000 (10M) Annular which shall be tested to 10,000 (10M) psi.**

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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



Hydrogen Sulfide Plan

- A. All personnel shall receive proper awareness H₂S training.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment
 - a. Well Control Equipment
 - i. Flare line 150' from wellhead to be ignited by auto ignition sparking system.
 - ii. Choke manifold with a remotely operated hydraulic choke.
 - iii. Mud/gas separator
 - b. Protective equipment for essential personnel
 - i. Breathing Apparatus
 - 1. Rescue packs (SCBA) – 1 unit shall be placed at each briefing area, 2 shall be stored in a safety trailer on site.
 - 2. Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity
 - 3. Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation
 - ii. Auxiliary Rescue Equipment
 - 1. Stretcher
 - 2. Two OSHA full body harnesses
 - 3. 100 feet of 5/8 inches OSHA approved rope
 - 4. 1-20# class ABC fire extinguisher
 - c. H₂S Detection and Monitoring Equipment
 - i. A stationary detector with three sensors will be placed in the doghouse if equipped, set to visually alarm at 10 ppm and audible at 14 ppm. The detector will be calibrated a minimum of every 30 days or as needed. The sensors will be placed in the following places:
 - 1. Rig Floor
 - 2. Below Rig Floor / Near BOPs
 - 3. End of flow line or where well bore fluid is being discharged (near shakers)
 - ii. If H₂S is encountered, measured values and formations will be provided to the BLM.
 - d. Visual Warning Systems
 - i. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - ii. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - iii. Two windsocks will be placed in strategic locations, visible from all angles.
 - e. Mud Program
 - i. The Mud program will be designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.



- f. Metallurgy
 - i. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service at the anticipated operating pressures to prevent sour sulfide stress cracking.
- g. Communication
 - i. Communication will be via cell phones and walkie talkies on location.

Franklin Mountain Energy has conducted a review of offset operated wells to determine if an H₂S contingency plan is required for the proposed well. Based on concentrations of offset wells, proximity to main roads, and distance to populated areas, the radius of exposure created by a potential release was determined to be minimal and low enough to not necessitate an H₂S contingency plan. This will be reevaluated during wellbore construction if H₂S is observed and after the well is on production.



Emergency Contact List:

Vladimir Roudakov, Drilling Engineer	Cell 720 933 9784
Rachael Overbey, Project and Regulatory Director	Cell 303 570 4057
Franklin Mountain Energy Afterhours Emergency Call Tree:	720-640-7517

EMERGENCY NUMBERS:

<u>Agency</u>	<u>Telephone Number</u>
BLM – Carlsbad Mainline	575-234-5972
BLM – Spill Emergency	575-234-6235
BLM – Engineering Emergency	575-361-2822
NMOCD District 1 – Hobbs Mainline	575-393-6161
NMOCD Emergency Line	575-370-3186
Wild Well Control	281-784-4700
H2S Emergency response:	
Air Ambulance New Mexico – Lea Co Reginal	575-391-2934
Lea County Sheriff's Department	575-396-3611
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Lea County Regional Medical Center	575-492-5000
Jal Community Hospital	505-395-2511
Lea County Emergency Management	575-396-8602
Poison Control Center	800-222-1222



Merit Federal 703H

1. Geologic name of surface location: Permian
2. Estimated tops of important geological markers:

Formations	PROG SS	PROG TVD	Picked TVD	delta	Potential/Issues
Cenozoic Alluvium (surface)	3,325'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,136'	1,219'			Carbonates
Salado	2,018'	1,337'			Salt, Carbonate & Clastics
Base Salt	-133'	3,488'			Shaley Carbonate & Shale
Lamar	-1,698'	5,053'			Carbonate & Clastics
Bell Canyon	-1,756'	5,111'			Sandstone - oil/gas/water
Cherry Canyon	-2,644'	5,999'			Sandstone - oil/gas/water
Brushy Canyon	-4,065'	7,420'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,340'	8,695'			Shale/Carbonates - oil/gas
Avalon	-5,437'	8,792'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,629'	9,984'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,759'	10,114'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,135'	10,490'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,683'	11,038'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,215'	11,570'			Sandstone - oil/gas/water
Wolfcamp	-8,532'	11,887'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,567'	11,922'			Overpressure Shale - Oil/Gas
HZ Target	-8,644'	11,999'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,759'	12,114'			Overpressure Shale - Oil/Gas

3. Estimated depth of anticipated fresh water, oil or gas:

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	5,053'	Oil
Bone Spring	9,984'	Oil
Wolfcamp	11,887'	Oil

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Surface freshwater sands will be protected by setting 13 3/8" casing at 1,300' and circulating cement back to surface.

4. Casing Program:

All casings strings will be run new. Safety factors calculated assuming the well is vertical.

Casing string	Weight	Grade	Burst	Collapse	Tension	Conn	Length	API design factor			
								Burst	Collapse	Tension	Coupling
Surface 13 3/8"	54.5	J-55	2730	1130	853	BTC 909	1300	1.18	1.67	4.99	5.32
Intermediate 9 5/8"	40	HCL-80	7430	4230	916	BTC 1042	5400	1.72	1.67	2.90	3.30
Intermediate 7 5/8"	29.7	HCP-110	8280	7150	827	Stinger 564	11950	1.11	1.28	1.82	1.24
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	22178	1.32	1.4	1.19	1.08



Preliminary plan is to set 7 5/8" string before entering Wolfcamp formation at 11,855'TVD/11,950'MD at 48° Inc due too potential overpressure. Safety factors calculated assuming the well is vertical.

Cementing Program:

Cementing Stage tool can be placed in the 1st Intermediate string as a contingency to ensure required TOC to surface.

String Type	Hole Size	Casing Size	Setting Depth	Sacks	Type of cmt	Lead Yield ft ³ /sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft ³ /sk	Water gal/sk	TOC	Excess
Surf	17.5	13.375	1300	795	Extenda Cem, 13.5 ppg Class C, 3lb/sk Kol-Seal	1.747	9.06	0	334	HalCem TM, 14.8 ppg, Class C, 1% CaCl ₂ , 0.125pps Celo-Flake	1.349	6.51	1000	100%
Int1	12.25	9.625	5400	1167	0.125pps Poly-E-Flake Neocem TM, 11.5 ppg, Class C 5% Salt,	2.444	14.32	0	153	HalCem TM, 14.8 ppg, Class C, 0.1% HR 800 .125 pps Poly-E-Flake	1.334	6.42	5100	100%
Int2	8.75	7.625	11950	338	0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal NeoCem, 11 ppg, Class C 3lb/sk Bridgemaker Gel, 5% Salt, 5pps LCM, 0.25pps Cello-Flake NeoCem, 13.5	2.798	17.15	4400	112	NeoCem 13.2 ppg, Class C 0.25 pps Cello-Flake, 2% CaCl ₂	1.44	7.29	10950	50%
Prod	6.75	5.5	22178	827	ppg, Gas Migration Control	1.357	6.65	10950						20%

5. Minimum Specifications for Pressure Control:

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5,000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on bottom and 4 ½" x 7" variable pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5,000/250 psig and the annular preventer to 5,000/250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the second intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/250 psig and the annular preventer to 5,000/250 psig. The second intermediate casing will be tested to 2000 psi for 30 minutes prior to drillout.

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.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.



6. Types and characteristics of the proposed mud system:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal. The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,300'	Fresh - Gel	8.6-8.8	28-34	N/c
1,300' – 11,950'	Brine	8.8-10.2	28-34	N/c
11,950' – 22,178' Lateral	Oil Base	10.0-11.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 10-11 ppg. In order to maintain hole stability, mud weights up to 12.5 ppg may be utilized.

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

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

7. Auxiliary well control and monitoring equipment:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

(D) A wear bushing will be installed in the wellhead prior to drilling out of the surface casing.

8. Logging, testing and coring program:

GR–CCL–CNL Will be run in cased hole during completions phase of operations.

Open-hole logs are not planned for this well.

9. Abnormal conditions, pressures, temperatures and potential hazards:

The estimated bottom-hole temperature at 12,095' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,594 psig (based on 12.5 ppg MW). Hydrogen sulfate may be present in the area. All necessary precautions will be taken before drilling operations commence. See Hydrogen Sulfide Plan below:

10. Hydrogen Sulfide Plan:

A. All personnel shall receive proper awareness H₂S training.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment

a. Well Control Equipment

i. Flare line 150' from wellhead to be ignited by auto ignition sparking system.

ii. Choke manifold with a remotely operated hydraulic choke.

iii. Mud/gas separator

b. Protective equipment for essential personnel

i. Breathing Apparatus

1. Rescue packs (SCBA) – 1 unit shall be placed at each briefing area, 2 shall be stored in a safety trailer on site.

2. Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity



3. Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation
- ii. Auxiliary Rescue Equipment
 1. Stretcher
 2. Two OSHA full body harnesses
 3. 100 feet of 5/8 inches OSHA approved rope
 4. 1-20# class ABC fire extinguisher
- c. H2S Detection and Monitoring Equipment
 - i. A stationary detector with three sensors will be placed in the doghouse if equipped, set to visually alarm at 10 ppm and audible at 14 ppm. The detector will be calibrated a minimum of every 30 days or as needed. The sensors will be placed in the following places:
 1. Rig Floor
 2. Below Rig Floor / Near BOPs
 3. End of flow line or where well bore fluid is being discharged (near shakers)
 - ii. If H2S is encountered, measured values and formations will be provided to the BLM.
- d. Visual Warning Systems
 - i. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - ii. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - iii. Two windsocks will be placed in strategic locations, visible from all angles.
- e. Mud Program
 - i. The Mud program will be designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.
- f. Metallurgy
 - i. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service at the anticipated operating pressures to prevent sour sulfide stress cracking.
- g. Communication
 - i. Communication will be via cell phones and walkie talkies on location.

Franklin Mountain Energy has conducted a review of offset operated wells to determine if an H2S contingency plan is required for the proposed well. Based on concentrations of offset wells, proximity to main roads, and distance to populated areas, the radius of exposure created by a potential release was determined to be minimal and low enough to not necessitate an H2S contingency plan. This will be reevaluated during wellbore construction if H2S is observed and after the well is on production.

11. Anticipated starting date and duration of operations:

The drilling operations on the well should be finished in approximately one month. However, in order to minimize disturbance in the area and to improve efficiency Franklin Mountain is planning to drill all the wells on the pad prior to commence completion operations. To even further reduce the time heavy machinery is used the “batch drilling” method may be used. A batch drilling sequence sundry will be submitted for BLM approval prior to spud. A drilling rig with walking/skidding capabilities will be used.

**12. Disposal/environmental concerns:**

- (A) Drilled cuttings will be hauled to and disposed of in a state-certified disposal site.
- (B) Non-hazardous waste mud/cement from the drilling process will be also be hauled to and disposed of in a state-certified disposal site.
- (C) Garbage will be hauled to the Pecos City Landfill.
- (D) Sewage (grey water) will be hauled to the Carlsbad City Landfill

13. Wellhead:

A multi-bowl wellhead system will be utilized.

After running the 13 3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5,000 psi pressure test. This pressure test will be repeated at least every 21 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 5,000 psi.

After running the 2nd intermediate casing, and before drilling out, the wellhead, BOP, and related equipment will be tested to 10,000/250 psig.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cameron Multi-Bowl WH system has been sent to the BLM office in Carlsbad.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing strings. After installation of the first intermediate string the pack-off and lower flanges will be pressure tested to 5000 psi. After installation of the second intermediate string, the pack-off and upper flange will be pressure tested to 10,000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

14. Additional variance requests**A. Casing.**

In order to minimize potential environmental and technical hazards, this well is planned with two intermediate strings of casing.

1. Variance is requested to wave the centralizer requirements for the 7 5/8" casing due to the tight clearance with 9 5/8" string.
2. Variance is requested to wave/reduce the centralizer requirements for the 5 1/2" casing due to the tight clearance with 6 3/4" hole and 5 1/2" casing due to tight clearances.

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 23284

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
FRANKLIN MOUNTAIN ENERGY LLC	44 Cook Street	373910	23284	FORM 3160-3
Suite 1000	Denver, CO80206			

OCD Reviewer	Condition
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string