

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. [330328]
2. Name of Operator [373910]		9. API Well No. 30-025-48577
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory [97088]
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor.
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 03/29/2021

SL

(Continued on page 2)



Approval Date: 01/15/2021

 KZ
 03/30/2021

*(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: SESE / 250 FSL / 812 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.109301 / LONG: -103.315356 (TVD: 0 feet, MD: 0 feet)
PPP: SWSE / 0 FSL / 1689 FEL / TWSP: 25S / RANGE: 35E / SECTION: 13 / LAT: 32.123145 / LONG: -103.318181 (TVD: 11615 feet, MD: 16700 feet)
PPP: SWNE / 2641 FSL / 1689 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.115874 / LONG: -103.318184 (TVD: 11660 feet, MD: 14100 feet)
PPP: NWSE / 1320 FSL / 1689 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.112246 / LONG: -103.318186 (TVD: 11683 feet, MD: 12800 feet)
PPP: SWSE / 640 FSL / 1689 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.110376 / LONG: -103.318187 (TVD: 11695 feet, MD: 12094 feet)
BHL: NWNE / 150 FNL / 1689 FEL / TWSP: 25S / RANGE: 35E / SECTION: 13 / LAT: 32.137255 / LONG: -103.318176 (TVD: 11524 feet, MD: 21874 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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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 30-025-48577		² Pool Code 97088	³ Pool Name WC-025 G-08 S253534O;BONE SPRING	
⁴ Property Code 330328	⁵ Property Name SANTA FE FEDCOM			⁶ Well Number 603H
⁷ OGRID No. 373910	⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC			⁹ Elevation 3079.8

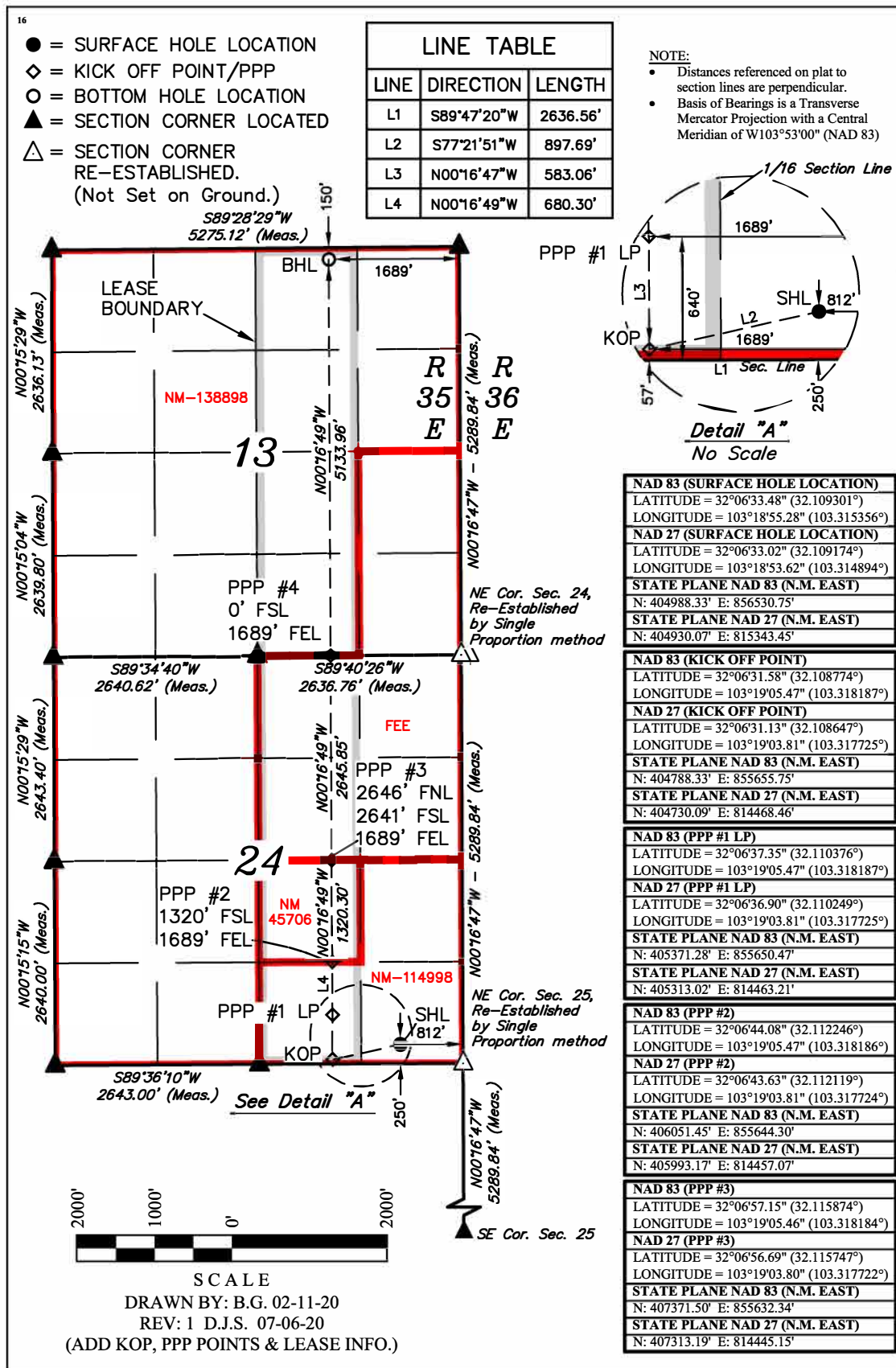
¹⁰ Surface Location

UL or lot no. P	Section 24	Township 25S	Range 35E	Lot Idn	Feet from the 250	North/South line SOUTH	Feet from the 812	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. B	Section 13	Township 25S	Range 35E	Lot Idn	Feet from the 150	North/South line NORTH	Feet from the 1689	East/West line EAST	County LEA
¹² Dedicated Acres 320		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.



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 divisor.

Signature Julia Christ Date 7/14/2020

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 11, 2020

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



Certificate Number:

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'33.48" (32.109301°)
LONGITUDE = 103°18'55.28" (103.315356°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'33.02" (32.109174°)
LONGITUDE = 103°18'53.62" (103.314894°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404988.33' E: 856530.75'
STATE PLANE NAD 27 (N.M. EAST)
N: 404930.07' E: 815343.45'
NAD 83 (KICK OFF POINT)
LATITUDE = 32°06'31.58" (32.108774°)
LONGITUDE = 103°19'05.47" (103.318187°)
NAD 27 (KICK OFF POINT)
LATITUDE = 32°06'31.13" (32.108647°)
LONGITUDE = 103°19'03.81" (103.317725°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404788.33' E: 855655.75'
STATE PLANE NAD 27 (N.M. EAST)
N: 404730.09' E: 814468.46'
NAD 83 (PPP #1 LP)
LATITUDE = 32°06'37.35" (32.110376°)
LONGITUDE = 103°19'05.47" (103.318187°)
NAD 27 (PPP #1 LP)
LATITUDE = 32°06'36.90" (32.110249°)
LONGITUDE = 103°19'03.81" (103.317725°)
STATE PLANE NAD 83 (N.M. EAST)
N: 405371.28' E: 855650.47'
STATE PLANE NAD 27 (N.M. EAST)
N: 405313.02' E: 814463.21'
NAD 83 (PPP #2)
LATITUDE = 32°06'44.08" (32.112246°)
LONGITUDE = 103°19'05.47" (103.318186°)
NAD 27 (PPP #2)
LATITUDE = 32°06'43.63" (32.112119°)
LONGITUDE = 103°19'03.81" (103.317724°)
STATE PLANE NAD 83 (N.M. EAST)
N: 406051.45' E: 855644.30'
STATE PLANE NAD 27 (N.M. EAST)
N: 405993.17' E: 814457.07'
NAD 83 (PPP #3)
LATITUDE = 32°06'57.15" (32.115874°)
LONGITUDE = 103°19'05.46" (103.318184°)
NAD 27 (PPP #3)
LATITUDE = 32°06'56.69" (32.115747°)
LONGITUDE = 103°19'03.80" (103.317722°)
STATE PLANE NAD 83 (N.M. EAST)
N: 407371.50' E: 855632.34'
STATE PLANE NAD 27 (N.M. EAST)
N: 407313.19' E: 814445.15'

NAD 83 (PPP #4)
LATITUDE = 32°07'23.32" (32.123145°)
LONGITUDE = 103°19'05.45" (103.318181°)
NAD 27 (PPP #4)
LATITUDE = 32°07'22.87" (32.123019°)
LONGITUDE = 103°19'03.79" (103.317719°)
STATE PLANE NAD 83 (N.M. EAST)
N: 410016.86' E: 855608.35'
STATE PLANE NAD 27 (N.M. EAST)
N: 409958.47' E: 814421.27'
NAD 83 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'14.12" (32.137255°)
LONGITUDE = 103°19'05.43" (103.318176°)
NAD 27 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'13.66" (32.137128°)
LONGITUDE = 103°19'03.76" (103.317712°)
STATE PLANE NAD 83 (N.M. EAST)
N: 415149.87' E: 855561.81'
STATE PLANE NAD 27 (N.M. EAST)
N: 415091.34' E: 814374.93'

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

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 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
Santa Fe Fed Com 603H 30-025-48577	TBD	P-24-25S-35E	250 FSL 812 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Santa Fe Fed Com 705H	TBD	P-24-25S-35E	250 FSL 777 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Zia Fed Com 704H	TBD	P-24-25S-35E	250 FSL 742 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Zia Fed Com 704H	TBD	P-24-25S-35E	250 FSL 707 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 Energy Transfer Company and will be connected to Energy Transfer Company's gathering system located in Lea County, New Mexico. It will require 5,500' of pipeline to connect the facility to low/high pressure gathering system. Franklin Mountain Energy, LLC provides (periodically) to Energy Transfer Company 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 Energy Transfer Company have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Energy Transfer Company's Keystone Gas Processing Facility located in Sec.5, Block B-2, Kermit, Winkler Co., Texas. 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 Energy Transfer Company'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



Santa Fe Fed Com 603H

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)	3,080'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,417'	693'			Carbonates
Salado	1,814'	1,296'			Salt, Carbonate & Clastics
Base Salt	-987'	4,097'			Shaley Carbonate & Shale
Lamar	-1,753'	4,863'			Carbonate & Clastics
Bell Canyon	-1,805'	4,915'			Sandstone - oil/gas/water
Cherry Canyon	-2,838'	5,948'			Sandstone - oil/gas/water
Brushy Canyon	-4,140'	7,250'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,391'	8,501'			Shale/Carbonates - oil/gas
Avalon	-5,414'	8,524'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,803'	9,913'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,931'	10,041'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,325'	10,435'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,774'	10,884'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,425'	11,535'			Sandstone - oil/gas/water
HZ Target at SHL	-8,593'	11,703'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,728'	11,838'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,763'	11,873'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,955'	12,065'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	4,915'	Oil
Bone Spring	9,913'	Oil
Wolfcamp	11,838'	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. Capitan Reef boundary is near surface hole locations, but exact location is unknown. While drilling, FME will be prepared to switch over to fresh water should we encounter the reef and have losses up to 50%.

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	12094	1.1	1.26	1.8	1.23
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	21874	1.32	1.42	1.21	1.09



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	Neocem TM, 11.5 ppg, Class C 5% Salt, 0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal	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	12094	341	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	11094	50%
Prod	6.75	5.5	21874	795	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11094						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' – 12,094'	Brine	8.8-10.2	28-34	N/c
12,094' – 21,874' 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 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 11,695' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,297 psig (based on 12 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.

Released to Imaging: 3/30/2021 10:25:26 AM

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Santa Fe Fed/Zia Fed
Well: Santa Fe Fed Com 603H
Wellbore: OH
Design: Plan #2



Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.02°

Magnetic Field
Strength: 47586.4nT
Dip Angle: 59.88°
Date: 3/10/2020
Model: IGRF2020

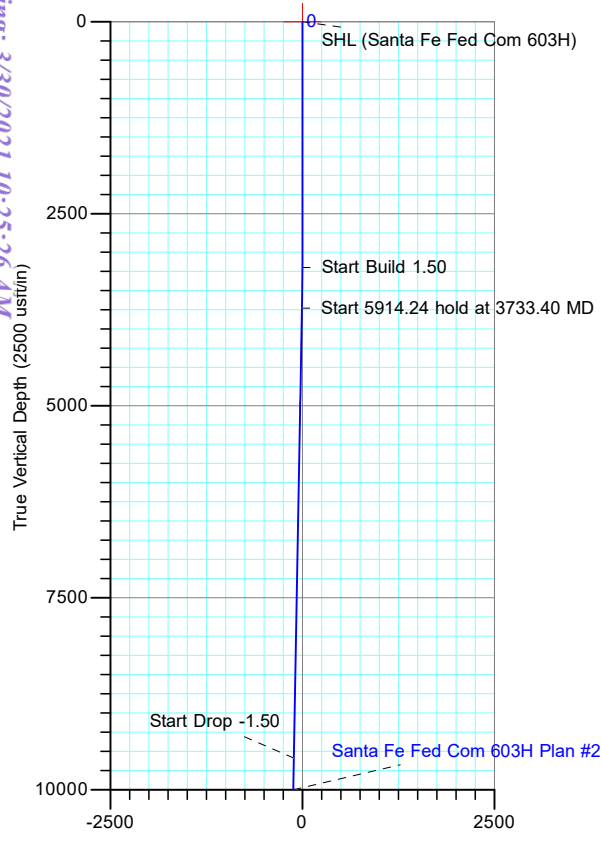
PROJECT DETAILS: Lea County, NM (NAD83)

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



Received by OCD: 3/26/2021 4:05:49 PM

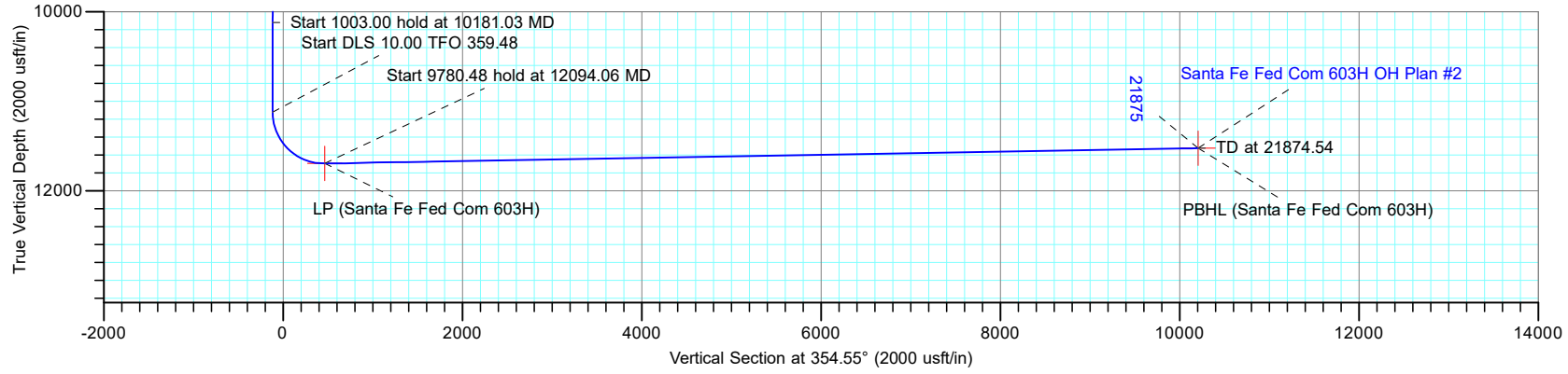
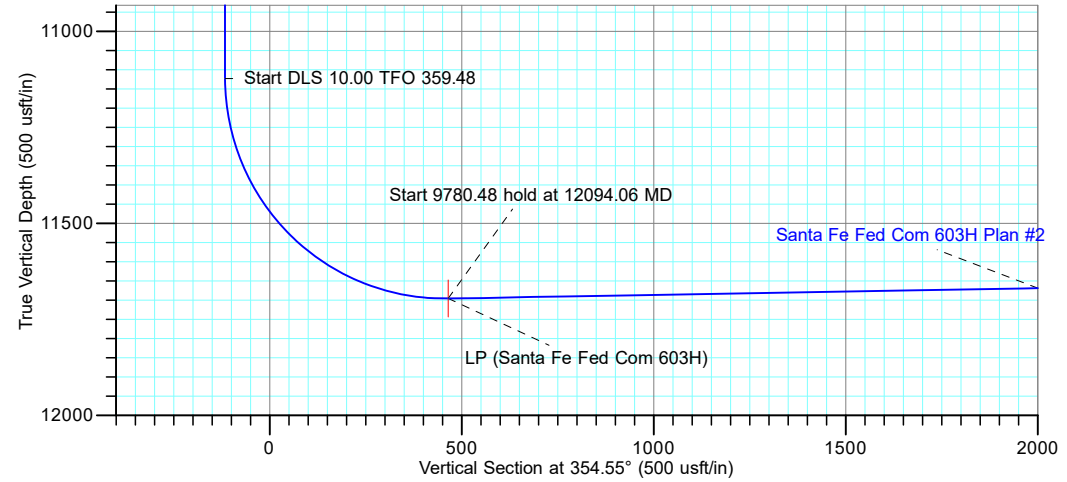
3079.8' GE + 30' KB @ 3109.80usft



SECTION DETAILS										Annotation
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		Start Build 1.50
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00		Start 5914.24 hold at 3733.40 MD
3733.40	8.00	257.12	3731.67	-8.29	-36.25	1.50	257.12	-4.81		Start Drop -1.50
9647.64	8.00	257.12	9588.33	-191.71	-838.75	0.00	0.00	-111.23		Start 1003.00 hold at 10181.03 MD
10181.03	0.00	0.00	10120.00	-200.00	-875.00	1.50	180.00	-116.04		Start DLS 10.00 TFO 359.48
11184.03	0.00	0.00	11123.00	-200.00	-875.00	0.00	0.00	-116.04		Start 9780.48 hold at 12094.06 MD
12094.06	91.00	359.48	11695.87	382.95	-880.29	10.00	359.48	464.78		TD at 21874.54
21874.54	91.00	359.48	11524.82	10161.54	-968.94	0.00	0.00	10207.63		

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Santa Fe Fed Com 603H)	11695.87	382.95	-880.29	32.110376	-103.318187
PBHL (Santa Fe Fed Com 603H)	11524.82	10161.54	-968.94	32.137255	-103.318176
SHL (Santa Fe Fed Com 603H)	0.00	0.00	0.00	32.109301	-103.315356



TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #2 (Santa Fe Fed Com 603H/OH)
Santa Fe Fed/Zia Fed
Created By: Dustin Ault Date: 23:32, June 21 2020
Date: _____
Approved: _____ Date: _____

Page 13 of 114

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Santa Fe Fed/Zia Fed
Well: Santa Fe Fed Com 603H
Wellbore: OH
Design: Plan #2



Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.02°

Magnetic Field
Strength: 47586.4nT
Dip Angle: 59.88°
Date: 3/10/2020
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

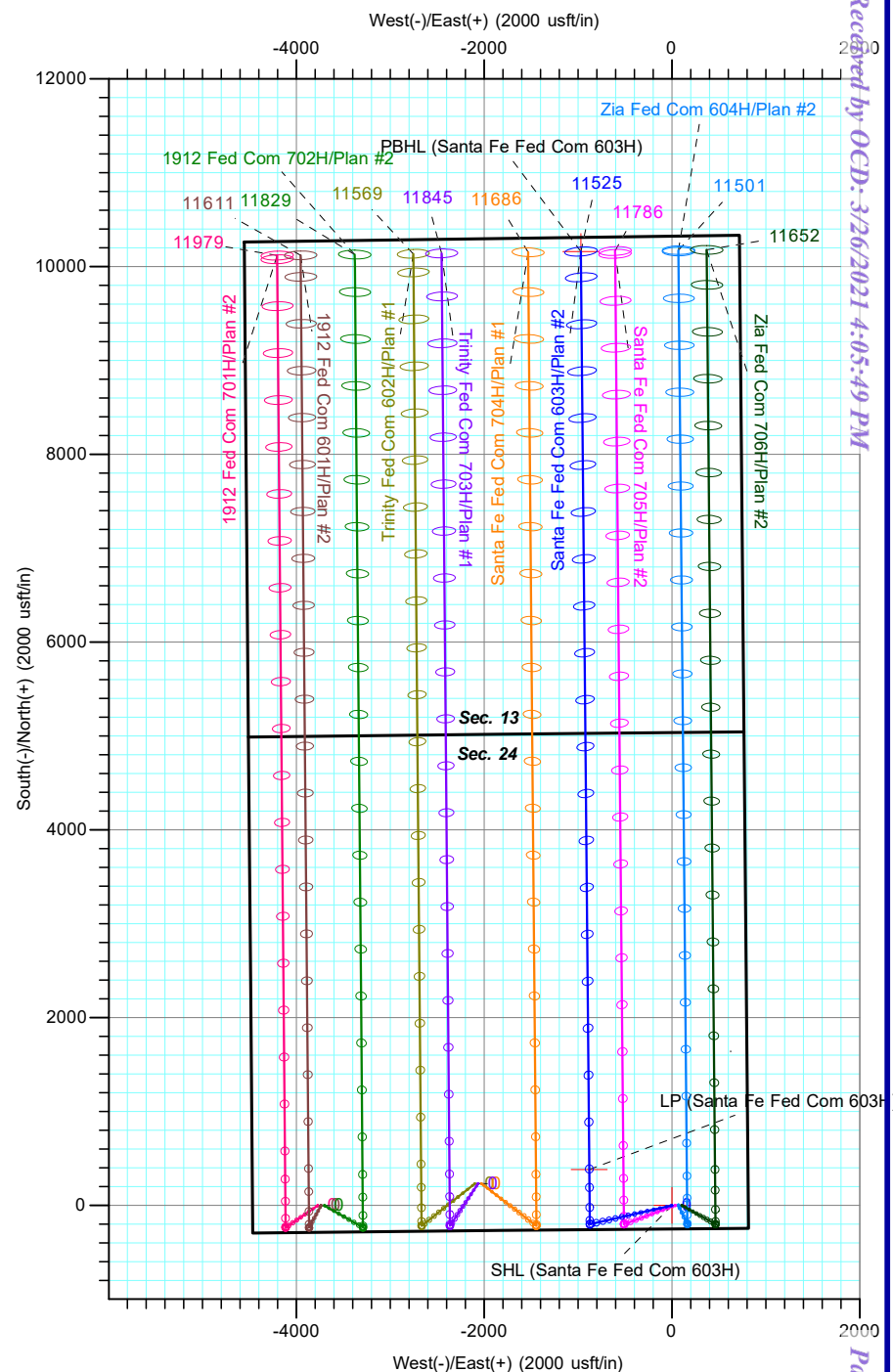
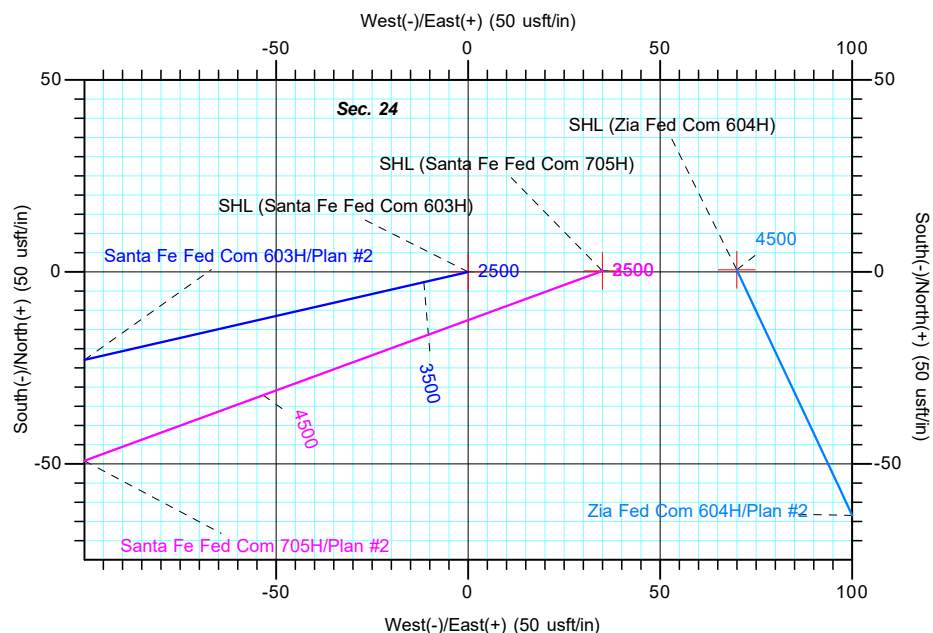


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Santa Fe Fed Com 603H)	11695.87	382.95	-880.29	405371.28	855650.46	32.110376	-103.318187
PBHL (Santa Fe Fed Com 603H)	11524.82	10161.54	-968.94	415149.87	855561.81	32.137255	-103.318176
SHL (Santa Fe Fed Com 603H)	0.00	0.00	0.00	404988.33	856530.75	32.109301	-103.315356

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	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
3733.40	8.00	257.12	3731.67	-8.29	-36.25	1.50	257.12	-4.81	Start 5914.24 hold at 3733.40 MD
9647.64	8.00	257.12	9588.33	-191.71	-838.75	0.00	0.00	-111.23	Start Drop -1.50
10181.03	0.00	0.00	10120.00	-200.00	-875.00	1.50	180.00	-116.04	Start 1003.00 hold at 10181.03 MD
11184.03	0.00	0.00	11123.00	-200.00	-875.00	0.00	0.00	-116.04	Start DLS 10.00 TFO 359.48
12094.06	91.00	359.48	11695.87	382.95	-880.29	10.00	359.48	464.78	Start 9780.48 hold at 12094.06 MD
21874.54	91.00	359.48	11524.82	10161.54	-968.94	0.00	0.00	10207.63	TD at 21874.54



TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #2 (Santa Fe Fed Com 603H/OH)
Santa Fe Fed/Zia Fed
Created By: Dustin Ault
Date: 23:33, June 21 2020
Approved: _____
Date: _____



Franklin Mountain Energy

Lea County, NM (NAD83)

Santa Fe Fed/Zia Fed

Santa Fe Fed Com 603H

OH

Plan: Plan #2

Standard Planning Report

21 June, 2020





Total Directional Services Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	Santa Fe Fed/Zia Fed				
Site Position:		Northing:	404,988.50 usft	Latitude:	32.109301
From:	Lat/Long	Easting:	856,530.67 usft	Longitude:	-103.315356
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54

Well	Santa Fe Fed Com 603H					
Well Position	+N/-S	-0.17 usft	Northing:	404,988.33 usft	Latitude:	32.109301
	+E/-W	0.08 usft	Easting:	856,530.75 usft	Longitude:	-103.315356
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,079.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/10/2020	6.57	59.88	47,586.40044035

Design	Plan #2			
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	354.55

Plan Survey Tool Program	Date	6/21/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,874.54 Plan #2 (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	
3,200.00	0.00	0.01	3,200.00	0.00	0.00	0.00	0.00	0.00	0.01	
3,733.40	8.00	257.13	3,731.67	-8.29	-36.25	1.50	1.50	0.00	257.13	
9,647.64	8.00	257.13	9,588.33	-191.71	-838.75	0.00	0.00	0.00	0.00	
10,181.03	0.00	0.01	10,120.00	-200.00	-875.00	1.50	-1.50	0.00	180.00	
11,184.03	0.00	0.01	11,123.00	-200.00	-875.00	0.00	0.00	0.00	0.01	
12,094.06	91.00	359.48	11,695.87	382.95	-880.29	10.00	10.00	-0.06	359.48	
21,874.54	91.00	359.48	11,524.82	10,161.54	-968.94	0.00	0.00	0.00	0.00	PBHL (Santa Fe Fed



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 (Santa Fe Fed Com 603H)									
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
Start Build 1.50									
3,300.00	1.50	257.13	3,299.99	-0.29	-1.28	-0.17	1.50	1.50	0.00
3,400.00	3.00	257.13	3,399.91	-1.17	-5.10	-0.68	1.50	1.50	0.00
3,500.00	4.50	257.13	3,499.69	-2.62	-11.48	-1.52	1.50	1.50	0.00
3,600.00	6.00	257.13	3,599.27	-4.66	-20.40	-2.71	1.50	1.50	0.00
3,700.00	7.50	257.13	3,698.57	-7.28	-31.86	-4.22	1.50	1.50	0.00
3,733.40	8.00	257.13	3,731.67	-8.29	-36.25	-4.81	1.50	1.50	0.00
Start 5914.24 hold at 3733.40 MD									
3,800.00	8.00	257.13	3,797.62	-10.35	-45.28	-6.01	0.00	0.00	0.00
3,900.00	8.00	257.13	3,896.65	-13.45	-58.85	-7.80	0.00	0.00	0.00
4,000.00	8.00	257.13	3,995.67	-16.55	-72.42	-9.60	0.00	0.00	0.00
4,100.00	8.00	257.13	4,094.70	-19.66	-85.99	-11.40	0.00	0.00	0.00
4,200.00	8.00	257.13	4,193.73	-22.76	-99.56	-13.20	0.00	0.00	0.00
4,300.00	8.00	257.13	4,292.75	-25.86	-113.13	-15.00	0.00	0.00	0.00
4,400.00	8.00	257.13	4,391.78	-28.96	-126.70	-16.80	0.00	0.00	0.00
4,500.00	8.00	257.13	4,490.81	-32.06	-140.27	-18.60	0.00	0.00	0.00
4,600.00	8.00	257.13	4,589.83	-35.16	-153.84	-20.40	0.00	0.00	0.00
4,700.00	8.00	257.13	4,688.86	-38.26	-167.41	-22.20	0.00	0.00	0.00
4,800.00	8.00	257.13	4,787.89	-41.37	-180.98	-24.00	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
4,900.00	8.00	257.13	4,886.91	-44.47	-194.54	-25.80	0.00	0.00	0.00
5,000.00	8.00	257.13	4,985.94	-47.57	-208.11	-27.60	0.00	0.00	0.00
5,100.00	8.00	257.13	5,084.97	-50.67	-221.68	-29.40	0.00	0.00	0.00
5,200.00	8.00	257.13	5,183.99	-53.77	-235.25	-31.20	0.00	0.00	0.00
5,300.00	8.00	257.13	5,283.02	-56.87	-248.82	-33.00	0.00	0.00	0.00
5,400.00	8.00	257.13	5,382.05	-59.97	-262.39	-34.80	0.00	0.00	0.00
5,500.00	8.00	257.13	5,481.07	-63.08	-275.96	-36.60	0.00	0.00	0.00
5,600.00	8.00	257.13	5,580.10	-66.18	-289.53	-38.40	0.00	0.00	0.00
5,700.00	8.00	257.13	5,679.12	-69.28	-303.10	-40.20	0.00	0.00	0.00
5,800.00	8.00	257.13	5,778.15	-72.38	-316.67	-41.99	0.00	0.00	0.00
5,900.00	8.00	257.13	5,877.18	-75.48	-330.23	-43.79	0.00	0.00	0.00
6,000.00	8.00	257.13	5,976.20	-78.58	-343.80	-45.59	0.00	0.00	0.00
6,100.00	8.00	257.13	6,075.23	-81.69	-357.37	-47.39	0.00	0.00	0.00
6,200.00	8.00	257.13	6,174.26	-84.79	-370.94	-49.19	0.00	0.00	0.00
6,300.00	8.00	257.13	6,273.28	-87.89	-384.51	-50.99	0.00	0.00	0.00
6,400.00	8.00	257.13	6,372.31	-90.99	-398.08	-52.79	0.00	0.00	0.00
6,500.00	8.00	257.13	6,471.34	-94.09	-411.65	-54.59	0.00	0.00	0.00
6,600.00	8.00	257.13	6,570.36	-97.19	-425.22	-56.39	0.00	0.00	0.00
6,700.00	8.00	257.13	6,669.39	-100.29	-438.79	-58.19	0.00	0.00	0.00
6,800.00	8.00	257.13	6,768.42	-103.40	-452.36	-59.99	0.00	0.00	0.00
6,900.00	8.00	257.13	6,867.44	-106.50	-465.92	-61.79	0.00	0.00	0.00
7,000.00	8.00	257.13	6,966.47	-109.60	-479.49	-63.59	0.00	0.00	0.00
7,100.00	8.00	257.13	7,065.50	-112.70	-493.06	-65.39	0.00	0.00	0.00
7,200.00	8.00	257.13	7,164.52	-115.80	-506.63	-67.19	0.00	0.00	0.00
7,300.00	8.00	257.13	7,263.55	-118.90	-520.20	-68.99	0.00	0.00	0.00
7,400.00	8.00	257.13	7,362.58	-122.00	-533.77	-70.79	0.00	0.00	0.00
7,500.00	8.00	257.13	7,461.60	-125.11	-547.34	-72.59	0.00	0.00	0.00
7,600.00	8.00	257.13	7,560.63	-128.21	-560.91	-74.39	0.00	0.00	0.00
7,700.00	8.00	257.13	7,659.66	-131.31	-574.48	-76.18	0.00	0.00	0.00
7,800.00	8.00	257.13	7,758.68	-134.41	-588.05	-77.98	0.00	0.00	0.00
7,900.00	8.00	257.13	7,857.71	-137.51	-601.62	-79.78	0.00	0.00	0.00
8,000.00	8.00	257.13	7,956.74	-140.61	-615.18	-81.58	0.00	0.00	0.00
8,100.00	8.00	257.13	8,055.76	-143.72	-628.75	-83.38	0.00	0.00	0.00
8,200.00	8.00	257.13	8,154.79	-146.82	-642.32	-85.18	0.00	0.00	0.00
8,300.00	8.00	257.13	8,253.82	-149.92	-655.89	-86.98	0.00	0.00	0.00
8,400.00	8.00	257.13	8,352.84	-153.02	-669.46	-88.78	0.00	0.00	0.00
8,500.00	8.00	257.13	8,451.87	-156.12	-683.03	-90.58	0.00	0.00	0.00
8,600.00	8.00	257.13	8,550.90	-159.22	-696.60	-92.38	0.00	0.00	0.00
8,700.00	8.00	257.13	8,649.92	-162.32	-710.17	-94.18	0.00	0.00	0.00
8,800.00	8.00	257.13	8,748.95	-165.43	-723.74	-95.98	0.00	0.00	0.00
8,900.00	8.00	257.13	8,847.98	-168.53	-737.31	-97.78	0.00	0.00	0.00
9,000.00	8.00	257.13	8,947.00	-171.63	-750.87	-99.58	0.00	0.00	0.00
9,100.00	8.00	257.13	9,046.03	-174.73	-764.44	-101.38	0.00	0.00	0.00
9,200.00	8.00	257.13	9,145.05	-177.83	-778.01	-103.18	0.00	0.00	0.00
9,300.00	8.00	257.13	9,244.08	-180.93	-791.58	-104.98	0.00	0.00	0.00
9,400.00	8.00	257.13	9,343.11	-184.03	-805.15	-106.78	0.00	0.00	0.00
9,500.00	8.00	257.13	9,442.13	-187.14	-818.72	-108.58	0.00	0.00	0.00
9,600.00	8.00	257.13	9,541.16	-190.24	-832.29	-110.38	0.00	0.00	0.00
9,647.64	8.00	257.13	9,588.33	-191.71	-838.75	-111.23	0.00	0.00	0.00
Start Drop -1.50									
9,700.00	7.22	257.13	9,640.24	-193.26	-845.51	-112.13	1.50	-1.50	0.00
9,800.00	5.72	257.13	9,739.60	-195.77	-856.49	-113.58	1.50	-1.50	0.00
9,900.00	4.22	257.13	9,839.22	-197.70	-864.93	-114.70	1.50	-1.50	0.00
10,000.00	2.72	257.13	9,939.03	-199.04	-870.82	-115.48	1.50	-1.50	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	1.22	257.13	10,038.97	-199.81	-874.16	-115.93	1.50	-1.50	0.00
10,181.03	0.00	0.01	10,120.00	-200.00	-875.00	-116.04	1.50	-1.50	0.00
Start 1003.00 hold at 10181.03 MD									
10,200.00	0.00	0.00	10,138.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,300.00	0.00	0.00	10,238.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,400.00	0.00	0.00	10,338.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,500.00	0.00	0.00	10,438.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,600.00	0.00	0.00	10,538.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,700.00	0.00	0.00	10,638.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,800.00	0.00	0.00	10,738.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
10,900.00	0.00	0.00	10,838.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
11,000.00	0.00	0.00	10,938.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
11,100.00	0.00	0.00	11,038.97	-200.00	-875.00	-116.04	0.00	0.00	0.00
11,184.03	0.00	0.00	11,123.00	-200.00	-875.00	-116.04	0.00	0.00	0.00
Start DLS 10.00 TFO 359.48									
11,200.00	1.60	359.48	11,138.96	-199.78	-875.00	-115.82	10.00	10.00	0.00
11,250.00	6.60	359.48	11,188.82	-196.21	-875.03	-112.26	10.00	10.00	0.00
11,300.00	11.60	359.48	11,238.18	-188.30	-875.11	-104.39	10.00	10.00	0.00
11,350.00	16.60	359.48	11,286.65	-176.13	-875.22	-92.26	10.00	10.00	0.00
11,400.00	21.60	359.48	11,333.89	-159.78	-875.36	-75.97	10.00	10.00	0.00
11,450.00	26.60	359.48	11,379.52	-139.37	-875.55	-55.63	10.00	10.00	0.00
11,500.00	31.60	359.48	11,423.19	-115.07	-875.77	-31.42	10.00	10.00	0.00
11,550.00	36.60	359.48	11,464.58	-87.05	-876.02	-3.50	10.00	10.00	0.00
11,600.00	41.60	359.48	11,503.38	-55.53	-876.31	27.90	10.00	10.00	0.00
11,650.00	46.60	359.48	11,539.27	-20.75	-876.63	62.56	10.00	10.00	0.00
11,700.00	51.60	359.48	11,572.00	17.03	-876.97	100.20	10.00	10.00	0.00
11,750.00	56.60	359.48	11,601.31	57.52	-877.33	140.54	10.00	10.00	0.00
11,800.00	61.60	359.48	11,626.99	100.40	-877.72	183.27	10.00	10.00	0.00
11,850.00	66.60	359.48	11,648.82	145.36	-878.13	228.06	10.00	10.00	0.00
11,900.00	71.60	359.48	11,666.66	192.06	-878.55	274.58	10.00	10.00	0.00
11,950.00	76.60	359.48	11,680.35	240.12	-878.99	322.48	10.00	10.00	0.00
12,000.00	81.60	359.48	11,689.81	289.20	-879.44	371.38	10.00	10.00	0.00
12,050.00	86.60	359.48	11,694.95	338.92	-879.89	420.91	10.00	10.00	0.00
12,094.05	91.00	359.48	11,695.87	382.95	-880.29	464.78	10.00	10.00	0.00
Start 9780.48 hold at 12094.06 MD - LP (Santa Fe Fed Com 603H)									
12,100.00	91.00	359.48	11,695.77	388.90	-880.34	470.71	0.01	0.01	0.00
12,200.00	91.00	359.48	11,694.02	488.88	-881.25	570.32	0.00	0.00	0.00
12,300.00	91.00	359.48	11,692.27	588.86	-882.15	669.94	0.00	0.00	0.00
12,400.00	91.00	359.48	11,690.52	688.84	-883.06	769.55	0.00	0.00	0.00
12,500.00	91.00	359.48	11,688.77	788.82	-883.96	869.17	0.00	0.00	0.00
12,600.00	91.00	359.48	11,687.02	888.80	-884.87	968.78	0.00	0.00	0.00
12,700.00	91.00	359.48	11,685.27	988.78	-885.78	1,068.40	0.00	0.00	0.00
12,800.00	91.00	359.48	11,683.52	1,088.76	-886.68	1,168.01	0.00	0.00	0.00
12,900.00	91.00	359.48	11,681.78	1,188.74	-887.59	1,267.63	0.00	0.00	0.00
13,000.00	91.00	359.48	11,680.03	1,288.72	-888.50	1,367.24	0.00	0.00	0.00
13,100.00	91.00	359.48	11,678.28	1,388.70	-889.40	1,466.86	0.00	0.00	0.00
13,200.00	91.00	359.48	11,676.53	1,488.68	-890.31	1,566.47	0.00	0.00	0.00
13,300.00	91.00	359.48	11,674.78	1,588.66	-891.22	1,666.09	0.00	0.00	0.00
13,400.00	91.00	359.48	11,673.03	1,688.65	-892.12	1,765.70	0.00	0.00	0.00
13,500.00	91.00	359.48	11,671.28	1,788.63	-893.03	1,865.32	0.00	0.00	0.00
13,600.00	91.00	359.48	11,669.53	1,888.61	-893.94	1,964.93	0.00	0.00	0.00
13,700.00	91.00	359.48	11,667.78	1,988.59	-894.84	2,064.55	0.00	0.00	0.00
13,800.00	91.00	359.48	11,666.04	2,088.57	-895.75	2,164.16	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
13,900.00	91.00	359.48	11,664.29	2,188.55	-896.66	2,263.78	0.00	0.00	0.00
14,000.00	91.00	359.48	11,662.54	2,288.53	-897.56	2,363.39	0.00	0.00	0.00
14,100.00	91.00	359.48	11,660.79	2,388.51	-898.47	2,463.01	0.00	0.00	0.00
14,200.00	91.00	359.48	11,659.04	2,488.49	-899.37	2,562.63	0.00	0.00	0.00
14,300.00	91.00	359.48	11,657.29	2,588.47	-900.28	2,662.24	0.00	0.00	0.00
14,400.00	91.00	359.48	11,655.54	2,688.45	-901.19	2,761.86	0.00	0.00	0.00
14,500.00	91.00	359.48	11,653.79	2,788.43	-902.09	2,861.47	0.00	0.00	0.00
14,600.00	91.00	359.48	11,652.04	2,888.41	-903.00	2,961.09	0.00	0.00	0.00
14,700.00	91.00	359.48	11,650.30	2,988.39	-903.91	3,060.70	0.00	0.00	0.00
14,800.00	91.00	359.48	11,648.55	3,088.37	-904.81	3,160.32	0.00	0.00	0.00
14,900.00	91.00	359.48	11,646.80	3,188.35	-905.72	3,259.93	0.00	0.00	0.00
15,000.00	91.00	359.48	11,645.05	3,288.33	-906.63	3,359.55	0.00	0.00	0.00
15,100.00	91.00	359.48	11,643.30	3,388.32	-907.53	3,459.16	0.00	0.00	0.00
15,200.00	91.00	359.48	11,641.55	3,488.30	-908.44	3,558.78	0.00	0.00	0.00
15,300.00	91.00	359.48	11,639.80	3,588.28	-909.35	3,658.39	0.00	0.00	0.00
15,400.00	91.00	359.48	11,638.05	3,688.26	-910.25	3,758.01	0.00	0.00	0.00
15,500.00	91.00	359.48	11,636.30	3,788.24	-911.16	3,857.62	0.00	0.00	0.00
15,600.00	91.00	359.48	11,634.56	3,888.22	-912.06	3,957.24	0.00	0.00	0.00
15,700.00	91.00	359.48	11,632.81	3,988.20	-912.97	4,056.85	0.00	0.00	0.00
15,800.00	91.00	359.48	11,631.06	4,088.18	-913.88	4,156.47	0.00	0.00	0.00
15,900.00	91.00	359.48	11,629.31	4,188.16	-914.78	4,256.08	0.00	0.00	0.00
16,000.00	91.00	359.48	11,627.56	4,288.14	-915.69	4,355.70	0.00	0.00	0.00
16,100.00	91.00	359.48	11,625.81	4,388.12	-916.60	4,455.31	0.00	0.00	0.00
16,200.00	91.00	359.48	11,624.06	4,488.10	-917.50	4,554.93	0.00	0.00	0.00
16,300.00	91.00	359.48	11,622.31	4,588.08	-918.41	4,654.54	0.00	0.00	0.00
16,400.00	91.00	359.48	11,620.56	4,688.06	-919.32	4,754.16	0.00	0.00	0.00
16,500.00	91.00	359.48	11,618.82	4,788.04	-920.22	4,853.77	0.00	0.00	0.00
16,600.00	91.00	359.48	11,617.07	4,888.02	-921.13	4,953.39	0.00	0.00	0.00
16,700.00	91.00	359.48	11,615.32	4,988.01	-922.04	5,053.00	0.00	0.00	0.00
16,800.00	91.00	359.48	11,613.57	5,087.99	-922.94	5,152.62	0.00	0.00	0.00
16,900.00	91.00	359.48	11,611.82	5,187.97	-923.85	5,252.24	0.00	0.00	0.00
17,000.00	91.00	359.48	11,610.07	5,287.95	-924.75	5,351.85	0.00	0.00	0.00
17,100.00	91.00	359.48	11,608.32	5,387.93	-925.66	5,451.47	0.00	0.00	0.00
17,200.00	91.00	359.48	11,606.57	5,487.91	-926.57	5,551.08	0.00	0.00	0.00
17,300.00	91.00	359.48	11,604.82	5,587.89	-927.47	5,650.70	0.00	0.00	0.00
17,400.00	91.00	359.48	11,603.08	5,687.87	-928.38	5,750.31	0.00	0.00	0.00
17,500.00	91.00	359.48	11,601.33	5,787.85	-929.29	5,849.93	0.00	0.00	0.00
17,600.00	91.00	359.48	11,599.58	5,887.83	-930.19	5,949.54	0.00	0.00	0.00
17,700.00	91.00	359.48	11,597.83	5,987.81	-931.10	6,049.16	0.00	0.00	0.00
17,800.00	91.00	359.48	11,596.08	6,087.79	-932.01	6,148.77	0.00	0.00	0.00
17,900.00	91.00	359.48	11,594.33	6,187.77	-932.91	6,248.39	0.00	0.00	0.00
18,000.00	91.00	359.48	11,592.58	6,287.75	-933.82	6,348.00	0.00	0.00	0.00
18,100.00	91.00	359.48	11,590.83	6,387.73	-934.73	6,447.62	0.00	0.00	0.00
18,200.00	91.00	359.48	11,589.08	6,487.71	-935.63	6,547.23	0.00	0.00	0.00
18,300.00	91.00	359.48	11,587.34	6,587.69	-936.54	6,646.85	0.00	0.00	0.00
18,400.00	91.00	359.48	11,585.59	6,687.68	-937.45	6,746.46	0.00	0.00	0.00
18,500.00	91.00	359.48	11,583.84	6,787.66	-938.35	6,846.08	0.00	0.00	0.00
18,600.00	91.00	359.48	11,582.09	6,887.64	-939.26	6,945.69	0.00	0.00	0.00
18,700.00	91.00	359.48	11,580.34	6,987.62	-940.16	7,045.31	0.00	0.00	0.00
18,800.00	91.00	359.48	11,578.59	7,087.60	-941.07	7,144.92	0.00	0.00	0.00
18,900.00	91.00	359.48	11,576.84	7,187.58	-941.98	7,244.54	0.00	0.00	0.00
19,000.00	91.00	359.48	11,575.09	7,287.56	-942.88	7,344.15	0.00	0.00	0.00
19,100.00	91.00	359.48	11,573.34	7,387.54	-943.79	7,443.77	0.00	0.00	0.00
19,200.00	91.00	359.48	11,571.60	7,487.52	-944.70	7,543.38	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)	
19,300.00	91.00	359.48	11,569.85	7,587.50	-945.60	7,643.00	0.00	0.00	0.00	
19,400.00	91.00	359.48	11,568.10	7,687.48	-946.51	7,742.61	0.00	0.00	0.00	
19,500.00	91.00	359.48	11,566.35	7,787.46	-947.42	7,842.23	0.00	0.00	0.00	
19,600.00	91.00	359.48	11,564.60	7,887.44	-948.32	7,941.85	0.00	0.00	0.00	
19,700.00	91.00	359.48	11,562.85	7,987.42	-949.23	8,041.46	0.00	0.00	0.00	
19,800.00	91.00	359.48	11,561.10	8,087.40	-950.14	8,141.08	0.00	0.00	0.00	
19,900.00	91.00	359.48	11,559.35	8,187.38	-951.04	8,240.69	0.00	0.00	0.00	
20,000.00	91.00	359.48	11,557.60	8,287.36	-951.95	8,340.31	0.00	0.00	0.00	
20,100.00	91.00	359.48	11,555.86	8,387.35	-952.85	8,439.92	0.00	0.00	0.00	
20,200.00	91.00	359.48	11,554.11	8,487.33	-953.76	8,539.54	0.00	0.00	0.00	
20,300.00	91.00	359.48	11,552.36	8,587.31	-954.67	8,639.15	0.00	0.00	0.00	
20,400.00	91.00	359.48	11,550.61	8,687.29	-955.57	8,738.77	0.00	0.00	0.00	
20,500.00	91.00	359.48	11,548.86	8,787.27	-956.48	8,838.38	0.00	0.00	0.00	
20,600.00	91.00	359.48	11,547.11	8,887.25	-957.39	8,938.00	0.00	0.00	0.00	
20,700.00	91.00	359.48	11,545.36	8,987.23	-958.29	9,037.61	0.00	0.00	0.00	
20,800.00	91.00	359.48	11,543.61	9,087.21	-959.20	9,137.23	0.00	0.00	0.00	
20,900.00	91.00	359.48	11,541.86	9,187.19	-960.11	9,236.84	0.00	0.00	0.00	
21,000.00	91.00	359.48	11,540.12	9,287.17	-961.01	9,336.46	0.00	0.00	0.00	
21,100.00	91.00	359.48	11,538.37	9,387.15	-961.92	9,436.07	0.00	0.00	0.00	
21,200.00	91.00	359.48	11,536.62	9,487.13	-962.83	9,535.69	0.00	0.00	0.00	
21,300.00	91.00	359.48	11,534.87	9,587.11	-963.73	9,635.30	0.00	0.00	0.00	
21,400.00	91.00	359.48	11,533.12	9,687.09	-964.64	9,734.92	0.00	0.00	0.00	
21,500.00	91.00	359.48	11,531.37	9,787.07	-965.55	9,834.53	0.00	0.00	0.00	
21,600.00	91.00	359.48	11,529.62	9,887.05	-966.45	9,934.15	0.00	0.00	0.00	
21,700.00	91.00	359.48	11,527.87	9,987.04	-967.36	10,033.76	0.00	0.00	0.00	
21,800.00	91.00	359.48	11,526.12	10,087.02	-968.26	10,133.38	0.00	0.00	0.00	
21,874.54	91.00	359.48	11,524.82	10,161.54	-968.94	10,207.63	0.00	0.00	0.00	
TD at 21874.54 - PBHL (Santa Fe Fed Com 603H)										

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Santa Fe Fed Corr - plan hits target center - Point	0.00	0.01	0.00	0.00	0.00	404,988.33	856,530.75	32.109301	-103.315356
PBHL (Santa Fe Fed Co - plan hits target center - Point	0.00	0.00	11,524.82	10,161.54	-968.94	415,149.87	855,561.81	32.137255	-103.318176
LP (Santa Fe Fed Com f - plan hits target center - Point	0.00	0.01	11,695.87	382.95	-880.29	405,371.28	855,650.46	32.110376	-103.318187



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Company:	Franklin Mountain Energy	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Santa Fe Fed Com 603H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,200.00	3,200.00	0.00	0.00	Start Build 1.50
3,733.40	3,731.67	-8.29	-36.25	Start 5914.24 hold at 3733.40 MD
9,647.64	9,588.33	-191.71	-838.75	Start Drop -1.50
10,181.03	10,120.00	-200.00	-875.00	Start 1003.00 hold at 10181.03 MD
11,184.03	11,123.00	-200.00	-875.00	Start DLS 10.00 TFO 359.48
12,094.06	11,695.87	382.95	-880.29	Start 9780.48 hold at 12094.06 MD
21,874.54	11,524.82	10,161.54	-968.94	TD at 21874.54



Franklin Mountain Energy

Lea County, NM (NAD83)

Santa Fe Fed/Zia Fed

Santa Fe Fed Com 603H

OH

Plan #2

Anticollision Report

21 June, 2020





Total Directional Services

Anticollision Report



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum ellipse separation of 1,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Combined Separation
Casing Method:	Not applied

Survey Tool Program		Date	6/21/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	21,874.54	Plan #2 (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						
1912 Fed Com						
1912 Fed Com 601H - OH - Plan #2	21,860.26	21,929.37	2,986.92	2,742.20	12.205	CC
1912 Fed Com 601H - OH - Plan #2	21,874.54	21,929.37	2,986.96	2,742.03	12.195	ES, SF
1912 Fed Com 701H - OH - Plan #2	11,184.03	11,178.37	3,240.28	3,184.50	58.095	CC
1912 Fed Com 701H - OH - Plan #2	21,874.54	22,238.31	3,267.47	3,024.83	13.466	ES, SF
1912 Fed Com 702H - OH - Plan #2	11,184.03	11,180.05	2,415.36	2,359.54	43.271	CC
1912 Fed Com 702H - OH - Plan #2	21,874.54	22,099.37	2,428.87	2,185.61	9.985	ES, SF
Santa Fe Fed/Zia Fed						
Santa Fe Fed Com 705H - OH - Plan #2	3,200.00	3,199.70	34.99	19.10	2.202	CC, ES, SF
Zia Fed Com 604H - OH - Plan #2	3,200.00	3,199.00	69.98	54.09	4.404	CC, ES
Zia Fed Com 604H - OH - Plan #2	21,874.54	21,807.78	1,039.12	793.91	4.238	SF
Zia Fed Com 706H - OH - Plan #2	3,200.00	3,198.70	104.98	89.09	6.607	CC, ES
Zia Fed Com 706H - OH - Plan #2	21,874.54	21,969.49	1,344.80	1,100.18	5.498	SF
Trinity Fed/Santa Fe Fed						
Santa Fe Fed Com 704H - OH - Plan #1	11,184.03	11,171.03	569.02	512.82	10.125	CC
Santa Fe Fed Com 704H - OH - Plan #1	21,874.54	22,023.56	585.62	352.51	2.512	ES, SF
Trinity Fed Com 602H - OH - Plan #1	21,866.13	21,898.12	1,786.43	1,543.40	7.351	CC
Trinity Fed Com 602H - OH - Plan #1	21,874.54	21,898.12	1,786.45	1,543.27	7.346	ES, SF
Trinity Fed Com 703H - OH - Plan #1	11,184.03	11,154.12	1,489.86	1,433.93	26.637	CC
Trinity Fed Com 703H - OH - Plan #1	21,874.54	22,158.34	1,518.04	1,279.83	6.373	ES, SF

Offset Design		1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2											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	
0.00	0.00	31.50	31.50	0.00	0.04	-90.01	-0.64	-3,737.09	3,737.09					
100.00	100.00	131.50	131.50	0.13	0.24	-90.01	-0.64	-3,737.09	3,737.09	3,736.82	0.27	N/A		
200.00	200.00	231.50	231.50	0.48	0.60	-90.01	-0.64	-3,737.09	3,737.09	3,736.32	0.77	4,863.500		
300.00	300.00	331.50	331.50	0.84	0.96	-90.01	-0.64	-3,737.09	3,737.09	3,735.82	1.27	2,934.052		
400.00	400.00	431.50	431.50	1.20	1.31	-90.01	-0.64	-3,737.09	3,737.09	3,735.31	1.78	2,099.562		
500.00	500.00	531.50	531.50	1.56	1.67	-90.01	-0.64	-3,737.09	3,737.09	3,734.80	2.29	1,634.418		
600.00	600.00	631.50	631.50	1.92	2.03	-90.01	-0.64	-3,737.09	3,737.09	3,734.30	2.79	1,337.925		
700.00	700.00	731.50	731.50	2.28	2.39	-90.01	-0.64	-3,737.09	3,737.09	3,733.79	3.30	1,132.459		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													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		
800.00	800.00	831.50	831.50	2.63	2.75	-90.01	-0.64	-3,737.09	3,737.09	3,733.28	3.81	981.687		
900.00	900.00	931.50	931.50	2.99	3.11	-90.01	-0.64	-3,737.09	3,737.09	3,732.78	4.31	866.338		
1,000.00	1,000.00	1,031.50	1,031.50	3.35	3.46	-90.01	-0.64	-3,737.09	3,737.09	3,732.27	4.82	775.243		
1,100.00	1,100.00	1,131.50	1,131.50	3.71	3.82	-90.01	-0.64	-3,737.09	3,737.09	3,731.76	5.33	701.481		
1,200.00	1,200.00	1,231.50	1,231.50	4.07	4.18	-90.01	-0.64	-3,737.09	3,737.09	3,731.26	5.83	640.534		
1,300.00	1,300.00	1,331.50	1,331.50	4.43	4.54	-90.01	-0.64	-3,737.09	3,737.09	3,730.75	6.34	589.331		
1,400.00	1,400.00	1,431.50	1,431.50	4.79	4.90	-90.01	-0.64	-3,737.09	3,737.09	3,730.24	6.85	545.707		
1,500.00	1,500.00	1,531.50	1,531.50	5.14	5.26	-90.01	-0.64	-3,737.09	3,737.09	3,729.74	7.36	508.096		
1,600.00	1,600.00	1,631.50	1,631.50	5.50	5.62	-90.01	-0.64	-3,737.09	3,737.09	3,729.23	7.86	475.335		
1,700.00	1,700.00	1,731.50	1,731.50	5.86	5.97	-90.01	-0.64	-3,737.09	3,737.09	3,728.72	8.37	446.543		
1,800.00	1,800.00	1,831.50	1,831.50	6.22	6.33	-90.01	-0.64	-3,737.09	3,737.09	3,728.21	8.88	421.039		
1,900.00	1,900.00	1,931.50	1,931.50	6.58	6.69	-90.01	-0.64	-3,737.09	3,737.09	3,727.71	9.38	398.291		
2,000.00	2,000.00	2,031.50	2,031.50	6.94	7.05	-90.01	-0.64	-3,737.09	3,737.09	3,727.20	9.89	377.875		
2,100.00	2,100.00	2,131.50	2,131.50	7.29	7.41	-90.01	-0.64	-3,737.09	3,737.09	3,726.69	10.40	359.450		
2,200.00	2,200.00	2,231.50	2,231.50	7.65	7.77	-90.01	-0.64	-3,737.09	3,737.09	3,726.19	10.90	342.738		
2,300.00	2,300.00	2,331.50	2,331.50	8.01	8.12	-90.01	-0.64	-3,737.09	3,737.09	3,725.68	11.41	327.511		
2,400.00	2,400.00	2,431.50	2,431.50	8.37	8.48	-90.01	-0.64	-3,737.09	3,737.09	3,725.17	11.92	313.580		
2,500.00	2,500.00	2,531.50	2,531.50	8.73	8.84	-90.01	-0.64	-3,737.09	3,737.09	3,724.67	12.42	300.785		
2,600.00	2,600.00	2,631.50	2,631.50	9.09	9.20	-90.01	-0.64	-3,737.09	3,737.09	3,724.16	12.93	288.993		
2,700.00	2,700.00	2,731.50	2,731.50	9.45	9.56	-90.01	-0.64	-3,737.09	3,737.09	3,723.65	13.44	278.091		
2,800.00	2,800.00	2,831.50	2,831.50	9.80	9.92	-90.01	-0.64	-3,737.09	3,737.09	3,723.14	13.95	267.982		
2,900.00	2,900.00	2,931.50	2,931.50	10.16	10.28	-90.01	-0.64	-3,737.09	3,737.09	3,722.64	14.45	258.582		
3,000.00	3,000.00	3,031.50	3,031.50	10.52	10.63	-90.01	-0.64	-3,737.09	3,737.09	3,722.13	14.96	249.819		
3,100.00	3,100.00	3,131.50	3,131.50	10.88	10.99	-90.01	-0.64	-3,737.09	3,737.09	3,721.62	15.47	241.630		
3,200.00	3,200.00	3,231.50	3,231.50	11.24	11.35	-90.01	-0.64	-3,737.09	3,737.09	3,721.12	15.97	233.962		
3,300.00	3,299.99	3,331.49	3,331.49	11.59	11.71	12.87	-0.64	-3,737.09	3,735.81	3,719.34	16.47	226.796		
3,400.00	3,399.91	3,431.41	3,431.41	11.92	12.07	12.90	-0.64	-3,737.09	3,731.99	3,715.02	16.96	219.998		
3,500.00	3,499.69	3,521.28	3,521.28	12.26	12.39	12.94	-0.69	-3,737.12	3,725.65	3,708.23	17.43	213.779		
3,600.00	3,599.27	3,600.00	3,599.99	12.61	12.65	12.98	-1.79	-3,737.72	3,717.45	3,699.59	17.86	208.190		
3,700.00	3,698.57	3,657.23	3,657.19	12.96	12.84	13.01	-3.48	-3,738.64	3,707.50	3,689.27	18.22	203.430		
3,733.40	3,731.67	3,679.91	3,679.84	13.07	12.91	13.02	-4.36	-3,739.12	3,703.81	3,685.45	18.36	201.769		
3,800.00	3,797.62	3,725.15	3,725.02	13.31	13.06	13.01	-6.47	-3,740.26	3,696.45	3,677.83	18.62	198.532		
3,900.00	3,896.65	3,800.00	3,799.69	13.66	13.31	12.97	-10.98	-3,742.72	3,686.11	3,667.08	19.03	193.698		
4,000.00	3,995.67	3,873.91	3,873.33	14.02	13.55	12.92	-16.51	-3,745.74	3,676.53	3,657.09	19.44	189.112		
4,100.00	4,094.70	3,973.36	3,972.40	14.39	13.88	12.85	-24.13	-3,749.88	3,667.12	3,647.21	19.92	184.123		
4,200.00	4,193.73	4,072.81	4,071.48	14.75	14.21	12.78	-31.75	-3,754.03	3,657.72	3,637.32	20.40	179.343		
4,300.00	4,292.75	4,172.27	4,170.55	15.12	14.55	12.71	-39.37	-3,758.18	3,648.32	3,627.44	20.88	174.760		
4,400.00	4,391.78	4,271.72	4,269.62	15.50	14.88	12.64	-46.98	-3,762.33	3,638.92	3,617.56	21.36	170.364		
4,500.00	4,490.81	4,371.17	4,368.70	15.87	15.22	12.56	-54.60	-3,766.48	3,629.54	3,607.69	21.85	166.146		
4,600.00	4,589.83	4,470.62	4,467.77	16.25	15.56	12.49	-62.22	-3,770.63	3,620.15	3,597.82	22.33	162.097		
4,700.00	4,688.86	4,570.08	4,566.85	16.63	15.91	12.42	-69.84	-3,774.78	3,610.78	3,587.96	22.82	158.207		
4,800.00	4,787.89	4,669.53	4,665.92	17.01	16.25	12.34	-77.46	-3,778.93	3,601.41	3,578.09	23.31	154.468		
4,900.00	4,886.91	4,768.98	4,764.99	17.39	16.60	12.27	-85.08	-3,783.08	3,592.04	3,568.24	23.81	150.874		
5,000.00	4,985.94	4,868.44	4,864.07	17.78	16.95	12.20	-92.69	-3,787.23	3,582.69	3,558.38	24.30	147.415		
5,100.00	5,084.97	4,967.89	4,963.14	18.17	17.30	12.12	-100.31	-3,791.38	3,573.33	3,548.53	24.80	144.087		
5,200.00	5,183.99	5,067.34	5,062.22	18.56	17.65	12.05	-107.93	-3,795.53	3,563.99	3,538.69	25.30	140.881		
5,300.00	5,283.02	5,166.79	5,161.29	18.95	18.00	11.97	-115.55	-3,799.68	3,554.65	3,528.85	25.80	137.792		
5,400.00	5,382.05	5,266.25	5,260.36	19.34	18.36	11.89	-123.17	-3,803.83	3,545.31	3,519.02	26.30	134.814		
5,500.00	5,481.07	5,365.70	5,359.44	19.73	18.71	11.82	-130.78	-3,807.98	3,535.99	3,509.19	26.80	131.942		
5,600.00	5,580.10	5,465.15	5,458.51	20.12	19.07	11.74	-138.40	-3,812.13	3,526.66	3,499.36	27.30	129.170		
5,700.00	5,679.12	5,564.61	5,557.58	20.52	19.43	11.66	-146.02	-3,816.28	3,517.35	3,489.54	27.81	126.494		
5,800.00	5,778.15	5,664.06	5,656.66	20.92	19.78	11.59	-153.64	-3,820.43	3,508.04	3,479.73	28.31	123.909		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													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	
5,900.00	5,877.18	5,763.51	5,755.73	21.31	20.14	11.51	-161.26	-3,824.57	3,498.74	3,469.92	28.82	121.412		
6,000.00	5,976.20	5,862.96	5,854.81	21.71	20.50	11.43	-168.87	-3,828.72	3,489.44	3,460.12	29.32	118.997		
6,100.00	6,075.23	5,962.42	5,953.88	22.11	20.87	11.35	-176.49	-3,832.87	3,480.15	3,450.32	29.83	116.661		
6,200.00	6,174.26	6,061.87	6,052.95	22.51	21.23	11.27	-184.11	-3,837.02	3,470.87	3,440.53	30.34	114.400		
6,300.00	6,273.28	6,161.32	6,152.03	22.91	21.59	11.19	-191.73	-3,841.17	3,461.59	3,430.74	30.85	112.211		
6,400.00	6,372.31	6,260.78	6,251.10	23.32	21.95	11.11	-199.35	-3,845.32	3,452.32	3,420.97	31.36	110.092		
6,500.00	6,471.34	6,360.23	6,350.17	23.72	22.32	11.03	-206.97	-3,849.47	3,443.06	3,411.19	31.87	108.038		
6,600.00	6,570.36	6,459.68	6,449.25	24.12	22.68	10.95	-214.58	-3,853.62	3,433.81	3,401.43	32.38	106.047		
6,700.00	6,669.39	6,559.13	6,548.32	24.53	23.05	10.87	-222.20	-3,857.77	3,424.56	3,391.66	32.89	104.116		
6,800.00	6,768.42	6,735.24	6,724.02	24.93	23.69	10.78	-232.47	-3,863.36	3,414.29	3,380.71	33.59	101.653		
6,900.00	6,867.44	6,917.69	6,906.42	25.34	24.33	10.81	-235.61	-3,865.07	3,401.61	3,367.33	34.27	99.249		
7,000.00	6,966.47	7,009.24	6,997.97	25.74	24.64	10.85	-235.64	-3,865.09	3,387.94	3,353.19	34.76	97.478		
7,100.00	7,065.50	7,108.27	7,097.00	26.15	24.98	10.89	-235.64	-3,865.09	3,374.27	3,339.01	35.25	95.711		
7,200.00	7,164.52	7,207.29	7,196.02	26.55	25.32	10.94	-235.64	-3,865.09	3,360.60	3,324.84	35.75	93.992		
7,300.00	7,263.55	7,306.32	7,295.05	26.96	25.66	10.98	-235.64	-3,865.09	3,346.93	3,310.67	36.25	92.319		
7,400.00	7,362.58	7,405.35	7,394.08	27.37	26.01	11.03	-235.64	-3,865.09	3,333.26	3,296.50	36.75	90.691		
7,500.00	7,461.60	7,504.37	7,493.10	27.78	26.35	11.07	-235.64	-3,865.09	3,319.59	3,282.34	37.25	89.105		
7,600.00	7,560.63	7,603.40	7,592.13	28.19	26.69	11.12	-235.64	-3,865.09	3,305.93	3,268.17	37.76	87.560		
7,700.00	7,659.66	7,702.42	7,691.16	28.60	27.03	11.17	-235.64	-3,865.09	3,292.27	3,254.01	38.26	86.055		
7,800.00	7,758.68	7,801.45	7,790.18	29.01	27.38	11.21	-235.64	-3,865.09	3,278.61	3,239.85	38.76	84.588		
7,900.00	7,857.71	7,900.48	7,889.21	29.42	27.72	11.26	-235.64	-3,865.09	3,264.95	3,225.69	39.26	83.158		
8,000.00	7,956.74	7,999.50	7,988.24	29.83	28.07	11.31	-235.64	-3,865.09	3,251.29	3,211.53	39.76	81.763		
8,100.00	8,055.76	8,098.53	8,087.26	30.24	28.41	11.36	-235.64	-3,865.09	3,237.64	3,197.37	40.27	80.403		
8,200.00	8,154.79	8,197.56	8,186.29	30.65	28.75	11.40	-235.64	-3,865.09	3,223.99	3,183.22	40.77	79.075		
8,300.00	8,253.82	8,296.58	8,285.32	31.06	29.10	11.45	-235.64	-3,865.09	3,210.34	3,169.07	41.28	77.779		
8,400.00	8,352.84	8,395.61	8,384.34	31.47	29.44	11.50	-235.64	-3,865.09	3,196.70	3,154.92	41.78	76.514		
8,500.00	8,451.87	8,494.64	8,483.37	31.88	29.79	11.55	-235.64	-3,865.09	3,183.05	3,140.77	42.28	75.279		
8,600.00	8,550.90	8,593.66	8,582.40	32.30	30.13	11.60	-235.64	-3,865.09	3,169.41	3,126.62	42.79	74.072		
8,700.00	8,649.92	8,692.69	8,681.42	32.71	30.48	11.65	-235.64	-3,865.09	3,155.77	3,112.48	43.29	72.893		
8,800.00	8,748.95	8,791.72	8,780.45	33.12	30.83	11.71	-235.64	-3,865.09	3,142.14	3,098.34	43.80	71.740		
8,900.00	8,847.98	8,890.74	8,879.48	33.54	31.17	11.76	-235.64	-3,865.09	3,128.50	3,084.20	44.30	70.614		
9,000.00	8,947.00	8,989.77	8,978.50	33.95	31.52	11.81	-235.64	-3,865.09	3,114.87	3,070.06	44.81	69.512		
9,100.00	9,046.03	9,088.80	9,077.53	34.36	31.86	11.86	-235.64	-3,865.09	3,101.24	3,055.93	45.32	68.435		
9,200.00	9,145.05	9,187.82	9,176.55	34.78	32.21	11.91	-235.64	-3,865.09	3,087.62	3,041.80	45.82	67.381		
9,300.00	9,244.08	9,286.85	9,275.58	35.19	32.56	11.97	-235.64	-3,865.09	3,074.00	3,027.67	46.33	66.350		
9,400.00	9,343.11	9,385.88	9,374.61	35.61	32.91	12.02	-235.64	-3,865.09	3,060.37	3,013.54	46.84	65.341		
9,500.00	9,442.13	9,484.90	9,473.63	36.02	33.25	12.08	-235.64	-3,865.09	3,046.76	2,999.41	47.34	64.353		
9,600.00	9,541.16	9,583.93	9,572.66	36.44	33.60	12.13	-235.64	-3,865.09	3,033.14	2,985.29	47.85	63.386		
9,647.64	9,588.33	9,631.10	9,619.83	36.63	33.77	12.16	-235.64	-3,865.09	3,026.66	2,978.56	48.09	62.933		
9,700.00	9,640.24	9,683.00	9,671.74	36.85	33.95	12.16	-235.64	-3,865.09	3,019.88	2,971.52	48.36	62.447		
9,800.00	9,739.60	9,782.37	9,771.10	37.25	34.30	12.17	-235.64	-3,865.09	3,008.87	2,960.00	48.87	61.574		
9,900.00	9,839.22	9,881.99	9,870.72	37.63	34.65	12.18	-235.64	-3,865.09	3,000.40	2,951.03	49.37	60.774		
10,000.00	9,939.03	9,981.80	9,970.53	38.00	35.00	12.19	-235.64	-3,865.09	2,994.50	2,944.62	49.87	60.044		
10,100.00	10,038.97	10,081.74	10,070.47	38.35	35.35	12.19	-235.64	-3,865.09	2,991.14	2,940.77	50.37	59.382		
10,181.03	10,120.00	10,162.77	10,151.50	38.61	35.63	-90.68	-235.64	-3,865.09	2,990.30	2,939.53	50.77	58.898		
10,200.00	10,138.97	10,181.73	10,170.47	38.68	35.70	-90.68	-235.64	-3,865.09	2,990.30	2,939.44	50.86	58.791		
10,300.00	10,238.97	10,281.73	10,270.47	39.00	36.05	-90.68	-235.64	-3,865.09	2,990.30	2,938.95	51.35	58.231		
10,400.00	10,338.97	10,381.73	10,370.47	39.32	36.40	-90.68	-235.64	-3,865.09	2,990.30	2,938.46	51.84	57.681		
10,500.00	10,438.97	10,481.73	10,470.47	39.65	36.76	-90.68	-235.64	-3,865.09	2,990.30	2,937.97	52.33	57.142		
10,600.00	10,538.97	10,581.73	10,570.47	39.97	37.11	-90.68	-235.64	-3,865.09	2,990.30	2,937.48	52.82	56.612		
10,700.00	10,638.97	10,681.73	10,670.47	40.30	37.46	-90.68	-235.64	-3,865.09	2,990.30	2,936.99	53.31	56.091		
10,800.00	10,738.97	10,781.73	10,770.47	40.62	37.81	-90.68	-235.64	-3,865.09	2,990.30	2,936.50	53.80	55.580		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													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		
10,900.00	10,838.97	10,881.73	10,870.47	40.95	38.17	-90.68	-235.64	-3,865.09	2,990.30	2,936.01	54.29	55.077		
11,000.00	10,938.97	10,981.73	10,970.47	41.28	38.52	-90.68	-235.64	-3,865.09	2,990.30	2,935.52	54.78	54.584		
11,100.00	11,038.97	11,081.73	11,070.47	41.60	38.87	-90.68	-235.64	-3,865.09	2,990.30	2,935.03	55.28	54.098		
11,184.03	11,123.00	11,165.77	11,154.50	41.88	39.17	-90.68	-235.64	-3,865.09	2,990.30	2,934.61	55.69	53.697		
11,200.00	11,138.96	11,181.73	11,170.46	41.93	39.22	-90.17	-235.64	-3,865.09	2,990.30	2,934.54	55.77	53.622		
11,250.00	11,188.82	11,231.59	11,220.32	42.09	39.40	-90.23	-235.64	-3,865.09	2,990.32	2,934.31	56.01	53.391		
11,300.00	11,238.18	11,282.36	11,271.06	42.24	39.58	-90.36	-234.31	-3,865.10	2,990.35	2,934.11	56.24	53.168		
11,350.00	11,286.65	11,334.04	11,322.40	42.39	39.75	-90.49	-228.46	-3,865.15	2,990.40	2,933.92	56.47	52.953		
11,400.00	11,333.89	11,386.38	11,373.63	42.53	39.92	-90.61	-217.86	-3,865.24	2,990.45	2,933.76	56.69	52.750		
11,450.00	11,379.52	11,439.36	11,424.29	42.65	40.08	-90.73	-202.41	-3,865.38	2,990.52	2,933.62	56.90	52.556		
11,500.00	11,423.19	11,492.99	11,473.89	42.76	40.23	-90.84	-182.08	-3,865.55	2,990.59	2,933.49	57.10	52.373		
11,550.00	11,464.58	11,547.26	11,521.92	42.86	40.38	-90.95	-156.88	-3,865.77	2,990.67	2,933.38	57.29	52.199		
11,600.00	11,503.38	11,602.13	11,567.85	42.95	40.51	-91.05	-126.89	-3,866.03	2,990.75	2,933.27	57.48	52.033		
11,650.00	11,539.27	11,657.58	11,611.14	43.03	40.64	-91.15	-92.26	-3,866.33	2,990.83	2,933.17	57.66	51.874		
11,700.00	11,572.00	11,713.57	11,651.24	43.09	40.76	-91.23	-53.22	-3,866.66	2,990.90	2,933.07	57.83	51.719		
11,750.00	11,601.31	11,770.05	11,687.64	43.14	40.88	-91.30	-10.07	-3,867.04	2,990.97	2,932.97	58.00	51.567		
11,800.00	11,626.99	11,826.97	11,719.84	43.19	41.00	-91.37	36.83	-3,867.44	2,991.02	2,932.85	58.17	51.417		
11,850.00	11,648.82	11,884.24	11,747.39	43.23	41.13	-91.42	87.01	-3,867.87	2,991.06	2,932.72	58.34	51.266		
11,900.00	11,666.66	11,941.79	11,769.90	43.27	41.26	-91.46	139.95	-3,868.33	2,991.09	2,932.57	58.52	51.114		
11,950.00	11,680.35	11,999.54	11,787.03	43.31	41.40	-91.48	195.08	-3,868.80	2,991.10	2,932.40	58.70	50.959		
12,000.00	11,689.81	12,057.41	11,798.54	43.36	41.54	-91.49	251.76	-3,869.29	2,991.09	2,932.21	58.88	50.801		
12,050.00	11,694.95	12,115.30	11,804.28	43.42	41.68	-91.49	309.34	-3,869.79	2,991.06	2,932.00	59.07	50.639		
12,094.06	11,695.87	12,164.44	11,804.69	43.49	41.81	-91.48	358.46	-3,870.21	2,991.03	2,931.79	59.24	50.494		
12,100.00	11,695.77	12,170.38	11,804.59	43.50	41.83	-91.48	364.40	-3,870.26	2,991.02	2,931.77	59.26	50.474		
12,200.00	11,694.02	12,270.38	11,802.92	43.72	42.14	-91.48	464.39	-3,871.13	2,990.98	2,931.29	59.69	50.108		
12,300.00	11,692.27	12,370.38	11,801.26	44.02	42.51	-91.49	564.37	-3,871.99	2,990.94	2,930.73	60.21	49.678		
12,400.00	11,690.52	12,470.38	11,799.59	44.40	42.94	-91.49	664.35	-3,872.85	2,990.90	2,930.09	60.81	49.185		
12,500.00	11,688.77	12,570.38	11,797.93	44.85	43.42	-91.49	764.33	-3,873.71	2,990.86	2,929.36	61.49	48.637		
12,600.00	11,687.02	12,670.38	11,796.26	45.37	43.97	-91.49	864.32	-3,874.57	2,990.81	2,928.56	62.26	48.039		
12,700.00	11,685.27	12,770.38	11,794.60	45.95	44.57	-91.49	964.30	-3,875.44	2,990.77	2,927.67	63.10	47.397		
12,800.00	11,683.52	12,870.38	11,792.93	46.58	45.22	-91.49	1,064.28	-3,876.30	2,990.73	2,926.71	64.02	46.718		
12,900.00	11,681.78	12,970.38	11,791.27	47.27	45.92	-91.49	1,164.26	-3,877.16	2,990.69	2,925.68	65.00	46.008		
13,000.00	11,680.03	13,070.38	11,789.60	48.00	46.67	-91.50	1,264.24	-3,878.02	2,990.65	2,924.59	66.06	45.272		
13,100.00	11,678.28	13,170.38	11,787.94	48.78	47.46	-91.50	1,364.23	-3,878.89	2,990.60	2,923.43	67.18	44.517		
13,200.00	11,676.53	13,270.38	11,786.27	49.60	48.30	-91.50	1,464.21	-3,879.75	2,990.56	2,922.20	68.36	43.748		
13,300.00	11,674.78	13,370.38	11,784.61	50.46	49.18	-91.50	1,564.19	-3,880.61	2,990.52	2,920.92	69.60	42.968		
13,400.00	11,673.03	13,470.38	11,782.94	51.36	50.09	-91.50	1,664.17	-3,881.47	2,990.48	2,919.58	70.89	42.183		
13,500.00	11,671.28	13,570.38	11,781.28	52.30	51.05	-91.50	1,764.16	-3,882.33	2,990.44	2,918.20	72.24	41.396		
13,600.00	11,669.53	13,670.38	11,779.61	53.28	52.04	-91.51	1,864.14	-3,883.20	2,990.39	2,916.76	73.64	40.611		
13,700.00	11,667.78	13,770.38	11,777.95	54.28	53.06	-91.51	1,964.12	-3,884.06	2,990.35	2,915.27	75.08	39.830		
13,800.00	11,666.04	13,870.38	11,776.28	55.32	54.11	-91.51	2,064.10	-3,884.92	2,990.31	2,913.74	76.56	39.056		
13,900.00	11,664.29	13,970.38	11,774.62	56.38	55.20	-91.51	2,164.09	-3,885.78	2,990.27	2,912.17	78.09	38.291		
14,000.00	11,662.54	14,070.38	11,772.95	57.48	56.31	-91.51	2,264.07	-3,886.64	2,990.22	2,910.56	79.66	37.537		
14,100.00	11,660.79	14,170.38	11,771.29	58.59	57.44	-91.51	2,364.05	-3,887.51	2,990.18	2,908.92	81.27	36.795		
14,200.00	11,659.04	14,270.38	11,769.62	59.74	58.60	-91.52	2,464.03	-3,888.37	2,990.14	2,907.24	82.90	36.067		
14,300.00	11,657.29	14,370.38	11,767.96	60.91	59.79	-91.52	2,564.02	-3,889.23	2,990.10	2,905.52	84.58	35.354		
14,400.00	11,655.54	14,470.38	11,766.29	62.09	60.99	-91.52	2,664.00	-3,890.09	2,990.06	2,903.78	86.28	34.656		
14,500.00	11,653.79	14,570.38	11,764.63	63.30	62.22	-91.52	2,763.98	-3,890.96	2,990.01	2,902.00	88.01	33.974		
14,600.00	11,652.04	14,670.38	11,762.96	64.53	63.47	-91.52	2,863.96	-3,891.82	2,989.97	2,900.20	89.77	33.308		
14,700.00	11,650.30	14,770.38	11,761.30	65.78	64.73	-91.52	2,963.95	-3,892.68	2,989.93	2,898.38	91.55	32.658		
14,800.00	11,648.55	14,870.38	11,759.63	67.04	66.01	-91.53	3,063.93	-3,893.54	2,989.89	2,896.53	93.36	32.025		
14,900.00	11,646.80	14,970.38	11,757.97	68.33	67.31	-91.53	3,163.91	-3,894.40	2,989.85	2,894.65	95.19	31.408		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													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		
15,000.00	11,645.05	15,070.38	11,756.30	69.62	68.62	-91.53	3,263.89	-3,895.27	2,989.80	2,892.76	97.05	30.808		
15,100.00	11,643.30	15,170.38	11,754.64	70.93	69.95	-91.53	3,363.87	-3,896.13	2,989.76	2,890.84	98.92	30.224		
15,200.00	11,641.55	15,270.38	11,752.97	72.26	71.29	-91.53	3,463.86	-3,896.99	2,989.72	2,888.91	100.81	29.656		
15,300.00	11,639.80	15,370.38	11,751.31	73.60	72.64	-91.53	3,563.84	-3,897.85	2,989.68	2,886.95	102.72	29.104		
15,400.00	11,638.05	15,470.38	11,749.64	74.95	74.01	-91.54	3,663.82	-3,898.71	2,989.64	2,884.98	104.65	28.567		
15,500.00	11,636.30	15,570.38	11,747.98	76.31	75.38	-91.54	3,763.80	-3,899.58	2,989.59	2,883.00	106.60	28.045		
15,600.00	11,634.56	15,670.38	11,746.32	77.68	76.77	-91.54	3,863.79	-3,900.44	2,989.55	2,880.99	108.56	27.539		
15,700.00	11,632.81	15,770.38	11,744.65	79.07	78.17	-91.54	3,963.77	-3,901.30	2,989.51	2,878.98	110.53	27.046		
15,800.00	11,631.06	15,870.38	11,742.99	80.46	79.58	-91.54	4,063.75	-3,902.16	2,989.47	2,876.95	112.52	26.568		
15,900.00	11,629.31	15,970.38	11,741.32	81.87	80.99	-91.54	4,163.73	-3,903.03	2,989.43	2,874.90	114.52	26.103		
16,000.00	11,627.56	16,070.38	11,739.66	83.28	82.42	-91.55	4,263.72	-3,903.89	2,989.38	2,872.85	116.54	25.652		
16,100.00	11,625.81	16,170.38	11,737.99	84.70	83.85	-91.55	4,363.70	-3,904.75	2,989.34	2,870.78	118.56	25.213		
16,200.00	11,624.06	16,270.38	11,736.33	86.13	85.29	-91.55	4,463.68	-3,905.61	2,989.30	2,868.70	120.60	24.787		
16,300.00	11,622.31	16,370.38	11,734.66	87.57	86.74	-91.55	4,563.66	-3,906.47	2,989.26	2,866.61	122.65	24.373		
16,400.00	11,620.56	16,470.38	11,733.00	89.01	88.20	-91.55	4,663.65	-3,907.34	2,989.22	2,864.51	124.70	23.970		
16,500.00	11,618.82	16,570.38	11,731.33	90.47	89.66	-91.55	4,763.63	-3,908.20	2,989.17	2,862.40	126.77	23.579		
16,600.00	11,617.07	16,670.38	11,729.67	91.92	91.13	-91.56	4,863.61	-3,909.06	2,989.13	2,860.28	128.85	23.199		
16,700.00	11,615.32	16,770.38	11,728.00	93.39	92.61	-91.56	4,963.59	-3,909.92	2,989.09	2,858.16	130.93	22.829		
16,800.00	11,613.57	16,870.38	11,726.34	94.86	94.09	-91.56	5,063.58	-3,910.78	2,989.05	2,856.02	133.03	22.469		
16,900.00	11,611.82	16,970.38	11,724.67	96.34	95.58	-91.56	5,163.56	-3,911.65	2,989.01	2,853.88	135.13	22.120		
17,000.00	11,610.07	17,070.38	11,723.01	97.82	97.07	-91.56	5,263.54	-3,912.51	2,988.96	2,851.73	137.24	21.780		
17,100.00	11,608.32	17,170.38	11,721.34	99.31	98.57	-91.56	5,363.52	-3,913.37	2,988.92	2,849.57	139.35	21.449		
17,200.00	11,606.57	17,270.38	11,719.68	100.80	100.07	-91.57	5,463.50	-3,914.23	2,988.88	2,847.40	141.48	21.126		
17,300.00	11,604.82	17,370.38	11,718.01	102.30	101.57	-91.57	5,563.49	-3,915.10	2,988.84	2,845.23	143.61	20.813		
17,400.00	11,603.08	17,470.38	11,716.35	103.80	103.09	-91.57	5,663.47	-3,915.96	2,988.80	2,843.05	145.74	20.507		
17,500.00	11,601.33	17,570.38	11,714.68	105.31	104.60	-91.57	5,763.45	-3,916.82	2,988.75	2,840.87	147.88	20.210		
17,600.00	11,599.58	17,670.38	11,713.02	106.82	106.12	-91.57	5,863.43	-3,917.68	2,988.71	2,838.68	150.03	19.921		
17,700.00	11,597.83	17,770.38	11,711.35	108.34	107.65	-91.57	5,963.42	-3,918.54	2,988.67	2,836.48	152.18	19.638		
17,800.00	11,596.08	17,870.38	11,709.69	109.85	109.17	-91.57	6,063.40	-3,919.41	2,988.63	2,834.28	154.34	19.364		
17,900.00	11,594.33	17,970.38	11,708.02	111.38	110.70	-91.58	6,163.38	-3,920.27	2,988.59	2,832.08	156.51	19.096		
18,000.00	11,592.58	18,070.38	11,706.36	112.90	112.24	-91.58	6,263.36	-3,921.13	2,988.54	2,829.87	158.67	18.834		
18,100.00	11,590.83	18,170.38	11,704.69	114.43	113.78	-91.58	6,363.35	-3,921.99	2,988.50	2,827.65	160.85	18.580		
18,200.00	11,589.08	18,270.38	11,703.03	115.97	115.32	-91.58	6,463.33	-3,922.85	2,988.46	2,825.43	163.03	18.331		
18,300.00	11,587.34	18,370.38	11,701.36	117.50	116.86	-91.58	6,563.31	-3,923.72	2,988.42	2,823.21	165.21	18.089		
18,400.00	11,585.59	18,470.38	11,699.70	119.04	118.41	-91.58	6,663.29	-3,924.58	2,988.38	2,820.98	167.39	17.852		
18,500.00	11,583.84	18,570.38	11,698.03	120.59	119.96	-91.59	6,763.28	-3,925.44	2,988.33	2,818.75	169.58	17.622		
18,600.00	11,582.09	18,670.38	11,696.37	122.13	121.51	-91.59	6,863.26	-3,926.30	2,988.29	2,816.51	171.78	17.396		
18,700.00	11,580.34	18,770.38	11,694.70	123.68	123.06	-91.59	6,963.24	-3,927.17	2,988.25	2,814.28	173.97	17.176		
18,800.00	11,578.59	18,870.38	11,693.04	125.23	124.62	-91.59	7,063.22	-3,928.03	2,988.21	2,812.03	176.18	16.962		
18,900.00	11,576.84	18,970.38	11,691.37	126.79	126.18	-91.59	7,163.21	-3,928.89	2,988.17	2,809.79	178.38	16.752		
19,000.00	11,575.09	19,070.38	11,689.71	128.34	127.74	-91.59	7,263.19	-3,929.75	2,988.12	2,807.54	180.59	16.547		
19,100.00	11,573.34	19,170.38	11,688.04	129.90	129.31	-91.60	7,363.17	-3,930.61	2,988.08	2,805.28	182.80	16.346		
19,200.00	11,571.60	19,270.38	11,686.38	131.46	130.87	-91.60	7,463.15	-3,931.48	2,988.04	2,803.03	185.01	16.151		
19,300.00	11,569.85	19,370.38	11,684.71	133.02	132.44	-91.60	7,563.13	-3,932.34	2,988.00	2,800.77	187.23	15.959		
19,400.00	11,568.10	19,470.38	11,683.05	134.59	134.01	-91.60	7,663.12	-3,933.20	2,987.96	2,798.51	189.45	15.772		
19,500.00	11,566.35	19,570.38	11,681.38	136.15	135.58	-91.60	7,763.10	-3,934.06	2,987.91	2,796.24	191.67	15.589		
19,600.00	11,564.60	19,670.38	11,679.72	137.72	137.16	-91.60	7,863.08	-3,934.92	2,987.87	2,793.98	193.90	15.410		
19,700.00	11,562.85	19,770.38	11,678.06	139.29	138.73	-91.61	7,963.06	-3,935.79	2,987.83	2,791.71	196.12	15.234		
19,800.00	11,561.10	19,870.38	11,676.39	140.87	140.31	-91.61	8,063.05	-3,936.65	2,987.79	2,789.43	198.35	15.063		
19,900.00	11,559.35	19,970.38	11,674.73	142.44	141.89	-91.61	8,163.03	-3,937.51	2,987.75	2,787.16	200.59	14.895		
20,000.00	11,557.60	20,070.38	11,673.06	144.02	143.47	-91.61	8,263.01	-3,938.37	2,987.70	2,784.88	202.82	14.731		
20,100.00	11,555.86	20,170.38	11,671.40	145.59	145.06	-91.61	8,362.99	-3,939.24	2,987.66	2,782.60	205.06	14.570		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													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		
20,200.00	11,554.11	20,270.38	11,669.73	147.17	146.64	-91.61	8,462.98	-3,940.10	2,987.62	2,780.32	207.30	14.412		
20,300.00	11,552.36	20,370.38	11,668.07	148.76	148.23	-91.62	8,562.96	-3,940.96	2,987.58	2,778.04	209.54	14.258		
20,400.00	11,550.61	20,470.38	11,666.40	150.34	149.81	-91.62	8,662.94	-3,941.82	2,987.54	2,775.76	211.78	14.107		
20,500.00	11,548.86	20,570.38	11,664.74	151.92	151.40	-91.62	8,762.92	-3,942.68	2,987.49	2,773.47	214.03	13.959		
20,600.00	11,547.11	20,670.38	11,663.07	153.51	152.99	-91.62	8,862.91	-3,943.55	2,987.45	2,771.18	216.27	13.813		
20,700.00	11,545.36	20,770.38	11,661.41	155.09	154.58	-91.62	8,962.89	-3,944.41	2,987.41	2,768.89	218.52	13.671		
20,800.00	11,543.61	20,870.38	11,659.74	156.68	156.17	-91.62	9,062.87	-3,945.27	2,987.37	2,766.60	220.77	13.531		
20,900.00	11,541.86	20,970.38	11,658.08	158.27	157.77	-91.63	9,162.85	-3,946.13	2,987.33	2,764.30	223.02	13.395		
21,000.00	11,540.12	21,070.38	11,656.41	159.86	159.36	-91.63	9,262.84	-3,946.99	2,987.28	2,762.01	225.28	13.260		
21,100.00	11,538.37	21,170.38	11,654.75	161.45	160.96	-91.63	9,362.82	-3,947.86	2,987.24	2,759.71	227.53	13.129		
21,200.00	11,536.62	21,270.38	11,653.08	163.05	162.56	-91.63	9,462.80	-3,948.72	2,987.20	2,757.41	229.79	13.000		
21,300.00	11,534.87	21,370.38	11,651.42	164.64	164.15	-91.63	9,562.78	-3,949.58	2,987.16	2,755.11	232.05	12.873		
21,400.00	11,533.12	21,470.38	11,649.75	166.24	165.75	-91.63	9,662.76	-3,950.44	2,987.12	2,752.81	234.31	12.749		
21,500.00	11,531.37	21,570.38	11,648.09	167.83	167.35	-91.64	9,762.75	-3,951.31	2,987.07	2,750.50	236.57	12.626		
21,600.00	11,529.62	21,670.38	11,646.42	169.43	168.95	-91.64	9,862.73	-3,952.17	2,987.03	2,748.20	238.84	12.507		
21,700.00	11,527.87	21,770.38	11,644.76	171.03	170.56	-91.64	9,962.71	-3,953.03	2,986.99	2,745.89	241.10	12.389		
21,800.00	11,526.12	21,870.38	11,643.09	172.63	172.16	-91.64	10,062.69	-3,953.89	2,986.95	2,743.58	243.37	12.273		
21,860.26	11,525.07	21,929.37	11,642.11	173.59	173.11	-91.64	10,121.68	-3,954.40	2,986.92	2,742.20	244.72	12.205 CC		
21,874.54	11,524.82	21,929.37	11,642.11	173.82	173.11	-91.64	10,121.68	-3,954.40	2,986.96	2,742.03	244.92	12.195 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 701H - OH - Plan #2													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	34.30	34.30	0.00	0.04	-90.02	-1.01	-3,772.08	3,772.08				
100.00	100.00	134.30	134.30	0.13	0.25	-90.02	-1.01	-3,772.08	3,772.08	3,771.80	0.28	N/A	
200.00	200.00	234.30	234.30	0.48	0.61	-90.02	-1.01	-3,772.08	3,772.08	3,771.30	0.78	4,859.567	
300.00	300.00	334.30	334.30	0.84	0.97	-90.02	-1.01	-3,772.08	3,772.08	3,770.80	1.28	2,944.082	
400.00	400.00	434.30	434.30	1.20	1.32	-90.02	-1.01	-3,772.08	3,772.08	3,770.29	1.79	2,110.421	
500.00	500.00	534.30	534.30	1.56	1.68	-90.02	-1.01	-3,772.08	3,772.08	3,769.79	2.29	1,644.434	
600.00	600.00	634.30	634.30	1.92	2.04	-90.02	-1.01	-3,772.08	3,772.08	3,769.28	2.80	1,346.929	
700.00	700.00	734.30	734.30	2.28	2.40	-90.02	-1.01	-3,772.08	3,772.08	3,768.77	3.31	1,140.548	
800.00	800.00	834.30	834.30	2.63	2.76	-90.02	-1.01	-3,772.08	3,772.08	3,768.27	3.81	988.995	
900.00	900.00	934.30	934.30	2.99	3.12	-90.02	-1.01	-3,772.08	3,772.08	3,767.76	4.32	872.986	
1,000.00	1,000.00	1,034.30	1,034.30	3.35	3.47	-90.02	-1.01	-3,772.08	3,772.08	3,767.25	4.83	781.332	
1,100.00	1,100.00	1,134.30	1,134.30	3.71	3.83	-90.02	-1.01	-3,772.08	3,772.08	3,766.75	5.33	707.092	
1,200.00	1,200.00	1,234.30	1,234.30	4.07	4.19	-90.02	-1.01	-3,772.08	3,772.08	3,766.24	5.84	645.735	
1,300.00	1,300.00	1,334.30	1,334.30	4.43	4.55	-90.02	-1.01	-3,772.08	3,772.08	3,765.73	6.35	594.175	
1,400.00	1,400.00	1,434.30	1,434.30	4.79	4.91	-90.02	-1.01	-3,772.08	3,772.08	3,765.22	6.86	550.239	
1,500.00	1,500.00	1,534.30	1,534.30	5.14	5.27	-90.02	-1.01	-3,772.08	3,772.08	3,764.72	7.36	512.353	
1,600.00	1,600.00	1,634.30	1,634.30	5.50	5.63	-90.02	-1.01	-3,772.08	3,772.08	3,764.21	7.87	479.348	
1,700.00	1,700.00	1,734.30	1,734.30	5.86	5.98	-90.02	-1.01	-3,772.08	3,772.08	3,763.70	8.38	450.338	
1,800.00	1,800.00	1,834.30	1,834.30	6.22	6.34	-90.02	-1.01	-3,772.08	3,772.08	3,763.20	8.88	424.638	
1,900.00	1,900.00	1,934.30	1,934.30	6.58	6.70	-90.02	-1.01	-3,772.08	3,772.08	3,762.69	9.39	401.714	
2,000.00	2,000.00	2,034.30	2,034.30	6.94	7.06	-90.02	-1.01	-3,772.08	3,772.08	3,762.18	9.90	381.137	
2,100.00	2,100.00	2,134.30	2,134.30	7.29	7.42	-90.02	-1.01	-3,772.08	3,772.08	3,761.68	10.40	362.566	
2,200.00	2,200.00	2,234.30	2,234.30	7.65	7.78	-90.02	-1.01	-3,772.08	3,772.08	3,761.17	10.91	345.720	
2,300.00	2,300.00	2,334.30	2,334.30	8.01	8.13	-90.02	-1.01	-3,772.08	3,772.08	3,760.66	11.42	330.371	
2,400.00	2,400.00	2,434.30	2,434.30	8.37	8.49	-90.02	-1.01	-3,772.08	3,772.08	3,760.16	11.92	316.326	
2,500.00	2,500.00	2,534.30	2,534.30	8.73	8.85	-90.02	-1.01	-3,772.08	3,772.08	3,759.65	12.43	303.427	
2,600.00	2,600.00	2,634.30	2,634.30	9.09	9.21	-90.02	-1.01	-3,772.08	3,772.08	3,759.14	12.94	291.538	
2,700.00	2,700.00	2,734.30	2,734.30	9.45	9.57	-90.02	-1.01	-3,772.08	3,772.08	3,758.63	13.45	280.546	
2,800.00	2,800.00	2,834.30	2,834.30	9.80	9.93	-90.02	-1.01	-3,772.08	3,772.08	3,758.13	13.95	270.353	
2,900.00	2,900.00	2,934.30	2,934.30	10.16	10.29	-90.02	-1.01	-3,772.08	3,772.08	3,757.62	14.46	260.874	
3,000.00	3,000.00	3,034.30	3,034.30	10.52	10.64	-90.02	-1.01	-3,772.08	3,772.08	3,757.11	14.97	252.038	
3,100.00	3,100.00	3,134.30	3,134.30	10.88	11.00	-90.02	-1.01	-3,772.08	3,772.08	3,756.61	15.47	243.780	
3,109.26	3,109.26	3,143.56	3,143.56	10.91	11.04	-90.02	-1.01	-3,772.08	3,772.08	3,756.56	15.52	243.043	
3,200.00	3,200.00	3,200.00	3,200.00	11.24	11.24	-90.02	-1.01	-3,772.08	3,772.24	3,756.34	15.89	237.360	
3,300.00	3,299.99	3,274.00	3,273.99	11.59	11.49	12.86	-1.42	-3,772.67	3,771.88	3,755.56	16.32	231.164	
3,400.00	3,399.91	3,329.10	3,329.07	11.92	11.68	12.86	-2.24	-3,773.88	3,770.24	3,753.56	16.68	225.987	
3,500.00	3,499.69	3,400.00	3,399.91	12.26	11.91	12.86	-3.97	-3,776.40	3,767.31	3,750.22	17.09	220.497	
3,600.00	3,599.27	3,439.26	3,439.11	12.61	12.05	12.87	-5.24	-3,778.26	3,762.89	3,745.48	17.41	216.137	
3,700.00	3,698.57	3,500.00	3,499.69	12.96	12.25	12.87	-7.67	-3,781.79	3,757.18	3,739.39	17.79	211.241	
3,733.40	3,731.67	3,500.00	3,499.69	13.07	12.25	12.88	-7.67	-3,781.79	3,755.00	3,737.14	17.86	210.240	
3,800.00	3,797.62	3,549.41	3,548.92	13.31	12.41	12.87	-10.04	-3,785.25	3,750.66	3,732.53	18.13	206.833	
3,900.00	3,896.65	3,608.10	3,607.32	13.66	12.61	12.84	-13.32	-3,790.04	3,745.20	3,726.69	18.50	202.391	
4,000.00	3,995.67	3,707.94	3,706.61	14.02	12.95	12.80	-19.22	-3,798.65	3,740.24	3,721.25	18.98	197.014	
4,100.00	4,094.70	3,807.77	3,805.90	14.39	13.30	12.76	-25.12	-3,807.26	3,735.28	3,715.81	19.47	191.877	
4,200.00	4,193.73	3,907.61	3,905.19	14.75	13.64	12.71	-31.02	-3,815.88	3,730.32	3,710.37	19.95	186.965	
4,300.00	4,292.75	4,007.45	4,004.48	15.12	13.99	12.67	-36.92	-3,824.49	3,725.37	3,704.93	20.44	182.265	
4,400.00	4,391.78	4,107.29	4,103.77	15.50	14.34	12.63	-42.82	-3,833.10	3,720.42	3,699.49	20.93	177.767	
4,500.00	4,490.81	4,207.12	4,203.06	15.87	14.69	12.58	-48.72	-3,841.71	3,715.47	3,694.05	21.42	173.458	
4,600.00	4,589.83	4,306.96	4,302.35	16.25	15.05	12.54	-54.62	-3,850.33	3,710.52	3,688.61	21.91	169.328	
4,700.00	4,688.86	4,406.80	4,401.64	16.63	15.41	12.50	-60.52	-3,858.94	3,705.57	3,683.16	22.41	165.367	
4,800.00	4,787.89	4,506.64	4,500.94	17.01	15.77	12.45	-66.42	-3,867.55	3,700.63	3,677.73	22.90	161.567	
4,900.00	4,886.91	4,606.47	4,600.23	17.39	16.13	12.41	-72.32	-3,876.16	3,695.69	3,672.29	23.40	157.917	

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design		1912 Fed Com - 1912 Fed Com 701H - OH - Plan #2											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	4,985.94	4,706.31	4,699.52	17.78	16.49	12.37	-78.22	-3,884.77	3,690.75	3,666.85	23.90	154.411		
5,100.00	5,084.97	4,806.15	4,798.81	18.17	16.86	12.32	-84.12	-3,893.39	3,685.81	3,661.41	24.40	151.040		
5,200.00	5,183.99	4,905.99	4,898.10	18.56	17.22	12.28	-90.02	-3,902.00	3,680.88	3,655.97	24.90	147.798		
5,300.00	5,283.02	5,005.82	4,997.39	18.95	17.59	12.23	-95.92	-3,910.61	3,675.95	3,650.54	25.41	144.678		
5,400.00	5,382.05	5,105.66	5,096.68	19.34	17.96	12.19	-101.82	-3,919.22	3,671.02	3,645.11	25.91	141.672		
5,500.00	5,481.07	5,205.50	5,195.97	19.73	18.33	12.14	-107.72	-3,927.83	3,666.09	3,639.67	26.42	138.776		
5,600.00	5,580.10	5,305.34	5,295.26	20.12	18.70	12.10	-113.62	-3,936.45	3,661.16	3,634.24	26.92	135.985		
5,700.00	5,679.12	5,405.17	5,394.55	20.52	19.07	12.05	-119.52	-3,945.06	3,656.24	3,628.81	27.43	133.291		
5,800.00	5,778.15	5,505.01	5,493.84	20.92	19.44	12.01	-125.42	-3,953.67	3,651.32	3,623.38	27.94	130.692		
5,900.00	5,877.18	5,604.85	5,593.13	21.31	19.81	11.96	-131.32	-3,962.28	3,646.40	3,617.95	28.45	128.182		
6,000.00	5,976.20	5,704.69	5,692.42	21.71	20.19	11.92	-137.22	-3,970.90	3,641.48	3,612.53	28.96	125.757		
6,100.00	6,075.23	5,804.52	5,791.71	22.11	20.56	11.87	-143.12	-3,979.51	3,636.57	3,607.10	29.47	123.414		
6,200.00	6,174.26	5,904.36	5,891.00	22.51	20.94	11.83	-149.03	-3,988.12	3,631.66	3,601.68	29.98	121.147		
6,300.00	6,273.28	6,004.20	5,990.29	22.91	21.32	11.78	-154.93	-3,996.73	3,626.75	3,596.26	30.49	118.954		
6,400.00	6,372.31	6,104.04	6,089.58	23.32	21.69	11.73	-160.83	-4,005.34	3,621.84	3,590.84	31.00	116.831		
6,500.00	6,471.34	6,203.87	6,188.87	23.72	22.07	11.69	-166.73	-4,013.96	3,616.94	3,585.42	31.51	114.775		
6,600.00	6,570.36	6,303.71	6,288.16	24.12	22.45	11.64	-172.63	-4,022.57	3,612.03	3,580.01	32.03	112.783		
6,700.00	6,669.39	6,403.55	6,387.45	24.53	22.83	11.60	-178.53	-4,031.18	3,607.13	3,574.59	32.54	110.852		
6,800.00	6,768.42	6,503.39	6,486.74	24.93	23.21	11.55	-184.43	-4,039.79	3,602.24	3,569.18	33.05	108.979		
6,900.00	6,867.44	6,603.22	6,586.03	25.34	23.59	11.50	-190.33	-4,048.40	3,597.34	3,563.77	33.57	107.163		
7,000.00	6,966.47	6,703.06	6,685.32	25.74	23.97	11.46	-196.23	-4,057.02	3,592.45	3,558.36	34.08	105.400		
7,100.00	7,065.50	6,802.90	6,784.61	26.15	24.35	11.41	-202.13	-4,065.63	3,587.56	3,552.96	34.60	103.689		
7,200.00	7,164.52	6,902.74	6,883.90	26.55	24.73	11.36	-208.03	-4,074.24	3,582.67	3,547.55	35.12	102.026		
7,300.00	7,263.55	7,002.57	6,983.19	26.96	25.12	11.32	-213.93	-4,082.85	3,577.78	3,542.15	35.63	100.411		
7,400.00	7,362.58	7,102.41	7,082.48	27.37	25.50	11.27	-219.83	-4,091.46	3,572.90	3,536.75	36.15	98.841		
7,500.00	7,461.60	7,299.17	7,278.35	27.78	26.25	11.19	-230.34	-4,106.80	3,567.66	3,530.74	36.62	96.631		
7,600.00	7,560.63	7,398.99	7,379.93	28.19	27.37	11.24	-236.01	-4,115.08	3,555.81	3,517.89	37.91	93.787		
7,700.00	7,659.66	7,498.02	7,479.96	28.60	27.70	11.29	-236.01	-4,115.08	3,542.15	3,503.74	38.41	92.214		
7,800.00	7,758.68	7,597.05	7,579.98	29.01	28.04	11.33	-236.01	-4,115.08	3,528.50	3,489.59	38.91	90.680		
7,900.00	7,857.71	7,696.08	7,679.01	29.42	28.38	11.38	-236.01	-4,115.08	3,514.85	3,475.43	39.41	89.184		
8,000.00	7,956.74	7,795.11	7,778.04	29.83	28.71	11.42	-236.01	-4,115.08	3,501.20	3,461.28	39.91	87.724		
8,100.00	8,055.76	7,894.14	7,877.07	30.24	29.05	11.47	-236.01	-4,115.08	3,487.55	3,447.14	40.41	86.299		
8,200.00	8,154.79	7,993.17	7,976.10	30.65	29.38	11.51	-236.01	-4,115.08	3,473.90	3,432.99	40.91	84.909		
8,300.00	8,253.82	8,092.20	8,075.13	31.06	29.72	11.56	-236.01	-4,115.08	3,460.26	3,418.85	41.41	83.552		
8,400.00	8,352.84	8,191.23	8,174.16	31.47	30.06	11.61	-236.01	-4,115.08	3,446.62	3,404.70	41.92	82.226		
8,500.00	8,451.87	8,290.26	8,273.19	31.88	30.40	11.65	-236.01	-4,115.08	3,432.98	3,390.56	42.42	80.931		
8,600.00	8,550.90	8,389.29	8,372.22	32.29	30.74	11.70	-236.01	-4,115.08	3,419.34	3,376.42	42.92	79.666		
8,700.00	8,649.92	8,488.32	8,471.25	32.71	31.08	11.75	-236.01	-4,115.08	3,405.71	3,362.29	43.42	78.429		
8,800.00	8,748.95	8,587.35	8,570.28	33.12	31.42	11.79	-236.01	-4,115.08	3,392.08	3,348.15	43.93	77.220		
8,900.00	8,847.98	8,686.38	8,669.31	33.54	31.76	11.84	-236.01	-4,115.08	3,378.45	3,334.02	44.43	76.038		
9,000.00	8,947.00	8,785.41	8,768.34	33.95	32.10	11.89	-236.01	-4,115.08	3,364.82	3,319.89	44.93	74.882		
9,100.00	9,046.03	8,884.44	8,867.37	34.36	32.44	11.94	-236.01	-4,115.08	3,351.20	3,305.76	45.44	73.751		
9,200.00	9,145.05	8,983.47	8,966.40	34.78	32.78	11.99	-236.01	-4,115.08	3,337.57	3,291.63	45.94	72.645		
9,300.00	9,244.08	9,082.50	9,065.43	35.19	33.12	12.04	-236.01	-4,115.08	3,323.95	3,277.51	46.45	71.562		
9,400.00	9,343.11	9,181.53	9,164.46	35.61	33.46	12.09	-236.01	-4,115.08	3,310.34	3,263.38	46.95	70.502		
9,500.00	9,442.13	9,280.56	9,263.49	36.02	33.80	12.14	-236.01	-4,115.08	3,296.72	3,249.26	47.46	69.464		
9,600.00	9,541.16	9,379.59	9,362.52	36.44	34.14	12.19	-236.01	-4,115.08	3,283.11	3,235.15	47.96	68.448		
9,647.64	9,588.33	9,426.76	9,409.69	36.63	34.30	12.22	-236.01	-4,115.08	3,276.63	3,228.42	48.21	67.971		
9,700.00	9,640.24	9,525.79	9,508.72	36.85	34.48	12.22	-236.01	-4,115.08	3,269.85	3,221.38	48.47	67.460		
9,800.00	9,739.60	9,794.96	9,773.90	37.25	34.83	12.23	-236.01	-4,115.08	3,258.84	3,209.87	48.98	66.541		
9,900.00	9,839.22	9,894.58	9,873.52	37.63	35.17	12.23	-236.01	-4,115.08	3,250.38	3,200.90	49.48	65.694		
10,000.00	9,939.03	9,994.40	9,973.33	38.00	35.52	12.24	-236.01	-4,115.08	3,244.47	3,194.49	49.98	64.918		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 701H - OH - Plan #2													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	10,038.97	10,094.34	10,073.27	38.35	35.86	12.24	-236.01	-4,115.08	3,241.12	3,190.64	50.48	64.212		
10,181.03	10,120.00	10,175.37	10,154.30	38.61	36.14	-90.64	-236.01	-4,115.08	3,240.28	3,189.41	50.87	63.692		
10,200.00	10,138.97	10,194.33	10,173.27	38.68	36.21	-90.64	-236.01	-4,115.08	3,240.28	3,189.31	50.97	63.577		
10,300.00	10,238.97	10,294.33	10,273.27	39.00	36.56	-90.64	-236.01	-4,115.08	3,240.28	3,188.83	51.45	62.975		
10,400.00	10,338.97	10,394.33	10,373.27	39.32	36.90	-90.64	-236.01	-4,115.08	3,240.28	3,188.34	51.94	62.384		
10,500.00	10,438.97	10,494.33	10,473.27	39.65	37.25	-90.64	-236.01	-4,115.08	3,240.28	3,187.85	52.43	61.803		
10,600.00	10,538.97	10,594.33	10,573.27	39.97	37.60	-90.64	-236.01	-4,115.08	3,240.28	3,187.36	52.92	61.233		
10,700.00	10,638.97	10,694.33	10,673.27	40.30	37.95	-90.64	-236.01	-4,115.08	3,240.28	3,186.87	53.41	60.673		
10,800.00	10,738.97	10,794.33	10,773.27	40.62	38.30	-90.64	-236.01	-4,115.08	3,240.28	3,186.39	53.89	60.122		
10,900.00	10,838.97	10,894.33	10,873.27	40.95	38.64	-90.64	-236.01	-4,115.08	3,240.28	3,185.90	54.38	59.581		
11,000.00	10,938.97	10,994.33	10,973.27	41.28	38.99	-90.64	-236.01	-4,115.08	3,240.28	3,185.41	54.87	59.050		
11,100.00	11,038.97	11,094.33	11,073.27	41.60	39.34	-90.64	-236.01	-4,115.08	3,240.28	3,184.92	55.36	58.527		
11,184.03	11,123.00	11,178.37	11,157.30	41.88	39.63	-90.64	-236.01	-4,115.08	3,240.28	3,184.50	55.78	58.095 CC		
11,200.00	11,138.96	11,194.33	11,173.26	41.93	39.69	-90.12	-236.01	-4,115.08	3,240.28	3,184.43	55.85	58.014		
11,250.00	11,188.82	11,244.19	11,223.12	42.09	39.86	-90.18	-236.01	-4,115.08	3,240.29	3,184.20	56.09	57.765		
11,300.00	11,238.18	11,293.54	11,272.48	42.24	40.04	-90.32	-236.01	-4,115.08	3,240.33	3,184.00	56.33	57.526		
11,350.00	11,286.65	11,342.02	11,320.95	42.39	40.20	-90.52	-236.01	-4,115.08	3,240.42	3,183.86	56.55	57.299		
11,400.00	11,333.89	11,389.25	11,368.19	42.53	40.37	-90.77	-236.01	-4,115.08	3,240.61	3,183.84	56.77	57.084		
11,450.00	11,379.52	11,434.88	11,413.82	42.65	40.53	-91.06	-236.01	-4,115.08	3,240.97	3,183.99	56.98	56.882		
11,500.00	11,423.19	11,478.56	11,457.49	42.76	40.68	-91.38	-236.01	-4,115.08	3,241.57	3,184.39	57.17	56.696		
11,550.00	11,464.58	11,519.95	11,498.88	42.86	40.83	-91.70	-236.01	-4,115.08	3,242.48	3,185.12	57.36	56.525		
11,600.00	11,503.38	11,559.71	11,538.65	42.95	40.96	-92.01	-236.00	-4,115.08	3,243.79	3,186.25	57.55	56.369		
11,650.00	11,539.27	11,613.19	11,592.03	43.03	41.15	-92.46	-233.17	-4,115.10	3,245.49	3,187.74	57.75	56.202		
11,700.00	11,572.00	11,671.91	11,650.06	43.09	41.34	-92.93	-224.34	-4,115.18	3,247.49	3,189.54	57.95	56.041		
11,750.00	11,601.31	11,737.33	11,713.25	43.14	41.54	-93.44	-207.58	-4,115.33	3,249.75	3,191.60	58.15	55.886		
11,800.00	11,626.99	11,811.32	11,781.89	43.19	41.75	-93.98	-180.09	-4,115.56	3,252.20	3,193.86	58.35	55.739		
11,850.00	11,648.82	11,896.18	11,855.49	43.23	41.95	-94.57	-137.99	-4,115.93	3,254.74	3,196.20	58.54	55.601		
11,900.00	11,666.66	11,994.48	11,931.87	43.27	42.14	-95.19	-76.31	-4,116.46	3,257.20	3,198.48	58.72	55.472		
11,950.00	11,680.35	12,108.33	12,005.64	43.31	42.29	-95.81	10.16	-4,117.20	3,259.38	3,200.49	58.89	55.343		
12,000.00	11,689.81	12,238.02	12,066.97	43.36	42.39	-96.32	124.11	-4,118.18	3,261.03	3,201.94	59.09	55.191		
12,050.00	11,694.95	12,380.01	12,102.92	43.42	42.71	-96.62	261.10	-4,119.37	3,261.89	3,202.57	59.32	54.986		
12,094.06	11,695.87	12,477.80	12,107.78	43.49	42.97	-96.65	358.66	-4,120.21	3,261.94	3,202.40	59.54	54.787		
12,100.00	11,695.77	12,483.75	12,107.72	43.50	42.98	-96.65	364.61	-4,120.26	3,261.94	3,202.39	59.56	54.768		
12,200.00	11,694.02	12,583.74	12,106.75	43.72	43.29	-96.66	464.59	-4,121.12	3,261.99	3,202.03	59.96	54.400		
12,300.00	11,692.27	12,683.74	12,105.79	44.02	43.65	-96.68	564.58	-4,121.98	3,262.04	3,201.59	60.45	53.961		
12,400.00	11,690.52	12,783.74	12,104.83	44.40	44.07	-96.69	664.57	-4,122.84	3,262.09	3,201.06	61.02	53.455		
12,500.00	11,688.77	12,883.73	12,103.87	44.85	44.55	-96.70	764.56	-4,123.71	3,262.13	3,200.45	61.68	52.888		
12,600.00	11,687.02	12,983.73	12,102.90	45.37	45.07	-96.72	864.55	-4,124.57	3,262.18	3,199.77	62.41	52.266		
12,700.00	11,685.27	13,083.73	12,101.94	45.95	45.66	-96.73	964.54	-4,125.43	3,262.23	3,199.00	63.23	51.596		
12,800.00	11,683.52	13,183.72	12,100.98	46.58	46.29	-96.75	1,064.53	-4,126.29	3,262.28	3,198.16	64.11	50.884		
12,900.00	11,681.78	13,283.72	12,100.01	47.27	46.97	-96.76	1,164.51	-4,127.15	3,262.32	3,197.26	65.07	50.137		
13,000.00	11,680.03	13,383.72	12,099.05	48.00	47.69	-96.77	1,264.50	-4,128.02	3,262.37	3,196.28	66.09	49.361		
13,100.00	11,678.28	13,483.72	12,098.09	48.78	48.47	-96.79	1,364.49	-4,128.88	3,262.42	3,195.24	67.18	48.562		
13,200.00	11,676.53	13,583.71	12,097.12	49.60	49.28	-96.80	1,464.48	-4,129.74	3,262.47	3,194.14	68.33	47.745		
13,300.00	11,674.78	13,683.71	12,096.16	50.46	50.14	-96.81	1,564.47	-4,130.60	3,262.52	3,192.98	69.54	46.916		
13,400.00	11,673.03	13,783.71	12,095.20	51.36	51.03	-96.83	1,664.46	-4,131.46	3,262.57	3,191.77	70.80	46.080		
13,500.00	11,671.28	13,883.70	12,094.23	52.30	51.96	-96.84	1,764.45	-4,132.33	3,262.62	3,190.50	72.12	45.239		
13,600.00	11,669.53	13,983.70	12,093.27	53.28	52.93	-96.86	1,864.43	-4,133.19	3,262.67	3,189.18	73.49	44.399		
13,700.00	11,667.78	14,083.70	12,092.31	54.28	53.93	-96.87	1,964.42	-4,134.05	3,262.72	3,187.82	74.90	43.561		
13,800.00	11,666.04	14,183.69	12,091.35	55.32	54.96	-96.88	2,064.41	-4,134.91	3,262.77	3,186.41	76.36	42.731		
13,900.00	11,664.29	14,283.69	12,090.38	56.38	56.02	-96.90	2,164.40	-4,135.77	3,262.82	3,184.96	77.86	41.908		
14,000.00	11,662.54	14,383.69	12,089.42	57.48	57.11	-96.91	2,264.39	-4,136.63	3,262.87	3,183.47	79.39	41.097		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,660.79	14,483.68	12,088.46	58.59	58.22	-96.92	2,364.38	-4,137.50	3,262.92	3,181.95	80.97	40.298		
14,200.00	11,659.04	14,583.68	12,087.49	59.74	59.36	-96.94	2,464.36	-4,138.36	3,262.97	3,180.39	82.58	39.513		
14,300.00	11,657.29	14,683.68	12,086.53	60.91	60.53	-96.95	2,564.35	-4,139.22	3,263.02	3,178.79	84.22	38.742		
14,400.00	11,655.54	14,783.68	12,085.57	62.09	61.71	-96.97	2,664.34	-4,140.08	3,263.07	3,177.17	85.90	37.987		
14,500.00	11,653.79	14,883.67	12,084.60	63.30	62.92	-96.98	2,764.33	-4,140.94	3,263.12	3,175.52	87.60	37.249		
14,600.00	11,652.04	14,983.67	12,083.64	64.53	64.14	-96.99	2,864.32	-4,141.81	3,263.17	3,173.84	89.33	36.528		
14,700.00	11,650.30	15,083.67	12,082.68	65.78	65.39	-97.01	2,964.31	-4,142.67	3,263.22	3,172.13	91.09	35.824		
14,800.00	11,648.55	15,183.66	12,081.71	67.04	66.65	-97.02	3,064.30	-4,143.53	3,263.28	3,170.40	92.87	35.137		
14,900.00	11,646.80	15,283.66	12,080.75	68.33	67.93	-97.04	3,164.28	-4,144.39	3,263.33	3,168.65	94.68	34.467		
15,000.00	11,645.05	15,383.66	12,079.79	69.62	69.23	-97.05	3,264.27	-4,145.25	3,263.38	3,166.87	96.51	33.815		
15,100.00	11,643.30	15,483.65	12,078.83	70.93	70.54	-97.06	3,364.26	-4,146.12	3,263.43	3,165.08	98.35	33.181		
15,200.00	11,641.55	15,583.65	12,077.86	72.26	71.86	-97.08	3,464.25	-4,146.98	3,263.48	3,163.26	100.22	32.563		
15,300.00	11,639.80	15,683.65	12,076.90	73.60	73.20	-97.09	3,564.24	-4,147.84	3,263.54	3,161.43	102.11	31.962		
15,400.00	11,638.05	15,783.64	12,075.94	74.95	74.55	-97.10	3,664.23	-4,148.70	3,263.59	3,159.58	104.01	31.378		
15,500.00	11,636.30	15,883.64	12,074.97	76.31	75.91	-97.12	3,764.22	-4,149.56	3,263.64	3,157.71	105.93	30.810		
15,600.00	11,634.56	15,983.64	12,074.01	77.68	77.28	-97.13	3,864.20	-4,150.43	3,263.70	3,155.83	107.86	30.258		
15,700.00	11,632.81	16,083.64	12,073.05	79.07	78.67	-97.15	3,964.19	-4,151.29	3,263.75	3,153.94	109.81	29.721		
15,800.00	11,631.06	16,183.63	12,072.08	80.46	80.06	-97.16	4,064.18	-4,152.15	3,263.80	3,152.03	111.78	29.199		
15,900.00	11,629.31	16,283.63	12,071.12	81.87	81.46	-97.17	4,164.17	-4,153.01	3,263.86	3,150.10	113.75	28.692		
16,000.00	11,627.56	16,383.63	12,070.16	83.28	82.88	-97.19	4,264.16	-4,153.87	3,263.91	3,148.17	115.74	28.199		
16,100.00	11,625.81	16,483.62	12,069.19	84.70	84.30	-97.20	4,364.15	-4,154.74	3,263.97	3,146.22	117.75	27.720		
16,200.00	11,624.06	16,583.62	12,068.23	86.13	85.73	-97.21	4,464.14	-4,155.60	3,264.02	3,144.26	119.76	27.255		
16,300.00	11,622.31	16,683.62	12,067.27	87.57	87.16	-97.23	4,564.12	-4,156.46	3,264.07	3,142.29	121.78	26.802		
16,400.00	11,620.56	16,783.61	12,066.31	89.01	88.61	-97.24	4,664.11	-4,157.32	3,264.13	3,140.31	123.82	26.362		
16,500.00	11,618.82	16,883.61	12,065.34	90.47	90.06	-97.26	4,764.10	-4,158.18	3,264.18	3,138.32	125.86	25.935		
16,600.00	11,617.07	16,983.61	12,064.38	91.92	91.52	-97.27	4,864.09	-4,159.05	3,264.24	3,136.32	127.91	25.519		
16,700.00	11,615.32	17,083.60	12,063.42	93.39	92.98	-97.28	4,964.08	-4,159.91	3,264.29	3,134.32	129.98	25.115		
16,800.00	11,613.57	17,183.60	12,062.45	94.86	94.46	-97.30	5,064.07	-4,160.77	3,264.35	3,132.30	132.05	24.721		
16,900.00	11,611.82	17,283.60	12,061.49	96.34	95.93	-97.31	5,164.06	-4,161.63	3,264.41	3,130.28	134.12	24.339		
17,000.00	11,610.07	17,383.59	12,060.53	97.82	97.42	-97.32	5,264.04	-4,162.49	3,264.46	3,128.25	136.21	23.967		
17,100.00	11,608.32	17,483.59	12,059.56	99.31	98.90	-97.34	5,364.03	-4,163.36	3,264.52	3,126.22	138.30	23.605		
17,200.00	11,606.57	17,583.59	12,058.60	100.80	100.40	-97.35	5,464.02	-4,164.22	3,264.57	3,124.18	140.40	23.252		
17,300.00	11,604.82	17,683.59	12,057.64	102.30	101.90	-97.37	5,564.01	-4,165.08	3,264.63	3,122.13	142.50	22.909		
17,400.00	11,603.08	17,783.58	12,056.67	103.80	103.40	-97.38	5,664.00	-4,165.94	3,264.69	3,120.07	144.62	22.575		
17,500.00	11,601.33	17,883.58	12,055.71	105.31	104.91	-97.39	5,763.99	-4,166.80	3,264.74	3,118.01	146.73	22.249		
17,600.00	11,599.58	17,983.58	12,054.75	106.82	106.42	-97.41	5,863.98	-4,167.67	3,264.80	3,115.94	148.86	21.932		
17,700.00	11,597.83	18,083.57	12,053.79	108.34	107.93	-97.42	5,963.96	-4,168.53	3,264.86	3,113.87	150.99	21.623		
17,800.00	11,596.08	18,183.57	12,052.82	109.85	109.45	-97.43	6,063.95	-4,169.39	3,264.92	3,111.79	153.12	21.322		
17,900.00	11,594.33	18,283.57	12,051.86	111.38	110.98	-97.45	6,163.94	-4,170.25	3,264.97	3,109.71	155.26	21.029		
18,000.00	11,592.58	18,383.56	12,050.90	112.90	112.50	-97.46	6,263.93	-4,171.11	3,265.03	3,107.62	157.41	20.743		
18,100.00	11,590.83	18,483.56	12,049.93	114.43	114.03	-97.48	6,363.92	-4,171.97	3,265.09	3,105.53	159.55	20.464		
18,200.00	11,589.08	18,583.56	12,048.97	115.97	115.57	-97.49	6,463.91	-4,172.84	3,265.15	3,103.44	161.71	20.192		
18,300.00	11,587.34	18,683.55	12,048.01	117.50	117.10	-97.50	6,563.90	-4,173.70	3,265.21	3,101.34	163.87	19.926		
18,400.00	11,585.59	18,783.55	12,047.04	119.04	118.64	-97.52	6,663.88	-4,174.56	3,265.26	3,099.24	166.03	19.667		
18,500.00	11,583.84	18,883.55	12,046.08	120.59	120.19	-97.53	6,763.87	-4,175.42	3,265.32	3,097.13	168.19	19.414		
18,600.00	11,582.09	18,983.55	12,045.12	122.13	121.73	-97.55	6,863.86	-4,176.28	3,265.38	3,095.02	170.36	19.167		
18,700.00	11,580.34	19,083.54	12,044.15	123.68	123.28	-97.56	6,963.85	-4,177.15	3,265.44	3,092.90	172.54	18.926		
18,800.00	11,578.59	19,183.54	12,043.19	125.23	124.83	-97.57	7,063.84	-4,178.01	3,265.50	3,090.79	174.71	18.691		
18,900.00	11,576.84	19,283.54	12,042.23	126.79	126.39	-97.59	7,163.83	-4,178.87	3,265.56	3,088.67	176.89	18.461		
19,000.00	11,575.09	19,383.53	12,041.27	128.34	127.94	-97.60	7,263.82	-4,179.73	3,265.62	3,086.54	179.08	18.236		
19,100.00	11,573.34	19,483.53	12,040.30	129.90	129.50	-97.61	7,363.80	-4,180.59	3,265.68	3,084.42	181.26	18.016		
19,200.00	11,571.60	19,583.53	12,039.34	131.46	131.06	-97.63	7,463.79	-4,181.46	3,265.74	3,082.29	183.45	17.801		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,569.85	19,683.52	12,038.38	133.02	132.63	-97.64	7,563.78	-4,182.32	3,265.80	3,080.15	185.65	17.592		
19,400.00	11,568.10	19,783.52	12,037.41	134.59	134.19	-97.66	7,663.77	-4,183.18	3,265.86	3,078.02	187.84	17.386		
19,500.00	11,566.35	19,883.52	12,036.45	136.15	135.76	-97.67	7,763.76	-4,184.04	3,265.92	3,075.88	190.04	17.186		
19,600.00	11,564.60	19,983.51	12,035.49	137.72	137.33	-97.68	7,863.75	-4,184.90	3,265.98	3,073.74	192.24	16.989		
19,700.00	11,562.85	20,083.51	12,034.52	139.29	138.90	-97.70	7,963.74	-4,185.77	3,266.04	3,071.60	194.44	16.797		
19,800.00	11,561.10	20,183.51	12,033.56	140.87	140.47	-97.71	8,063.72	-4,186.63	3,266.10	3,069.46	196.65	16.609		
19,900.00	11,559.35	20,283.50	12,032.60	142.44	142.05	-97.72	8,163.71	-4,187.49	3,266.16	3,067.31	198.85	16.425		
20,000.00	11,557.60	20,383.50	12,031.63	144.02	143.62	-97.74	8,263.70	-4,188.35	3,266.23	3,065.16	201.06	16.245		
20,100.00	11,555.86	20,483.50	12,030.67	145.59	145.20	-97.75	8,363.69	-4,189.21	3,266.29	3,063.01	203.28	16.068		
20,200.00	11,554.11	20,583.50	12,029.71	147.17	146.78	-97.77	8,463.68	-4,190.08	3,266.35	3,060.86	205.49	15.895		
20,300.00	11,552.36	20,683.49	12,028.74	148.76	148.36	-97.78	8,563.67	-4,190.94	3,266.41	3,058.71	207.71	15.726		
20,400.00	11,550.61	20,783.49	12,027.78	150.34	149.94	-97.79	8,663.66	-4,191.80	3,266.47	3,056.55	209.92	15.560		
20,500.00	11,548.86	20,883.49	12,026.82	151.92	151.53	-97.81	8,763.64	-4,192.66	3,266.54	3,054.39	212.14	15.398		
20,600.00	11,547.11	20,983.48	12,025.86	153.51	153.11	-97.82	8,863.63	-4,193.52	3,266.60	3,052.23	214.37	15.238		
20,700.00	11,545.36	21,083.48	12,024.89	155.09	154.70	-97.83	8,963.62	-4,194.39	3,266.66	3,050.07	216.59	15.082		
20,800.00	11,543.61	21,183.48	12,023.93	156.68	156.29	-97.85	9,063.61	-4,195.25	3,266.73	3,047.91	218.81	14.929		
20,900.00	11,541.86	21,283.47	12,022.97	158.27	157.88	-97.86	9,163.60	-4,196.11	3,266.79	3,045.75	221.04	14.779		
21,000.00	11,540.12	21,383.47	12,022.00	159.86	159.47	-97.88	9,263.59	-4,196.97	3,266.85	3,043.59	223.27	14.632		
21,100.00	11,538.37	21,483.47	12,021.04	161.45	161.06	-97.89	9,363.57	-4,197.83	3,266.92	3,041.42	225.50	14.488		
21,200.00	11,536.62	21,583.46	12,020.08	163.05	162.66	-97.90	9,463.56	-4,198.70	3,266.98	3,039.25	227.73	14.346		
21,300.00	11,534.87	21,683.46	12,019.11	164.64	164.25	-97.92	9,563.55	-4,199.56	3,267.04	3,037.08	229.96	14.207		
21,400.00	11,533.12	21,783.46	12,018.15	166.24	165.85	-97.93	9,663.54	-4,200.42	3,267.11	3,034.91	232.19	14.071		
21,500.00	11,531.37	21,883.46	12,017.19	167.83	167.44	-97.94	9,763.53	-4,201.28	3,267.17	3,032.74	234.43	13.937		
21,600.00	11,529.62	21,983.45	12,016.22	169.43	169.04	-97.96	9,863.52	-4,202.14	3,267.24	3,030.57	236.66	13.805		
21,700.00	11,527.87	22,083.45	12,015.26	171.03	170.64	-97.97	9,963.51	-4,203.01	3,267.30	3,028.40	238.90	13.676		
21,800.00	11,526.12	22,183.45	12,014.30	172.63	172.24	-97.99	10,063.49	-4,203.87	3,267.37	3,026.23	241.14	13.550		
21,800.03	11,526.12	22,183.48	12,014.30	172.63	172.24	-97.99	10,063.52	-4,203.87	3,267.37	3,026.23	241.14	13.550		
21,874.54	11,524.82	22,238.31	12,013.77	173.82	173.12	-97.99	10,118.35	-4,204.34	3,267.47	3,024.83	242.64	13.466 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 702H - OH - Plan #2													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	29.20	29.20	0.00	0.04	-90.00	-0.28	-3,702.10	3,702.10				
100.00	100.00	129.20	129.20	0.13	0.23	-90.00	-0.28	-3,702.10	3,702.10	3,701.84	0.26	N/A	
200.00	200.00	229.20	229.20	0.48	0.59	-90.00	-0.28	-3,702.10	3,702.10	3,701.34	0.76	4,858.344	
300.00	300.00	329.20	329.20	0.84	0.95	-90.00	-0.28	-3,702.10	3,702.10	3,700.83	1.27	2,920.735	
400.00	400.00	429.20	429.20	1.20	1.31	-90.00	-0.28	-3,702.10	3,702.10	3,700.33	1.77	2,087.030	
500.00	500.00	529.20	529.20	1.56	1.66	-90.00	-0.28	-3,702.10	3,702.10	3,699.82	2.28	1,623.391	
600.00	600.00	629.20	629.20	1.92	2.02	-90.00	-0.28	-3,702.10	3,702.10	3,699.31	2.79	1,328.246	
700.00	700.00	729.20	729.20	2.28	2.38	-90.00	-0.28	-3,702.10	3,702.10	3,698.81	3.29	1,123.887	
800.00	800.00	829.20	829.20	2.63	2.74	-90.00	-0.28	-3,702.10	3,702.10	3,698.30	3.80	974.017	
900.00	900.00	929.20	929.20	2.99	3.10	-90.00	-0.28	-3,702.10	3,702.10	3,697.79	4.31	859.409	
1,000.00	1,000.00	1,029.20	1,029.20	3.35	3.46	-90.00	-0.28	-3,702.10	3,702.10	3,697.29	4.81	768.929	
1,100.00	1,100.00	1,129.20	1,129.20	3.71	3.81	-90.00	-0.28	-3,702.10	3,702.10	3,696.78	5.32	695.685	
1,200.00	1,200.00	1,229.20	1,229.20	4.07	4.17	-90.00	-0.28	-3,702.10	3,702.10	3,696.27	5.83	635.180	
1,300.00	1,300.00	1,329.20	1,329.20	4.43	4.53	-90.00	-0.28	-3,702.10	3,702.10	3,695.76	6.34	584.356	
1,400.00	1,400.00	1,429.20	1,429.20	4.79	4.89	-90.00	-0.28	-3,702.10	3,702.10	3,695.26	6.84	541.063	
1,500.00	1,500.00	1,529.20	1,529.20	5.14	5.25	-90.00	-0.28	-3,702.10	3,702.10	3,694.75	7.35	503.742	
1,600.00	1,600.00	1,629.20	1,629.20	5.50	5.61	-90.00	-0.28	-3,702.10	3,702.10	3,694.24	7.86	471.237	
1,700.00	1,700.00	1,729.20	1,729.20	5.86	5.97	-90.00	-0.28	-3,702.10	3,702.10	3,693.74	8.36	442.673	
1,800.00	1,800.00	1,829.20	1,829.20	6.22	6.32	-90.00	-0.28	-3,702.10	3,702.10	3,693.23	8.87	417.373	
1,900.00	1,900.00	1,929.20	1,929.20	6.58	6.68	-90.00	-0.28	-3,702.10	3,702.10	3,692.72	9.38	394.809	
2,000.00	2,000.00	2,029.20	2,029.20	6.94	7.04	-90.00	-0.28	-3,702.10	3,702.10	3,692.22	9.88	374.559	
2,100.00	2,100.00	2,129.20	2,129.20	7.29	7.40	-90.00	-0.28	-3,702.10	3,702.10	3,691.71	10.39	356.286	
2,200.00	2,200.00	2,229.20	2,229.20	7.65	7.76	-90.00	-0.28	-3,702.10	3,702.10	3,691.20	10.90	339.712	
2,300.00	2,300.00	2,329.20	2,329.20	8.01	8.12	-90.00	-0.28	-3,702.10	3,702.10	3,690.70	11.40	324.612	
2,400.00	2,400.00	2,429.20	2,429.20	8.37	8.47	-90.00	-0.28	-3,702.10	3,702.10	3,690.19	11.91	310.797	
2,500.00	2,500.00	2,529.20	2,529.20	8.73	8.83	-90.00	-0.28	-3,702.10	3,702.10	3,689.68	12.42	298.109	
2,600.00	2,600.00	2,629.20	2,629.20	9.09	9.19	-90.00	-0.28	-3,702.10	3,702.10	3,689.17	12.93	286.417	
2,700.00	2,700.00	2,729.20	2,729.20	9.45	9.55	-90.00	-0.28	-3,702.10	3,702.10	3,688.67	13.43	275.608	
2,800.00	2,800.00	2,829.20	2,829.20	9.80	9.91	-90.00	-0.28	-3,702.10	3,702.10	3,688.16	13.94	265.585	
2,900.00	2,900.00	2,929.20	2,929.20	10.16	10.27	-90.00	-0.28	-3,702.10	3,702.10	3,687.65	14.45	256.265	
3,000.00	3,000.00	3,029.20	3,029.20	10.52	10.63	-90.00	-0.28	-3,702.10	3,702.10	3,687.15	14.95	247.577	
3,100.00	3,100.00	3,129.20	3,129.20	10.88	10.98	-90.00	-0.28	-3,702.10	3,702.10	3,686.64	15.46	239.459	
3,200.00	3,200.00	3,384.49	3,384.42	11.24	11.86	-90.04	-2.49	-3,698.23	3,701.49	3,685.16	16.33	226.681	
3,300.00	3,299.99	3,721.18	3,719.61	11.59	13.01	12.64	-17.68	-3,671.60	3,691.07	3,673.74	17.33	213.021	
3,400.00	3,399.91	3,820.00	3,817.70	11.92	13.35	12.61	-23.65	-3,661.14	3,676.69	3,658.89	17.80	206.547	
3,500.00	3,499.69	3,918.45	3,915.41	12.26	13.70	12.59	-29.59	-3,650.71	3,659.80	3,641.53	18.27	200.264	
3,600.00	3,599.27	4,016.46	4,012.70	12.61	14.04	12.59	-35.51	-3,640.34	3,640.40	3,621.65	18.75	194.164	
3,700.00	3,698.57	4,113.97	4,109.48	12.96	14.39	12.61	-41.40	-3,630.01	3,618.51	3,599.29	19.22	188.237	
3,733.40	3,731.67	4,146.42	4,141.68	13.07	14.51	12.62	-43.36	-3,626.58	3,610.64	3,591.26	19.38	186.289	
3,800.00	3,797.62	4,211.05	4,205.83	13.31	14.74	12.59	-47.26	-3,619.74	3,594.68	3,574.98	19.70	182.499	
3,900.00	3,896.65	4,308.08	4,302.14	13.66	15.09	12.54	-53.12	-3,609.46	3,570.72	3,550.54	20.17	177.016	
4,000.00	3,995.67	4,405.12	4,398.46	14.02	15.44	12.49	-58.98	-3,599.19	3,546.75	3,526.11	20.65	171.766	
4,100.00	4,094.70	4,502.16	4,494.77	14.39	15.80	12.44	-64.84	-3,588.92	3,522.80	3,501.67	21.13	166.738	
4,200.00	4,193.73	4,599.20	4,591.09	14.75	16.16	12.38	-70.70	-3,578.65	3,498.84	3,477.23	21.61	161.917	
4,300.00	4,292.75	4,696.24	4,687.41	15.12	16.51	12.33	-76.56	-3,568.37	3,474.89	3,452.79	22.09	157.294	
4,400.00	4,391.78	4,793.28	4,783.72	15.50	16.88	12.28	-82.42	-3,558.10	3,450.93	3,428.36	22.58	152.857	
4,500.00	4,490.81	4,890.32	4,880.04	15.87	17.24	12.22	-88.28	-3,547.83	3,426.99	3,403.92	23.06	148.596	
4,600.00	4,589.83	4,987.36	4,976.35	16.25	17.60	12.17	-94.14	-3,537.55	3,403.04	3,379.49	23.55	144.501	
4,700.00	4,688.86	5,084.40	5,072.67	16.63	17.97	12.11	-100.00	-3,527.28	3,379.10	3,355.06	24.04	140.565	
4,800.00	4,787.89	5,181.44	5,168.98	17.01	18.33	12.06	-105.85	-3,517.01	3,355.16	3,330.63	24.53	136.778	
4,900.00	4,886.91	5,278.48	5,265.30	17.39	18.70	12.00	-111.71	-3,506.73	3,331.22	3,306.20	25.02	133.133	
5,000.00	4,985.94	5,375.52	5,361.62	17.78	19.07	11.94	-117.57	-3,496.46	3,307.29	3,281.78	25.51	129.623	

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 702H - OH - Plan #2													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		
5,100.00	5,084.97	5,472.55	5,457.93	18.17	19.44	11.88	-123.43	-3,486.19	3,283.36	3,257.35	26.01	126.240		
5,200.00	5,183.99	5,569.59	5,554.25	18.56	19.81	11.82	-129.29	-3,475.91	3,259.44	3,232.93	26.50	122.978		
5,300.00	5,283.02	5,666.63	5,650.56	18.95	20.18	11.76	-135.15	-3,465.64	3,235.51	3,208.51	27.00	119.832		
5,400.00	5,382.05	5,763.67	5,746.88	19.34	20.56	11.70	-141.01	-3,455.37	3,211.59	3,184.10	27.50	116.795		
5,500.00	5,481.07	5,860.71	5,843.20	19.73	20.93	11.64	-146.87	-3,445.10	3,187.68	3,159.68	28.00	113.862		
5,600.00	5,580.10	5,957.75	5,939.51	20.12	21.31	11.58	-152.73	-3,434.82	3,163.77	3,135.27	28.50	111.029		
5,700.00	5,679.12	6,054.79	6,035.83	20.52	21.68	11.51	-158.59	-3,424.55	3,139.86	3,110.86	28.99	108.290		
5,800.00	5,778.15	6,151.83	6,132.14	20.92	22.06	11.45	-164.45	-3,414.28	3,115.95	3,086.46	29.50	105.641		
5,900.00	5,877.18	6,248.87	6,228.46	21.31	22.44	11.38	-170.31	-3,404.00	3,092.05	3,062.05	30.00	103.078		
6,000.00	5,976.20	6,345.91	6,324.77	21.71	22.81	11.31	-176.17	-3,393.73	3,068.15	3,037.66	30.50	100.597		
6,100.00	6,075.23	6,442.95	6,421.09	22.11	23.19	11.25	-182.03	-3,383.46	3,044.26	3,013.26	31.00	98.194		
6,200.00	6,174.26	6,539.99	6,517.41	22.51	23.57	11.18	-187.89	-3,373.18	3,020.37	2,988.87	31.51	95.866		
6,300.00	6,273.28	6,637.02	6,613.72	22.91	23.95	11.11	-193.75	-3,362.91	2,996.49	2,964.48	32.01	93.609		
6,400.00	6,372.31	6,734.06	6,710.04	23.32	24.33	11.03	-199.61	-3,352.64	2,972.61	2,940.09	32.52	91.421		
6,500.00	6,471.34	6,831.10	6,806.35	23.72	24.71	10.96	-205.47	-3,342.36	2,948.73	2,915.71	33.02	89.298		
6,600.00	6,570.36	6,928.14	6,902.67	24.12	25.09	10.89	-211.33	-3,332.09	2,924.86	2,891.33	33.53	87.238		
6,700.00	6,669.39	7,025.18	6,998.98	24.53	25.47	10.81	-217.19	-3,321.82	2,901.00	2,866.96	34.03	85.238		
6,800.00	6,768.42	7,100.00	7,073.25	24.93	25.77	10.75	-221.70	-3,313.91	2,877.23	2,842.72	34.50	83.390		
6,900.00	6,867.44	7,169.56	7,142.38	25.34	26.04	10.71	-225.51	-3,307.23	2,854.39	2,819.43	34.96	81.644		
7,000.00	6,966.47	7,229.41	7,201.96	25.74	26.27	10.68	-228.29	-3,302.36	2,832.88	2,797.48	35.40	80.027		
7,100.00	7,065.50	7,300.00	7,272.35	26.15	26.53	10.65	-230.97	-3,297.66	2,812.70	2,776.85	35.85	78.449		
7,200.00	7,164.52	7,350.15	7,322.41	26.55	26.71	10.65	-232.48	-3,295.00	2,793.78	2,757.51	36.26	77.041		
7,300.00	7,263.55	7,400.00	7,372.20	26.96	26.90	10.65	-233.66	-3,292.93	2,776.24	2,739.58	36.67	75.716		
7,400.00	7,362.58	7,472.12	7,444.28	27.37	27.15	10.66	-234.80	-3,290.94	2,759.97	2,722.86	37.11	74.370		
7,500.00	7,461.60	7,533.49	7,505.65	27.78	27.36	10.69	-235.24	-3,290.17	2,745.08	2,707.55	37.53	73.149		
7,600.00	7,560.63	7,617.68	7,589.83	28.19	27.65	10.73	-235.28	-3,290.10	2,731.29	2,693.30	37.99	71.894		
7,700.00	7,659.66	7,716.70	7,688.86	28.60	27.98	10.78	-235.28	-3,290.10	2,717.61	2,679.12	38.49	70.610		
7,800.00	7,758.68	7,815.73	7,787.88	29.01	28.31	10.84	-235.28	-3,290.10	2,703.94	2,664.95	38.99	69.358		
7,900.00	7,857.71	7,914.76	7,886.91	29.42	28.64	10.90	-235.28	-3,290.10	2,690.26	2,650.78	39.48	68.136		
8,000.00	7,956.74	8,013.78	7,985.94	29.83	28.98	10.95	-235.28	-3,290.10	2,676.59	2,636.61	39.98	66.945		
8,100.00	8,055.76	8,112.81	8,084.96	30.24	29.31	11.01	-235.28	-3,290.10	2,662.92	2,622.44	40.48	65.782		
8,200.00	8,154.79	8,211.84	8,183.99	30.65	29.65	11.07	-235.28	-3,290.10	2,649.26	2,608.27	40.98	64.647		
8,300.00	8,253.82	8,310.86	8,283.02	31.06	29.98	11.12	-235.28	-3,290.10	2,635.59	2,594.11	41.48	63.538		
8,400.00	8,352.84	8,409.89	8,382.04	31.47	30.32	11.18	-235.28	-3,290.10	2,621.93	2,579.95	41.98	62.455		
8,500.00	8,451.87	8,508.92	8,481.07	31.88	30.66	11.24	-235.28	-3,290.10	2,608.27	2,565.79	42.48	61.398		
8,600.00	8,550.90	8,607.94	8,580.10	32.30	30.99	11.30	-235.28	-3,290.10	2,594.62	2,551.63	42.98	60.364		
8,700.00	8,649.92	8,706.97	8,679.12	32.71	31.33	11.36	-235.28	-3,290.10	2,580.96	2,537.48	43.48	59.354		
8,800.00	8,748.95	8,806.00	8,778.15	33.12	31.67	11.42	-235.28	-3,290.10	2,567.31	2,523.33	43.99	58.366		
8,900.00	8,847.98	8,905.02	8,877.18	33.54	32.01	11.49	-235.28	-3,290.10	2,553.67	2,509.18	44.49	57.401		
9,000.00	8,947.00	9,004.05	8,976.20	33.95	32.35	11.55	-235.28	-3,290.10	2,540.02	2,495.03	44.99	56.456		
9,100.00	9,046.03	9,103.08	9,075.23	34.36	32.68	11.61	-235.28	-3,290.10	2,526.38	2,480.89	45.49	55.532		
9,200.00	9,145.05	9,202.10	9,174.25	34.78	33.02	11.68	-235.28	-3,290.10	2,512.74	2,466.75	46.00	54.628		
9,300.00	9,244.08	9,301.13	9,273.28	35.19	33.36	11.74	-235.28	-3,290.10	2,499.11	2,452.61	46.50	53.743		
9,400.00	9,343.11	9,400.16	9,372.31	35.61	33.70	11.81	-235.28	-3,290.10	2,485.48	2,438.47	47.01	52.877		
9,500.00	9,442.13	9,499.18	9,471.33	36.02	34.04	11.87	-235.28	-3,290.10	2,471.85	2,424.34	47.51	52.029		
9,600.00	9,541.16	9,598.21	9,570.36	36.44	34.38	11.94	-235.28	-3,290.10	2,458.22	2,410.21	48.01	51.198		
9,647.64	9,588.33	9,645.38	9,617.53	36.63	34.55	11.97	-235.28	-3,290.10	2,451.73	2,403.48	48.25	50.808		
9,700.00	9,640.24	9,697.28	9,669.44	36.85	34.72	11.98	-235.28	-3,290.10	2,444.95	2,396.43	48.52	50.392		
9,800.00	9,739.60	9,796.65	9,768.80	37.25	35.07	12.00	-235.28	-3,290.10	2,433.93	2,384.91	49.02	49.650		
9,900.00	9,839.22	9,896.27	9,868.42	37.63	35.41	12.02	-235.28	-3,290.10	2,425.47	2,375.94	49.52	48.975		
10,000.00	9,939.03	9,996.08	9,968.23	38.00	35.75	12.03	-235.28	-3,290.10	2,419.55	2,369.53	50.02	48.368		
10,100.00	10,038.97	10,096.02	10,068.17	38.35	36.10	12.04	-235.28	-3,290.10	2,416.20	2,365.68	50.52	47.825		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 702H - OH - Plan #2													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		
10,181.03	10,120.00	10,177.05	10,149.20	38.61	36.38	-90.84	-235.28	-3,290.10	2,415.36	2,364.44	50.92	47.435		
10,200.00	10,138.97	10,196.01	10,168.17	38.68	36.44	-90.84	-235.28	-3,290.10	2,415.36	2,364.35	51.01	47.349		
10,300.00	10,238.97	10,296.01	10,268.17	39.00	36.79	-90.84	-235.28	-3,290.10	2,415.36	2,363.86	51.50	46.901		
10,400.00	10,338.97	10,396.01	10,368.17	39.32	37.14	-90.84	-235.28	-3,290.10	2,415.36	2,363.37	51.99	46.462		
10,500.00	10,438.97	10,496.01	10,468.17	39.65	37.48	-90.84	-235.28	-3,290.10	2,415.36	2,362.88	52.47	46.030		
10,600.00	10,538.97	10,596.01	10,568.17	39.97	37.83	-90.84	-235.28	-3,290.10	2,415.36	2,362.40	52.96	45.605		
10,700.00	10,638.97	10,696.01	10,668.17	40.30	38.17	-90.84	-235.28	-3,290.10	2,415.36	2,361.91	53.45	45.189		
10,800.00	10,738.97	10,796.01	10,768.17	40.62	38.52	-90.84	-235.28	-3,290.10	2,415.36	2,361.42	53.94	44.779		
10,900.00	10,838.97	10,896.01	10,868.17	40.95	38.87	-90.84	-235.28	-3,290.10	2,415.36	2,360.93	54.43	44.377		
11,000.00	10,938.97	10,996.01	10,968.17	41.28	39.22	-90.84	-235.28	-3,290.10	2,415.36	2,360.44	54.92	43.981		
11,100.00	11,038.97	11,096.01	11,068.17	41.60	39.56	-90.84	-235.28	-3,290.10	2,415.36	2,359.95	55.41	43.592		
11,184.03	11,123.00	11,180.05	11,152.20	41.88	39.85	-90.84	-235.28	-3,290.10	2,415.36	2,359.54	55.82	43.271 CC		
11,200.00	11,138.96	11,196.01	11,168.16	41.93	39.91	-90.32	-235.28	-3,290.10	2,415.36	2,359.46	55.90	43.210		
11,250.00	11,188.82	11,245.87	11,218.02	42.09	40.08	-90.40	-235.28	-3,290.10	2,415.38	2,359.24	56.14	43.025		
11,300.00	11,238.18	11,295.22	11,267.38	42.24	40.26	-90.58	-235.28	-3,290.10	2,415.45	2,359.08	56.37	42.847		
11,350.00	11,286.65	11,343.70	11,315.85	42.39	40.42	-90.85	-235.28	-3,290.10	2,415.61	2,359.01	56.60	42.677		
11,400.00	11,333.89	11,390.94	11,363.09	42.53	40.59	-91.18	-235.28	-3,290.10	2,415.92	2,359.09	56.82	42.517		
11,450.00	11,379.52	11,441.02	11,413.15	42.65	40.76	-91.60	-234.26	-3,290.11	2,416.43	2,359.38	57.04	42.361		
11,500.00	11,423.19	11,484.98	11,466.79	42.76	40.94	-92.03	-228.51	-3,290.16	2,417.09	2,359.83	57.26	42.210		
11,550.00	11,464.58	11,551.38	11,522.01	42.86	41.12	-92.46	-217.15	-3,290.25	2,417.90	2,360.42	57.48	42.067		
11,600.00	11,503.38	11,610.46	11,578.36	42.95	41.29	-92.88	-199.48	-3,290.41	2,418.82	2,361.13	57.68	41.933		
11,650.00	11,539.27	11,672.45	11,635.19	43.03	41.46	-93.30	-174.81	-3,290.62	2,419.82	2,361.94	57.88	41.807		
11,700.00	11,572.00	11,737.55	11,691.64	43.09	41.61	-93.70	-142.47	-3,290.89	2,420.88	2,362.81	58.07	41.690		
11,750.00	11,601.31	11,805.90	11,746.56	43.14	41.75	-94.09	-101.85	-3,291.24	2,421.94	2,363.69	58.25	41.580		
11,800.00	11,626.99	11,877.52	11,798.50	43.19	41.86	-94.44	-52.59	-3,291.66	2,422.96	2,364.54	58.42	41.475		
11,850.00	11,648.82	11,952.34	11,845.74	43.23	41.95	-94.75	5.35	-3,292.15	2,423.89	2,365.30	58.59	41.372		
11,900.00	11,666.66	12,030.05	11,886.39	43.27	42.01	-95.01	71.51	-3,292.72	2,424.67	2,365.91	58.76	41.266		
11,950.00	11,680.35	12,110.18	11,918.53	43.31	42.04	-95.21	144.83	-3,293.34	2,425.25	2,366.32	58.93	41.153		
12,000.00	11,689.81	12,192.04	11,940.49	43.36	42.14	-95.33	223.61	-3,294.02	2,425.60	2,366.48	59.12	41.026		
12,050.00	11,694.95	12,274.78	11,951.06	43.42	42.36	-95.37	305.60	-3,294.71	2,425.70	2,366.37	59.33	40.885		
12,092.79	11,695.89	12,332.46	11,951.74	43.49	42.52	-95.36	363.27	-3,295.21	2,425.62	2,366.11	59.51	40.763		
12,094.06	11,695.87	12,333.73	11,951.73	43.49	42.52	-95.36	364.53	-3,295.22	2,425.62	2,366.11	59.51	40.760		
12,100.00	11,695.77	12,339.67	11,951.67	43.50	42.54	-95.36	370.48	-3,295.27	2,425.62	2,366.08	59.53	40.745		
12,200.00	11,694.02	12,439.67	11,950.71	43.72	42.85	-95.38	470.46	-3,296.12	2,425.64	2,365.69	59.95	40.463		
12,300.00	11,692.27	12,539.66	11,949.74	44.02	43.23	-95.40	570.45	-3,296.97	2,425.66	2,365.21	60.45	40.128		
12,400.00	11,690.52	12,639.66	11,948.78	44.40	43.65	-95.42	670.44	-3,297.83	2,425.68	2,364.65	61.03	39.744		
12,500.00	11,688.77	12,739.66	11,947.82	44.85	44.13	-95.44	770.43	-3,298.68	2,425.70	2,364.00	61.70	39.315		
12,600.00	11,687.02	12,839.66	11,946.86	45.37	44.67	-95.46	870.42	-3,299.53	2,425.72	2,363.28	62.44	38.846		
12,700.00	11,685.27	12,939.65	11,945.89	45.95	45.25	-95.48	970.41	-3,300.39	2,425.74	2,362.48	63.27	38.341		
12,800.00	11,683.52	13,039.65	11,944.93	46.58	45.89	-95.49	1,070.40	-3,301.24	2,425.77	2,361.60	64.16	37.805		
12,900.00	11,681.78	13,139.65	11,943.97	47.27	46.58	-95.51	1,170.39	-3,302.09	2,425.79	2,360.65	65.13	37.244		
13,000.00	11,680.03	13,239.64	11,943.00	48.00	47.31	-95.53	1,270.37	-3,302.95	2,425.81	2,359.64	66.17	36.662		
13,100.00	11,678.28	13,339.64	11,942.04	48.78	48.09	-95.55	1,370.36	-3,303.80	2,425.83	2,358.56	67.27	36.062		
13,200.00	11,676.53	13,439.64	11,941.08	49.60	48.91	-95.57	1,470.35	-3,304.65	2,425.86	2,357.43	68.43	35.451		
13,300.00	11,674.78	13,539.63	11,940.12	50.46	49.77	-95.59	1,570.34	-3,305.51	2,425.88	2,356.23	69.65	34.830		
13,400.00	11,673.03	13,639.63	11,939.15	51.36	50.67	-95.61	1,670.33	-3,306.36	2,425.90	2,354.98	70.92	34.205		
13,500.00	11,671.28	13,739.63	11,938.19	52.30	51.61	-95.62	1,770.32	-3,307.21	2,425.93	2,353.68	72.25	33.577		
13,600.00	11,669.53	13,839.62	11,937.23	53.28	52.58	-95.64	1,870.31	-3,308.06	2,425.95	2,352.32	73.63	32.949		
13,700.00	11,667.78	13,939.62	11,936.27	54.28	53.59	-95.66	1,970.29	-3,308.92	2,425.97	2,350.92	75.05	32.325		
13,800.00	11,666.04	14,039.62	11,935.30	55.32	54.62	-95.68	2,070.28	-3,309.77	2,426.00	2,349.48	76.52	31.705		
13,900.00	11,664.29	14,139.62	11,934.34	56.38	55.69	-95.70	2,170.27	-3,310.62	2,426.02	2,348.00	78.03	31.092		
14,000.00	11,662.54	14,239.61	11,933.38	57.48	56.78	-95.72	2,270.26	-3,311.48	2,426.05	2,346.47	79.57	30.488		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 702H - OH - Plan #2													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	11,660.79	14,339.61	11,932.41	58.59	57.90	-95.74	2,370.25	-3,312.33	2,426.07	2,344.91	81.16	29.893		
14,200.00	11,659.04	14,439.61	11,931.45	59.74	59.05	-95.75	2,470.24	-3,313.18	2,426.10	2,343.32	82.78	29.308		
14,300.00	11,657.29	14,539.60	11,930.49	60.91	60.22	-95.77	2,570.23	-3,314.04	2,426.13	2,341.69	84.43	28.735		
14,400.00	11,655.54	14,639.60	11,929.53	62.09	61.41	-95.79	2,670.21	-3,314.89	2,426.15	2,340.04	86.12	28.173		
14,500.00	11,653.79	14,739.60	11,928.56	63.30	62.62	-95.81	2,770.20	-3,315.74	2,426.18	2,338.35	87.83	27.624		
14,600.00	11,652.04	14,839.59	11,927.60	64.53	63.85	-95.83	2,870.19	-3,316.60	2,426.20	2,336.64	89.57	27.088		
14,700.00	11,650.30	14,939.59	11,926.64	65.78	65.10	-95.85	2,970.18	-3,317.45	2,426.23	2,334.90	91.33	26.564		
14,800.00	11,648.55	15,039.59	11,925.68	67.04	66.37	-95.87	3,070.17	-3,318.30	2,426.26	2,333.13	93.12	26.054		
14,900.00	11,646.80	15,139.58	11,924.71	68.33	67.65	-95.88	3,170.16	-3,319.15	2,426.29	2,331.35	94.94	25.556		
15,000.00	11,645.05	15,239.58	11,923.75	69.62	68.95	-95.90	3,270.15	-3,320.01	2,426.31	2,329.54	96.77	25.072		
15,100.00	11,643.30	15,339.58	11,922.79	70.93	70.26	-95.92	3,370.14	-3,320.86	2,426.34	2,327.71	98.63	24.601		
15,200.00	11,641.55	15,439.57	11,921.83	72.26	71.59	-95.94	3,470.12	-3,321.71	2,426.37	2,325.87	100.50	24.142		
15,300.00	11,639.80	15,539.57	11,920.86	73.60	72.93	-95.96	3,570.11	-3,322.57	2,426.40	2,324.00	102.40	23.696		
15,400.00	11,638.05	15,639.57	11,919.90	74.95	74.29	-95.98	3,670.10	-3,323.42	2,426.43	2,322.12	104.31	23.262		
15,500.00	11,636.30	15,739.57	11,918.94	76.31	75.65	-96.00	3,770.09	-3,324.27	2,426.45	2,320.22	106.23	22.841		
15,600.00	11,634.56	15,839.56	11,917.97	77.68	77.03	-96.01	3,870.08	-3,325.13	2,426.48	2,318.31	108.18	22.431		
15,700.00	11,632.81	15,939.56	11,917.01	79.07	78.42	-96.03	3,970.07	-3,325.98	2,426.51	2,316.38	110.13	22.033		
15,800.00	11,631.06	16,039.56	11,916.05	80.46	79.81	-96.05	4,070.06	-3,326.83	2,426.54	2,314.44	112.10	21.645		
15,900.00	11,629.31	16,139.55	11,915.09	81.87	81.22	-96.07	4,170.04	-3,327.69	2,426.57	2,312.48	114.09	21.269		
16,000.00	11,627.56	16,239.55	11,914.12	83.28	82.64	-96.09	4,270.03	-3,328.54	2,426.60	2,310.52	116.08	20.904		
16,100.00	11,625.81	16,339.55	11,913.16	84.70	84.06	-96.11	4,370.02	-3,329.39	2,426.63	2,308.54	118.09	20.549		
16,200.00	11,624.06	16,439.54	11,912.20	86.13	85.49	-96.13	4,470.01	-3,330.25	2,426.66	2,306.55	120.11	20.203		
16,300.00	11,622.31	16,539.54	11,911.24	87.57	86.93	-96.14	4,570.00	-3,331.10	2,426.69	2,304.55	122.14	19.868		
16,400.00	11,620.56	16,639.54	11,910.27	89.01	88.38	-96.16	4,669.99	-3,331.95	2,426.73	2,302.55	124.18	19.542		
16,500.00	11,618.82	16,739.53	11,909.31	90.47	89.84	-96.18	4,769.98	-3,332.80	2,426.76	2,300.53	126.23	19.225		
16,600.00	11,617.07	16,839.53	11,908.35	91.92	91.30	-96.20	4,869.96	-3,333.66	2,426.79	2,298.50	128.29	18.917		
16,700.00	11,615.32	16,939.53	11,907.38	93.39	92.76	-96.22	4,969.95	-3,334.51	2,426.82	2,296.46	130.36	18.617		
16,800.00	11,613.57	17,039.53	11,906.42	94.86	94.24	-96.24	5,069.94	-3,335.36	2,426.85	2,294.42	132.43	18.325		
16,900.00	11,611.82	17,139.52	11,905.46	96.34	95.72	-96.26	5,169.93	-3,336.22	2,426.89	2,292.37	134.52	18.042		
17,000.00	11,610.07	17,239.52	11,904.50	97.82	97.20	-96.27	5,269.92	-3,337.07	2,426.92	2,290.31	136.61	17.766		
17,100.00	11,608.32	17,339.52	11,903.53	99.31	98.69	-96.29	5,369.91	-3,337.92	2,426.95	2,288.25	138.70	17.497		
17,200.00	11,606.57	17,439.51	11,902.57	100.80	100.19	-96.31	5,469.90	-3,338.78	2,426.98	2,286.18	140.81	17.236		
17,300.00	11,604.82	17,539.51	11,901.61	102.30	101.69	-96.33	5,569.88	-3,339.63	2,427.02	2,284.10	142.92	16.982		
17,400.00	11,603.08	17,639.51	11,900.65	103.80	103.20	-96.35	5,669.87	-3,340.48	2,427.05	2,282.01	145.04	16.734		
17,500.00	11,601.33	17,739.50	11,899.68	105.31	104.70	-96.37	5,769.86	-3,341.34	2,427.09	2,279.92	147.16	16.493		
17,600.00	11,599.58	17,839.50	11,898.72	106.82	106.22	-96.39	5,869.85	-3,342.19	2,427.12	2,277.83	149.29	16.258		
17,700.00	11,597.83	17,939.50	11,897.76	108.34	107.74	-96.40	5,969.84	-3,343.04	2,427.15	2,275.73	151.42	16.029		
17,800.00	11,596.08	18,039.49	11,896.80	109.85	109.26	-96.42	6,069.83	-3,343.89	2,427.19	2,273.63	153.56	15.806		
17,900.00	11,594.33	18,139.49	11,895.83	111.38	110.78	-96.44	6,169.82	-3,344.75	2,427.22	2,271.52	155.71	15.588		
18,000.00	11,592.58	18,239.49	11,894.87	112.90	112.31	-96.46	6,269.81	-3,345.60	2,427.26	2,269.40	157.86	15.376		
18,100.00	11,590.83	18,339.48	11,893.91	114.43	113.84	-96.48	6,369.79	-3,346.45	2,427.29	2,267.28	160.01	15.169		
18,200.00	11,589.08	18,439.48	11,892.94	115.97	115.38	-96.50	6,469.78	-3,347.31	2,427.33	2,265.16	162.17	14.968		
18,300.00	11,587.34	18,539.48	11,891.98	117.50	116.92	-96.52	6,569.77	-3,348.16	2,427.37	2,263.03	164.33	14.771		
18,400.00	11,585.59	18,639.48	11,891.02	119.04	118.46	-96.53	6,669.76	-3,349.01	2,427.40	2,260.90	166.50	14.579		
18,500.00	11,583.84	18,739.47	11,890.06	120.59	120.00	-96.55	6,769.75	-3,349.87	2,427.44	2,258.77	168.67	14.392		
18,600.00	11,582.09	18,839.47	11,889.09	122.13	121.55	-96.57	6,869.74	-3,350.72	2,427.48	2,256.63	170.84	14.209		
18,700.00	11,580.34	18,939.47	11,888.13	123.68	123.10	-96.59	6,969.73	-3,351.57	2,427.51	2,254.49	173.02	14.030		
18,800.00	11,578.59	19,039.46	11,887.17	125.23	124.66	-96.61	7,069.71	-3,352.43	2,427.55	2,252.35	175.20	13.856		
18,900.00	11,576.84	19,139.46	11,886.21	126.79	126.21	-96.63	7,169.70	-3,353.28	2,427.59	2,250.20	177.39	13.685		
19,000.00	11,575.09	19,239.46	11,885.24	128.34	127.77	-96.65	7,269.69	-3,354.13	2,427.63	2,248.05	179.57	13.519		
19,100.00	11,573.34	19,339.45	11,884.28	129.90	129.33	-96.66	7,369.68	-3,354.98	2,427.66	2,245.90	181.77	13.356		
19,200.00	11,571.60	19,439.45	11,883.32	131.46	130.89	-96.68	7,469.67	-3,355.84	2,427.70	2,243.74	183.96	13.197		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design 1912 Fed Com - 1912 Fed Com 702H - OH - Plan #2													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	11,569.85	19,539.45	11,882.36	133.02	132.45	-96.70	7,569.66	-3,356.69	2,427.74	2,241.59	186.16	13.041		
19,400.00	11,568.10	19,639.44	11,881.39	134.59	134.02	-96.72	7,669.65	-3,357.54	2,427.78	2,239.43	188.35	12.889		
19,500.00	11,566.35	19,739.44	11,880.43	136.15	135.59	-96.74	7,769.63	-3,358.40	2,427.82	2,237.26	190.56	12.741		
19,600.00	11,564.60	19,839.44	11,879.47	137.72	137.16	-96.76	7,869.62	-3,359.25	2,427.86	2,235.10	192.76	12.595		
19,700.00	11,562.85	19,939.44	11,878.50	139.29	138.73	-96.78	7,969.61	-3,360.10	2,427.90	2,232.93	194.96	12.453		
19,800.00	11,561.10	20,039.43	11,877.54	140.87	140.31	-96.79	8,069.60	-3,360.96	2,427.94	2,230.76	197.17	12.314		
19,900.00	11,559.35	20,139.43	11,876.58	142.44	141.88	-96.81	8,169.59	-3,361.81	2,427.98	2,228.59	199.38	12.177		
20,000.00	11,557.60	20,239.43	11,875.62	144.02	143.46	-96.83	8,269.58	-3,362.66	2,428.02	2,226.42	201.60	12.044		
20,100.00	11,555.86	20,339.42	11,874.65	145.59	145.04	-96.85	8,369.57	-3,363.52	2,428.06	2,224.25	203.81	11.913		
20,200.00	11,554.11	20,439.42	11,873.69	147.17	146.62	-96.87	8,469.55	-3,364.37	2,428.10	2,222.07	206.03	11.785		
20,300.00	11,552.36	20,539.42	11,872.73	148.76	148.20	-96.89	8,569.54	-3,365.22	2,428.14	2,219.89	208.25	11.660		
20,400.00	11,550.61	20,639.41	11,871.77	150.34	149.79	-96.91	8,669.53	-3,366.07	2,428.18	2,217.71	210.47	11.537		
20,500.00	11,548.86	20,739.41	11,870.80	151.92	151.37	-96.92	8,769.52	-3,366.93	2,428.22	2,215.53	212.69	11.417		
20,600.00	11,547.11	20,839.41	11,869.84	153.51	152.96	-96.94	8,869.51	-3,367.78	2,428.27	2,213.35	214.92	11.299		
20,700.00	11,545.36	20,939.40	11,868.88	155.09	154.55	-96.96	8,969.50	-3,368.63	2,428.31	2,211.16	217.14	11.183		
20,800.00	11,543.61	21,039.40	11,867.91	156.68	156.14	-96.98	9,069.49	-3,369.49	2,428.35	2,208.98	219.37	11.070		
20,900.00	11,541.86	21,139.40	11,866.95	158.27	157.73	-97.00	9,169.48	-3,370.34	2,428.39	2,206.79	221.60	10.958		
21,000.00	11,540.12	21,239.39	11,865.99	159.86	159.32	-97.02	9,269.46	-3,371.19	2,428.44	2,204.60	223.83	10.849		
21,100.00	11,538.37	21,339.39	11,865.03	161.45	160.91	-97.04	9,369.45	-3,372.05	2,428.48	2,202.41	226.06	10.742		
21,200.00	11,536.62	21,439.39	11,864.06	163.05	162.51	-97.05	9,469.44	-3,372.90	2,428.52	2,200.22	228.30	10.637		
21,300.00	11,534.87	21,539.39	11,863.10	164.64	164.10	-97.07	9,569.43	-3,373.75	2,428.57	2,198.03	230.53	10.535		
21,400.00	11,533.12	21,639.38	11,862.14	166.24	165.70	-97.09	9,669.42	-3,374.61	2,428.61	2,195.84	232.77	10.434		
21,500.00	11,531.37	21,739.38	11,861.18	167.83	167.30	-97.11	9,769.41	-3,375.46	2,428.65	2,193.65	235.01	10.334		
21,600.00	11,529.62	21,839.38	11,860.21	169.43	168.90	-97.13	9,869.40	-3,376.31	2,428.70	2,191.45	237.25	10.237		
21,700.00	11,527.87	21,939.37	11,859.25	171.03	170.50	-97.15	9,969.38	-3,377.17	2,428.74	2,189.26	239.49	10.142		
21,800.00	11,526.12	22,039.37	11,858.29	172.63	172.10	-97.17	10,069.37	-3,378.02	2,428.79	2,187.06	241.73	10.048		
21,800.12	11,526.12	22,039.49	11,858.29	172.63	172.10	-97.17	10,069.49	-3,378.02	2,428.79	2,187.06	241.73	10.048		
21,874.54	11,524.82	22,099.37	11,857.71	173.82	173.06	-97.18	10,129.37	-3,378.53	2,428.87	2,185.61	243.25	9.985 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	89.53	0.29	34.99	34.99					
100.00	100.00	99.70	99.70	0.13	0.13	89.53	0.29	34.99	34.99	34.81	0.18	197.502		
200.00	200.00	199.70	199.70	0.48	0.48	89.53	0.29	34.99	34.99	34.31	0.68	51.184		
300.00	300.00	299.70	299.70	0.84	0.84	89.53	0.29	34.99	34.99	33.80	1.19	29.390		
400.00	400.00	399.70	399.70	1.20	1.20	89.53	0.29	34.99	34.99	33.29	1.70	20.613		
500.00	500.00	499.70	499.70	1.56	1.56	89.53	0.29	34.99	34.99	32.79	2.20	15.873		
600.00	600.00	599.70	599.70	1.92	1.92	89.53	0.29	34.99	34.99	32.28	2.71	12.905		
700.00	700.00	699.70	699.70	2.28	2.28	89.53	0.29	34.99	34.99	31.77	3.22	10.872		
800.00	800.00	799.70	799.70	2.63	2.63	89.53	0.29	34.99	34.99	31.27	3.73	9.393		
900.00	900.00	899.70	899.70	2.99	2.99	89.53	0.29	34.99	34.99	30.76	4.23	8.268		
1,000.00	1,000.00	999.70	999.70	3.35	3.35	89.53	0.29	34.99	34.99	30.25	4.74	7.383		
1,100.00	1,100.00	1,099.70	1,099.70	3.71	3.71	89.53	0.29	34.99	34.99	29.74	5.25	6.670		
1,200.00	1,200.00	1,199.70	1,199.70	4.07	4.07	89.53	0.29	34.99	34.99	29.24	5.75	6.082		
1,300.00	1,300.00	1,299.70	1,299.70	4.43	4.43	89.53	0.29	34.99	34.99	28.73	6.26	5.590		
1,400.00	1,400.00	1,399.70	1,399.70	4.79	4.78	89.53	0.29	34.99	34.99	28.22	6.77	5.171		
1,500.00	1,500.00	1,499.70	1,499.70	5.14	5.14	89.53	0.29	34.99	34.99	27.72	7.27	4.810		
1,600.00	1,600.00	1,599.70	1,599.70	5.50	5.50	89.53	0.29	34.99	34.99	27.21	7.78	4.497		
1,700.00	1,700.00	1,699.70	1,699.70	5.86	5.86	89.53	0.29	34.99	34.99	26.70	8.29	4.222		
1,800.00	1,800.00	1,799.70	1,799.70	6.22	6.22	89.53	0.29	34.99	34.99	26.20	8.79	3.979		
1,900.00	1,900.00	1,899.70	1,899.70	6.58	6.58	89.53	0.29	34.99	34.99	25.69	9.30	3.762		
2,000.00	2,000.00	1,999.70	1,999.70	6.94	6.94	89.53	0.29	34.99	34.99	25.18	9.81	3.567		
2,100.00	2,100.00	2,099.70	2,099.70	7.29	7.29	89.53	0.29	34.99	34.99	24.68	10.32	3.392		
2,200.00	2,200.00	2,199.70	2,199.70	7.65	7.65	89.53	0.29	34.99	34.99	24.17	10.82	3.233		
2,300.00	2,300.00	2,299.70	2,299.70	8.01	8.01	89.53	0.29	34.99	34.99	23.66	11.33	3.088		
2,400.00	2,400.00	2,399.70	2,399.70	8.37	8.37	89.53	0.29	34.99	34.99	23.15	11.84	2.956		
2,500.00	2,500.00	2,499.70	2,499.70	8.73	8.73	89.53	0.29	34.99	34.99	22.65	12.34	2.835		
2,600.00	2,600.00	2,599.70	2,599.70	9.09	9.09	89.53	0.29	34.99	34.99	22.14	12.85	2.723		
2,700.00	2,700.00	2,699.70	2,699.70	9.45	9.44	89.53	0.29	34.99	34.99	21.63	13.36	2.620		
2,800.00	2,800.00	2,799.70	2,799.70	9.80	9.80	89.53	0.29	34.99	34.99	21.13	13.86	2.524		
2,900.00	2,900.00	2,899.70	2,899.70	10.16	10.16	89.53	0.29	34.99	34.99	20.62	14.37	2.435		
3,000.00	3,000.00	2,999.70	2,999.70	10.52	10.52	89.53	0.29	34.99	34.99	20.11	14.88	2.352		
3,100.00	3,100.00	3,099.70	3,099.70	10.88	10.88	89.53	0.29	34.99	34.99	19.61	15.39	2.274		
3,200.00	3,200.00	3,199.70	3,199.70	11.24	11.24	89.53	0.29	34.99	34.99	19.10	15.89	2.202 CC, ES, SF		
3,300.00	3,299.99	3,299.69	3,299.69	11.59	11.60	-168.04	0.29	34.99	36.27	19.88	16.39	2.213		
3,400.00	3,399.91	3,399.61	3,399.61	11.92	11.95	-169.19	0.29	34.99	40.12	23.24	16.88	2.376		
3,500.00	3,499.69	3,499.39	3,499.39	12.26	12.31	-170.68	0.29	34.99	46.56	29.19	17.37	2.680		
3,600.00	3,599.27	3,600.36	3,600.35	12.61	12.66	-171.85	-0.16	33.75	54.35	36.50	17.85	3.044		
3,700.00	3,698.57	3,701.54	3,701.45	12.96	13.00	-172.42	-1.54	30.00	62.20	43.89	18.32	3.396		
3,733.40	3,731.67	3,735.38	3,735.23	13.07	13.12	-172.51	-2.20	28.18	64.83	46.36	18.47	3.511		
3,800.00	3,797.62	3,802.97	3,802.65	13.31	13.34	-172.52	-3.84	23.71	69.51	50.74	18.77	3.704		
3,900.00	3,896.65	3,904.70	3,903.94	13.66	13.69	-172.10	-7.08	14.88	74.40	55.19	19.21	3.874		
4,000.00	3,995.67	4,005.84	4,004.39	14.02	14.04	-171.24	-11.15	3.77	76.91	57.26	19.66	3.912		
4,100.00	4,094.70	4,105.82	4,103.62	14.39	14.39	-170.34	-15.34	-7.68	78.97	58.83	20.14	3.920		
4,200.00	4,193.73	4,205.79	4,202.84	14.75	14.74	-169.49	-19.53	-19.13	81.05	60.41	20.63	3.928		
4,300.00	4,292.75	4,305.76	4,302.07	15.12	15.09	-168.68	-23.73	-30.57	83.14	62.02	21.12	3.936		
4,400.00	4,391.78	4,405.73	4,401.29	15.50	15.45	-167.91	-27.92	-42.02	85.25	63.63	21.62	3.944		
4,500.00	4,490.81	4,505.70	4,500.52	15.87	15.81	-167.17	-32.11	-53.47	87.37	65.26	22.11	3.951		
4,600.00	4,589.83	4,605.67	4,599.74	16.25	16.17	-166.48	-36.31	-64.92	89.51	66.90	22.61	3.959		
4,700.00	4,688.86	4,705.64	4,698.97	16.63	16.53	-165.81	-40.50	-76.37	91.66	68.55	23.11	3.966		
4,800.00	4,787.89	4,805.62	4,798.19	17.01	16.90	-165.17	-44.69	-87.82	93.82	70.21	23.61	3.974		
4,900.00	4,886.91	4,905.59	4,897.42	17.39	17.27	-164.57	-48.89	-99.26	95.99	71.88	24.11	3.981		
5,000.00	4,985.94	5,005.56	4,996.64	17.78	17.64	-163.99	-53.08	-110.71	98.18	73.56	24.62	3.988		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
5,100.00	5,084.97	5,105.53	5,095.87	18.17	18.01	-163.43	-57.27	-122.16	100.37	75.25	25.12	3.995		
5,200.00	5,183.99	5,205.50	5,195.09	18.56	18.38	-162.90	-61.47	-133.61	102.57	76.94	25.63	4.002		
5,300.00	5,283.02	5,305.47	5,294.32	18.95	18.76	-162.39	-65.66	-145.06	104.78	78.64	26.14	4.008		
5,400.00	5,382.05	5,405.44	5,393.54	19.34	19.13	-161.90	-69.85	-156.50	107.00	80.35	26.65	4.015		
5,500.00	5,481.07	5,505.41	5,492.77	19.73	19.51	-161.44	-74.05	-167.95	109.22	82.06	27.16	4.021		
5,600.00	5,580.10	5,605.39	5,591.99	20.12	19.89	-160.99	-78.24	-179.40	111.46	83.78	27.68	4.027		
5,700.00	5,679.12	5,705.36	5,691.22	20.52	20.27	-160.56	-82.43	-190.85	113.69	85.50	28.19	4.033		
5,800.00	5,778.15	5,805.33	5,790.44	20.92	20.65	-160.14	-86.63	-202.30	115.94	87.23	28.71	4.039		
5,900.00	5,877.18	5,905.30	5,889.67	21.31	21.03	-159.74	-90.82	-213.74	118.19	88.96	29.23	4.044		
6,000.00	5,976.20	6,005.27	5,988.89	21.71	21.41	-159.36	-95.01	-225.19	120.45	90.70	29.74	4.049		
6,100.00	6,075.23	6,105.24	6,088.12	22.11	21.80	-158.99	-99.21	-236.64	122.71	92.44	30.26	4.055		
6,200.00	6,174.26	6,205.21	6,187.35	22.51	22.18	-158.63	-103.40	-248.09	124.98	94.19	30.79	4.060		
6,300.00	6,273.28	6,305.19	6,286.57	22.91	22.57	-158.29	-107.59	-259.54	127.25	95.94	31.31	4.064		
6,400.00	6,372.31	6,405.16	6,385.80	23.32	22.96	-157.96	-111.79	-270.98	129.52	97.69	31.83	4.069		
6,500.00	6,471.34	6,505.13	6,485.02	23.72	23.34	-157.64	-115.98	-282.43	131.80	99.45	32.35	4.074		
6,600.00	6,570.36	6,605.10	6,584.25	24.12	23.73	-157.33	-120.18	-293.88	134.09	101.21	32.88	4.078		
6,700.00	6,669.39	6,705.07	6,683.47	24.53	24.12	-157.03	-124.37	-305.33	136.37	102.97	33.40	4.082		
6,800.00	6,768.42	6,805.04	6,782.70	24.93	24.51	-156.74	-128.56	-316.78	138.66	104.73	33.93	4.087		
6,900.00	6,867.44	6,905.01	6,881.92	25.34	24.90	-156.46	-132.76	-328.22	140.96	106.50	34.46	4.091		
7,000.00	6,966.47	7,004.99	6,981.15	25.74	25.29	-156.19	-136.95	-339.67	143.26	108.27	34.99	4.095		
7,100.00	7,065.50	7,104.96	7,080.37	26.15	25.68	-155.93	-141.14	-351.12	145.56	110.04	35.52	4.098		
7,200.00	7,164.52	7,204.93	7,179.60	26.55	26.07	-155.67	-145.34	-362.57	147.86	111.82	36.05	4.102		
7,300.00	7,263.55	7,304.90	7,278.82	26.96	26.47	-155.43	-149.53	-374.02	150.17	113.59	36.58	4.106		
7,400.00	7,362.58	7,404.87	7,378.05	27.37	26.86	-155.19	-153.72	-385.46	152.48	115.37	37.11	4.109		
7,500.00	7,461.60	7,504.84	7,477.27	27.78	27.25	-154.96	-157.92	-396.91	154.79	117.15	37.64	4.113		
7,600.00	7,560.63	7,604.81	7,575.50	28.19	27.65	-154.73	-162.11	-408.36	157.10	118.93	38.17	4.116		
7,700.00	7,659.66	7,704.78	7,675.72	28.60	28.04	-154.51	-166.30	-419.81	159.42	120.72	38.70	4.119		
7,800.00	7,758.68	7,804.76	7,774.95	29.01	28.44	-154.30	-170.50	-431.26	161.74	122.50	39.24	4.122		
7,900.00	7,857.71	7,904.73	7,874.17	29.42	28.83	-154.10	-174.69	-442.70	164.06	124.29	39.77	4.125		
8,000.00	7,956.74	8,004.70	7,973.40	29.83	29.23	-153.90	-178.88	-454.15	166.38	126.08	40.31	4.128		
8,100.00	8,055.76	8,104.67	8,072.62	30.24	29.62	-153.70	-183.08	-465.60	168.71	127.87	40.84	4.131		
8,200.00	8,154.79	8,204.64	8,171.85	30.65	30.02	-153.51	-187.27	-477.05	171.04	129.66	41.38	4.134		
8,300.00	8,253.82	8,303.26	8,269.75	31.06	30.41	-153.36	-191.35	-488.18	173.51	131.59	41.92	4.139		
8,400.00	8,352.84	8,400.00	8,366.00	31.47	30.78	-153.57	-194.68	-497.27	177.67	135.22	42.45	4.186		
8,500.00	8,451.87	8,495.48	8,461.22	31.88	31.14	-154.18	-197.14	-503.99	183.93	140.99	42.94	4.284		
8,600.00	8,550.90	8,591.11	8,556.72	32.30	31.49	-155.14	-198.79	-508.49	192.33	148.93	43.39	4.432		
8,700.00	8,649.92	8,686.25	8,651.82	32.71	31.82	-156.37	-199.61	-510.72	202.91	159.09	43.82	4.631		
8,800.00	8,748.95	8,783.07	8,748.65	33.12	32.15	-157.77	-199.71	-511.01	215.47	171.23	44.24	4.870		
8,900.00	8,847.98	8,882.10	8,847.68	33.54	32.48	-159.09	-199.71	-511.01	228.43	183.73	44.71	5.110		
9,000.00	8,947.00	8,981.13	8,946.70	33.95	32.81	-160.27	-199.71	-511.01	241.50	196.33	45.17	5.346		
9,100.00	9,046.03	9,080.15	9,045.73	34.36	33.14	-161.33	-199.71	-511.01	254.66	209.02	45.65	5.579		
9,200.00	9,145.05	9,179.18	9,144.75	34.78	33.47	-162.28	-199.71	-511.01	267.90	221.78	46.12	5.809		
9,300.00	9,244.08	9,278.21	9,243.78	35.19	33.81	-163.14	-199.71	-511.01	281.20	234.60	46.60	6.034		
9,400.00	9,343.11	9,377.23	9,342.81	35.61	34.14	-163.93	-199.71	-511.01	294.56	247.48	47.08	6.256		
9,500.00	9,442.13	9,476.26	9,441.83	36.02	34.47	-164.64	-199.71	-511.01	307.97	260.40	47.57	6.475		
9,600.00	9,541.16	9,575.29	9,540.86	36.44	34.81	-165.30	-199.71	-511.01	321.42	273.37	48.05	6.689		
9,647.64	9,588.33	9,622.46	9,588.03	36.63	34.97	-165.59	-199.71	-511.01	327.84	279.56	48.28	6.790		
9,700.00	9,640.24	9,674.36	9,639.94	36.85	35.14	-165.91	-199.71	-511.01	334.56	286.02	48.54	6.893		
9,800.00	9,739.60	9,773.72	9,739.30	37.25	35.48	-166.41	-199.71	-511.01	345.50	296.47	49.03	7.047		
9,900.00	9,839.22	9,873.34	9,838.92	37.63	35.82	-166.76	-199.71	-511.01	353.92	304.40	49.52	7.147		
10,000.00	9,939.03	9,973.16	9,938.73	38.00	36.16	-167.00	-199.71	-511.01	359.81	309.79	50.02	7.194		
10,100.00	10,038.97	10,073.10	10,038.67	38.35	36.50	-167.14	-199.71	-511.01	363.15	312.64	50.51	7.190		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
10,181.03	10,120.00	10,154.12	10,119.70	38.61	36.77	89.95	-199.71	-511.01	363.99	313.09	50.90	7.151		
10,200.00	10,138.97	10,173.09	10,138.67	38.68	36.84	89.95	-199.71	-511.01	363.99	312.99	51.00	7.138		
10,300.00	10,238.97	10,273.09	10,238.67	39.00	37.18	89.95	-199.71	-511.01	363.99	312.51	51.48	7.070		
10,400.00	10,338.97	10,373.09	10,338.67	39.32	37.52	89.95	-199.71	-511.01	363.99	312.02	51.97	7.004		
10,500.00	10,438.97	10,473.09	10,438.67	39.65	37.86	89.95	-199.71	-511.01	363.99	311.54	52.45	6.939		
10,600.00	10,538.97	10,573.09	10,538.67	39.97	38.20	89.95	-199.71	-511.01	363.99	311.05	52.94	6.875		
10,700.00	10,638.97	10,673.09	10,638.67	40.30	38.54	89.95	-199.71	-511.01	363.99	310.56	53.43	6.813		
10,800.00	10,738.97	10,773.09	10,738.67	40.62	38.88	89.95	-199.71	-511.01	363.99	310.08	53.92	6.751		
10,900.00	10,838.97	10,873.09	10,838.67	40.95	39.22	89.95	-199.71	-511.01	363.99	309.59	54.40	6.691		
11,000.00	10,938.97	10,973.09	10,938.67	41.28	39.57	89.95	-199.71	-511.01	363.99	309.10	54.89	6.631		
11,100.00	11,038.97	11,073.09	11,038.67	41.60	39.91	89.95	-199.71	-511.01	363.99	308.61	55.38	6.573		
11,184.03	11,123.00	11,157.12	11,122.70	41.88	40.20	89.95	-199.71	-511.01	363.99	308.20	55.79	6.524		
11,200.00	11,138.96	11,173.09	11,138.66	41.93	40.25	90.51	-199.71	-511.01	363.99	308.12	55.87	6.515		
11,250.00	11,188.82	11,222.94	11,188.52	42.09	40.42	91.06	-199.71	-511.01	364.04	307.92	56.12	6.486		
11,300.00	11,238.18	11,272.30	11,237.88	42.24	40.59	92.27	-199.71	-511.01	364.27	307.89	56.39	6.460		
11,350.00	11,286.65	11,320.78	11,286.35	42.39	40.76	94.05	-199.71	-511.01	364.97	308.31	56.66	6.441		
11,400.00	11,333.89	11,368.01	11,333.59	42.53	40.92	96.30	-199.71	-511.01	366.54	309.59	56.95	6.436		
11,450.00	11,379.52	11,413.64	11,379.22	42.65	41.08	98.89	-199.71	-511.01	369.50	312.25	57.25	6.455		
11,500.00	11,423.19	11,461.45	11,427.02	42.76	41.24	101.87	-199.07	-511.02	374.33	316.74	57.58	6.501		
11,550.00	11,464.58	11,514.50	11,479.82	42.86	41.42	105.05	-194.12	-511.06	380.66	322.73	57.93	6.571		
11,600.00	11,503.38	11,570.62	11,534.92	42.95	41.60	108.16	-183.60	-511.16	388.27	330.06	58.21	6.670		
11,650.00	11,539.27	11,630.25	11,592.04	43.03	41.78	111.18	-166.57	-511.31	396.90	338.55	58.35	6.802		
11,700.00	11,572.00	11,693.89	11,650.69	43.09	41.95	114.09	-141.96	-511.54	406.27	347.98	58.29	6.970		
11,750.00	11,601.31	11,762.03	11,710.04	43.14	42.11	116.85	-108.58	-511.85	416.00	358.04	57.97	7.177		
11,800.00	11,626.99	11,835.11	11,768.82	43.19	42.26	119.44	-65.23	-512.24	425.69	368.32	57.37	7.420		
11,850.00	11,648.82	11,913.45	11,825.14	43.23	42.38	121.78	-10.87	-512.74	434.87	378.36	56.51	7.695		
11,900.00	11,666.66	11,997.12	11,876.51	43.27	42.49	123.80	55.08	-513.35	443.06	387.56	55.50	7.984		
11,950.00	11,680.35	12,085.81	11,919.86	43.31	42.56	125.44	132.34	-514.05	449.78	395.29	54.49	8.255		
12,000.00	11,689.81	12,178.69	11,951.92	43.36	42.65	126.60	219.41	-514.85	454.59	400.88	53.71	8.463		
12,050.00	11,694.95	12,274.42	11,969.82	43.42	42.79	127.22	313.34	-515.71	457.16	403.75	53.41	8.559		
12,094.06	11,695.87	12,352.80	11,972.71	43.49	42.97	127.30	391.60	-516.43	457.46	403.85	53.62	8.532		
12,100.00	11,695.77	12,358.75	11,972.60	43.50	42.99	127.30	397.54	-516.48	457.46	403.82	53.64	8.528		
12,200.00	11,694.02	12,458.75	11,970.68	43.72	43.30	127.28	497.52	-517.40	457.35	403.27	54.08	8.458		
12,300.00	11,692.27	12,558.75	11,968.77	44.02	43.67	127.26	597.50	-518.32	457.24	402.67	54.57	8.378		
12,400.00	11,690.52	12,658.75	11,966.85	44.40	44.11	127.25	697.47	-519.23	457.13	402.00	55.13	8.291		
12,500.00	11,688.77	12,758.75	11,964.93	44.85	44.60	127.23	797.45	-520.15	457.02	401.26	55.76	8.197		
12,600.00	11,687.02	12,858.75	11,963.02	45.37	45.14	127.22	897.43	-521.07	456.91	400.47	56.44	8.096		
12,700.00	11,685.27	12,958.75	11,961.10	45.95	45.74	127.20	997.41	-521.98	456.80	399.63	57.18	7.989		
12,800.00	11,683.52	13,058.75	11,959.19	46.58	46.39	127.18	1,097.38	-522.90	456.69	398.73	57.97	7.878		
12,900.00	11,681.78	13,158.75	11,957.27	47.27	47.08	127.17	1,197.36	-523.81	456.59	397.77	58.81	7.763		
13,000.00	11,680.03	13,258.75	11,955.36	48.00	47.82	127.15	1,297.34	-524.73	456.48	396.77	59.71	7.645		
13,100.00	11,678.28	13,358.75	11,953.44	48.78	48.61	127.14	1,397.32	-525.65	456.37	395.72	60.65	7.524		
13,200.00	11,676.53	13,458.75	11,951.52	49.60	49.44	127.12	1,497.29	-526.56	456.26	394.62	61.64	7.402		
13,300.00	11,674.78	13,558.75	11,949.61	50.46	50.30	127.10	1,597.27	-527.48	456.15	393.48	62.67	7.278		
13,400.00	11,673.03	13,658.75	11,947.69	51.36	51.21	127.09	1,697.25	-528.40	456.04	392.30	63.75	7.154		
13,500.00	11,671.28	13,758.75	11,945.78	52.30	52.15	127.07	1,797.23	-529.31	455.93	391.07	64.86	7.030		
13,600.00	11,669.53	13,858.75	11,943.86	53.28	53.13	127.06	1,897.20	-530.23	455.83	389.82	66.01	6.906		
13,700.00	11,667.78	13,958.75	11,941.95	54.28	54.14	127.04	1,997.18	-531.15	455.72	388.53	67.19	6.782		
13,800.00	11,666.04	14,058.75	11,940.03	55.32	55.18	127.02	2,097.16	-532.06	455.61	387.20	68.41	6.660		
13,900.00	11,664.29	14,158.75	11,938.11	56.38	56.24	127.01	2,197.13	-532.98	455.50	385.84	69.66	6.539		
14,000.00	11,662.54	14,258.75	11,936.20	57.48	57.34	126.99	2,297.11	-533.89	455.39	384.46	70.93	6.420		
14,100.00	11,660.79	14,358.75	11,934.28	58.59	58.46	126.98	2,397.09	-534.81	455.28	383.05	72.24	6.303		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
14,200.00	11,659.04	14,458.74	11,932.37	59.74	59.61	126.96	2,497.07	-535.73	455.18	381.61	73.57	6.187			
14,300.00	11,657.29	14,558.74	11,930.45	60.91	60.78	126.94	2,597.04	-536.64	455.07	380.15	74.92	6.074			
14,400.00	11,655.54	14,658.74	11,928.54	62.09	61.97	126.93	2,697.02	-537.56	454.96	378.66	76.30	5.963			
14,500.00	11,653.79	14,758.74	11,926.62	63.30	63.18	126.91	2,797.00	-538.48	454.85	377.15	77.70	5.854			
14,600.00	11,652.04	14,858.74	11,924.70	64.53	64.41	126.90	2,896.98	-539.39	454.74	375.63	79.12	5.748			
14,700.00	11,650.30	14,958.74	11,922.79	65.78	65.66	126.88	2,996.95	-540.31	454.63	374.08	80.55	5.644			
14,800.00	11,648.55	15,058.74	11,920.87	67.04	66.93	126.86	3,096.93	-541.23	454.53	372.52	82.01	5.542			
14,900.00	11,646.80	15,158.74	11,918.96	68.33	68.22	126.85	3,196.91	-542.14	454.42	370.94	83.48	5.443			
15,000.00	11,645.05	15,258.74	11,917.04	69.62	69.52	126.83	3,296.88	-543.06	454.31	369.34	84.97	5.347			
15,100.00	11,643.30	15,358.74	11,915.13	70.93	70.83	126.82	3,396.86	-543.97	454.20	367.73	86.47	5.252			
15,200.00	11,641.55	15,458.74	11,913.21	72.26	72.16	126.80	3,496.84	-544.89	454.09	366.10	87.99	5.161			
15,300.00	11,639.80	15,558.74	11,911.29	73.60	73.50	126.78	3,596.82	-545.81	453.99	364.47	89.52	5.071			
15,400.00	11,638.05	15,658.74	11,909.38	74.95	74.85	126.77	3,696.79	-546.72	453.88	362.82	91.06	4.984			
15,500.00	11,636.30	15,758.74	11,907.46	76.31	76.22	126.75	3,796.77	-547.64	453.77	361.15	92.62	4.899			
15,600.00	11,634.56	15,858.74	11,905.55	77.68	77.59	126.73	3,896.75	-548.56	453.66	359.48	94.18	4.817			
15,700.00	11,632.81	15,958.74	11,903.63	79.07	78.98	126.72	3,996.73	-549.47	453.56	357.80	95.76	4.737			
15,800.00	11,631.06	16,058.74	11,901.72	80.46	80.38	126.70	4,096.70	-550.39	453.45	356.11	97.34	4.658			
15,900.00	11,629.31	16,158.74	11,899.80	81.87	81.78	126.69	4,196.68	-551.30	453.34	354.41	98.93	4.582			
16,000.00	11,627.56	16,258.74	11,897.88	83.28	83.20	126.67	4,296.66	-552.22	453.23	352.70	100.53	4.508			
16,100.00	11,625.81	16,358.74	11,895.97	84.70	84.62	126.65	4,396.64	-553.14	453.13	350.98	102.14	4.436			
16,200.00	11,624.06	16,458.74	11,894.05	86.13	86.05	126.64	4,496.61	-554.05	453.02	349.26	103.76	4.366			
16,300.00	11,622.31	16,558.74	11,892.14	87.57	87.49	126.62	4,596.59	-554.97	452.91	347.53	105.38	4.298			
16,400.00	11,620.56	16,658.74	11,890.22	89.01	88.94	126.61	4,696.57	-555.89	452.80	345.79	107.01	4.231			
16,500.00	11,618.82	16,758.74	11,888.31	90.47	90.40	126.59	4,796.54	-556.80	452.70	344.05	108.64	4.167			
16,600.00	11,617.07	16,858.74	11,886.39	91.92	91.86	126.57	4,896.52	-557.72	452.59	342.31	110.28	4.104			
16,700.00	11,615.32	16,958.74	11,884.47	93.39	93.32	126.56	4,996.50	-558.64	452.48	340.55	111.93	4.043			
16,800.00	11,613.57	17,058.74	11,882.56	94.86	94.80	126.54	5,096.48	-559.55	452.37	338.79	113.58	3.983			
16,900.00	11,611.82	17,158.74	11,880.64	96.34	96.28	126.52	5,196.45	-560.47	452.27	337.03	115.23	3.925			
17,000.00	11,610.07	17,258.74	11,878.73	97.82	97.76	126.51	5,296.43	-561.38	452.16	335.27	116.89	3.868			
17,100.00	11,608.32	17,358.74	11,876.81	99.31	99.25	126.49	5,396.41	-562.30	452.05	333.50	118.55	3.813			
17,200.00	11,606.57	17,458.74	11,874.90	100.80	100.74	126.48	5,496.39	-563.22	451.94	331.73	120.22	3.759			
17,300.00	11,604.82	17,558.74	11,872.98	102.30	102.24	126.46	5,596.36	-564.13	451.84	329.95	121.89	3.707			
17,400.00	11,603.08	17,658.74	11,871.06	103.80	103.75	126.44	5,696.34	-565.05	451.73	328.17	123.56	3.656			
17,500.00	11,601.33	17,758.74	11,869.15	105.31	105.26	126.43	5,796.32	-565.97	451.62	326.39	125.23	3.606			
17,600.00	11,599.58	17,858.74	11,867.23	106.82	106.77	126.41	5,896.29	-566.88	451.52	324.61	126.91	3.558			
17,700.00	11,597.83	17,958.74	11,865.32	108.34	108.29	126.39	5,996.27	-567.80	451.41	322.82	128.59	3.510			
17,800.00	11,596.08	18,058.74	11,863.40	109.85	109.81	126.38	6,096.25	-568.72	451.30	321.03	130.27	3.464			
17,900.00	11,594.33	18,158.74	11,861.48	111.38	111.33	126.36	6,196.23	-569.63	451.19	319.24	131.95	3.419			
18,000.00	11,592.58	18,258.74	11,859.57	112.90	112.86	126.35	6,296.20	-570.55	451.09	317.45	133.64	3.375			
18,100.00	11,590.83	18,358.74	11,857.65	114.43	114.39	126.33	6,396.18	-571.46	450.98	315.66	135.32	3.333			
18,200.00	11,589.08	18,458.74	11,855.74	115.97	115.93	126.31	6,496.16	-572.38	450.87	313.86	137.01	3.291			
18,300.00	11,587.34	18,558.74	11,853.82	117.50	117.46	126.30	6,596.14	-573.30	450.77	312.07	138.70	3.250			
18,400.00	11,585.59	18,658.74	11,851.91	119.04	119.01	126.28	6,696.11	-574.21	450.66	310.27	140.39	3.210			
18,500.00	11,583.84	18,758.74	11,849.99	120.59	120.55	126.26	6,796.09	-575.13	450.55	308.48	142.08	3.171			
18,600.00	11,582.09	18,858.74	11,848.07	122.13	122.10	126.25	6,896.07	-576.05	450.45	306.68	143.77	3.133			
18,700.00	11,580.34	18,958.74	11,846.16	123.68	123.65	126.23	6,996.05	-576.96	450.34	304.88	145.46	3.096			
18,800.00	11,578.59	19,058.74	11,844.24	125.23	125.20	126.21	7,096.02	-577.88	450.23	303.08	147.15	3.060			
18,900.00	11,576.84	19,158.74	11,842.33	126.79	126.75	126.20	7,196.00	-578.80	450.13	301.29	148.84	3.024			
19,000.00	11,575.09	19,258.74	11,840.41	128.34	128.31	126.18	7,295.98	-579.71	450.02	299.49	150.53	2.990			
19,100.00	11,573.34	19,358.74	11,838.50	129.90	129.87	126.17	7,395.95	-580.63	449.91	297.69	152.22	2.956			
19,200.00	11,571.60	19,458.74	11,836.58	131.46	131.43	126.15	7,495.93	-581.54	449.81	295.89	153.91	2.922			
19,300.00	11,569.85	19,558.74	11,834.66	133.02	132.99	126.13	7,595.91	-582.46	449.70	294.10	155.60	2.890			

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	
19,400.00	11,568.10	19,658.74	11,832.75	134.59	134.56	126.12	7,695.89	-583.38	449.59	292.30	157.30	2.858		
19,500.00	11,566.35	19,758.74	11,830.83	136.15	136.13	126.10	7,795.86	-584.29	449.49	290.50	158.99	2.827		
19,600.00	11,564.60	19,858.74	11,828.92	137.72	137.70	126.08	7,895.84	-585.21	449.38	288.71	160.68	2.797		
19,700.00	11,562.85	19,958.74	11,827.00	139.29	139.27	126.07	7,995.82	-586.13	449.28	286.91	162.36	2.767		
19,800.00	11,561.10	20,058.74	11,825.09	140.87	140.84	126.05	8,095.80	-587.04	449.17	285.12	164.05	2.738		
19,900.00	11,559.35	20,158.74	11,823.17	142.44	142.42	126.03	8,195.77	-587.96	449.06	283.32	165.74	2.709		
20,000.00	11,557.60	20,258.74	11,821.25	144.02	144.00	126.02	8,295.75	-588.87	448.96	281.53	167.43	2.682		
20,100.00	11,555.86	20,358.74	11,819.34	145.59	145.58	126.00	8,395.73	-589.79	448.85	279.74	169.11	2.654		
20,200.00	11,554.11	20,458.74	11,817.42	147.17	147.16	125.98	8,495.70	-590.71	448.75	277.95	170.80	2.627		
20,300.00	11,552.36	20,558.74	11,815.51	148.76	148.74	125.97	8,595.68	-591.62	448.64	276.16	172.48	2.601		
20,400.00	11,550.61	20,658.74	11,813.59	150.34	150.32	125.95	8,695.66	-592.54	448.53	274.37	174.16	2.575		
20,500.00	11,548.86	20,758.74	11,811.68	151.92	151.91	125.93	8,795.64	-593.46	448.43	272.58	175.84	2.550		
20,600.00	11,547.11	20,858.74	11,809.76	153.51	153.49	125.92	8,895.61	-594.37	448.32	270.80	177.52	2.525		
20,700.00	11,545.36	20,958.74	11,807.84	155.09	155.08	125.90	8,995.59	-595.29	448.22	269.02	179.20	2.501		
20,800.00	11,543.61	21,058.74	11,805.93	156.68	156.67	125.89	9,095.57	-596.21	448.11	267.23	180.88	2.477		
20,900.00	11,541.86	21,158.74	11,804.01	158.27	158.26	125.87	9,195.55	-597.12	448.00	265.45	182.55	2.454		
21,000.00	11,540.12	21,258.74	11,802.10	159.86	159.85	125.85	9,295.52	-598.04	447.90	263.67	184.23	2.431		
21,100.00	11,538.37	21,358.74	11,800.18	161.45	161.44	125.84	9,395.50	-598.95	447.79	261.89	185.90	2.409		
21,200.00	11,536.62	21,458.74	11,798.27	163.05	163.04	125.82	9,495.48	-599.87	447.69	260.12	187.57	2.387		
21,300.00	11,534.87	21,558.74	11,796.35	164.64	164.63	125.80	9,595.46	-600.79	447.58	258.34	189.24	2.365		
21,400.00	11,533.12	21,658.74	11,794.43	166.24	166.23	125.79	9,695.43	-601.70	447.47	256.57	190.90	2.344		
21,500.00	11,531.37	21,758.73	11,792.52	167.83	167.83	125.77	9,795.41	-602.62	447.37	254.80	192.57	2.323		
21,600.00	11,529.62	21,858.73	11,790.60	169.43	169.42	125.75	9,895.39	-603.54	447.26	253.03	194.23	2.303		
21,700.00	11,527.87	21,958.73	11,788.69	171.03	171.02	125.74	9,995.36	-604.45	447.16	251.27	195.89	2.283		
21,800.00	11,526.12	22,058.73	11,786.77	172.63	172.62	125.72	10,095.34	-605.37	447.05	249.50	197.55	2.263		
21,868.30	11,524.93	22,127.04	11,785.46	173.72	173.72	125.71	10,163.63	-605.99	446.98	248.30	198.68	2.250		
21,874.54	11,524.82	22,129.79	11,785.41	173.82	173.76	125.71	10,166.38	-606.02	446.99	248.41	198.57	2.251		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)				
0.00	0.00	0.00	0.00	0.00	0.00	89.53	0.58	69.98	69.99						
100.00	100.00	99.00	99.00	0.13	0.12	89.53	0.58	69.98	69.98	69.81	0.18	396.389			
200.00	200.00	199.00	199.00	0.48	0.48	89.53	0.58	69.98	69.98	69.30	0.68	102.635			
300.00	300.00	299.00	299.00	0.84	0.84	89.53	0.58	69.98	69.98	68.79	1.19	58.867			
400.00	400.00	399.00	399.00	1.20	1.20	89.53	0.58	69.98	69.98	68.29	1.70	41.269			
500.00	500.00	499.00	499.00	1.56	1.56	89.53	0.58	69.98	69.98	67.78	2.20	31.771			
600.00	600.00	599.00	599.00	1.92	1.91	89.53	0.58	69.98	69.98	67.27	2.71	25.827			
700.00	700.00	699.00	699.00	2.28	2.27	89.53	0.58	69.98	69.98	66.77	3.22	21.756			
800.00	800.00	799.00	799.00	2.63	2.63	89.53	0.58	69.98	69.98	66.26	3.72	18.794			
900.00	900.00	899.00	899.00	2.99	2.99	89.53	0.58	69.98	69.98	65.75	4.23	16.542			
1,000.00	1,000.00	999.00	999.00	3.35	3.35	89.53	0.58	69.98	69.98	65.24	4.74	14.772			
1,100.00	1,100.00	1,099.00	1,099.00	3.71	3.71	89.53	0.58	69.98	69.98	64.74	5.24	13.344			
1,200.00	1,200.00	1,199.00	1,199.00	4.07	4.07	89.53	0.58	69.98	69.98	64.23	5.75	12.168			
1,300.00	1,300.00	1,299.00	1,299.00	4.43	4.42	89.53	0.58	69.98	69.98	63.72	6.26	11.182			
1,400.00	1,400.00	1,399.00	1,399.00	4.79	4.78	89.53	0.58	69.98	69.98	63.22	6.77	10.344			
1,500.00	1,500.00	1,499.00	1,499.00	5.14	5.14	89.53	0.58	69.98	69.98	62.71	7.27	9.623			
1,600.00	1,600.00	1,599.00	1,599.00	5.50	5.50	89.53	0.58	69.98	69.98	62.20	7.78	8.996			
1,700.00	1,700.00	1,699.00	1,699.00	5.86	5.86	89.53	0.58	69.98	69.98	61.70	8.29	8.446			
1,800.00	1,800.00	1,799.00	1,799.00	6.22	6.22	89.53	0.58	69.98	69.98	61.19	8.79	7.959			
1,900.00	1,900.00	1,899.00	1,899.00	6.58	6.57	89.53	0.58	69.98	69.98	60.68	9.30	7.525			
2,000.00	2,000.00	1,999.00	1,999.00	6.94	6.93	89.53	0.58	69.98	69.98	60.18	9.81	7.136			
2,100.00	2,100.00	2,099.00	2,099.00	7.29	7.29	89.53	0.58	69.98	69.98	59.67	10.31	6.785			
2,200.00	2,200.00	2,199.00	2,199.00	7.65	7.65	89.53	0.58	69.98	69.98	59.16	10.82	6.467			
2,300.00	2,300.00	2,299.00	2,299.00	8.01	8.01	89.53	0.58	69.98	69.98	58.65	11.33	6.178			
2,400.00	2,400.00	2,399.00	2,399.00	8.37	8.37	89.53	0.58	69.98	69.98	58.15	11.83	5.913			
2,500.00	2,500.00	2,499.00	2,499.00	8.73	8.73	89.53	0.58	69.98	69.98	57.64	12.34	5.670			
2,600.00	2,600.00	2,599.00	2,599.00	9.09	9.08	89.53	0.58	69.98	69.98	57.13	12.85	5.447			
2,700.00	2,700.00	2,699.00	2,699.00	9.45	9.44	89.53	0.58	69.98	69.98	56.63	13.36	5.240			
2,800.00	2,800.00	2,799.00	2,799.00	9.80	9.80	89.53	0.58	69.98	69.98	56.12	13.86	5.048			
2,900.00	2,900.00	2,899.00	2,899.00	10.16	10.16	89.53	0.58	69.98	69.98	55.61	14.37	4.870			
3,000.00	3,000.00	2,999.00	2,999.00	10.52	10.52	89.53	0.58	69.98	69.98	55.11	14.88	4.704			
3,100.00	3,100.00	3,099.00	3,099.00	10.88	10.88	89.53	0.58	69.98	69.98	54.60	15.38	4.549			
3,200.00	3,200.00	3,199.00	3,199.00	11.24	11.23	89.53	0.58	69.98	69.98	54.09	15.89	4.404 CC, ES			
3,300.00	3,299.99	3,298.99	3,298.99	11.59	11.59	-167.82	0.58	69.98	71.26	54.87	16.39	4.348			
3,400.00	3,399.91	3,398.91	3,398.91	11.92	11.95	-168.44	0.58	69.98	75.10	58.22	16.88	4.449			
3,500.00	3,499.69	3,498.69	3,498.69	12.26	12.31	-169.35	0.58	69.98	81.52	64.15	17.37	4.692			
3,600.00	3,599.27	3,598.27	3,598.27	12.61	12.67	-170.39	0.58	69.98	90.53	72.67	17.86	5.068			
3,700.00	3,698.57	3,697.57	3,697.57	12.96	13.02	-171.47	0.58	69.98	102.14	83.78	18.36	5.565			
3,733.40	3,731.67	3,730.67	3,730.67	13.07	13.14	-171.82	0.58	69.98	106.60	88.08	18.52	5.756			
3,800.00	3,797.62	3,796.62	3,796.62	13.31	13.38	-172.47	0.58	69.98	115.78	96.94	18.85	6.144			
3,900.00	3,896.65	3,895.65	3,895.65	13.66	13.73	-173.28	0.58	69.98	129.60	110.26	19.34	6.702			
4,000.00	3,995.67	3,994.67	3,994.67	14.02	14.09	-173.93	0.58	69.98	143.43	123.60	19.83	7.233			
4,100.00	4,094.70	4,093.70	4,093.70	14.39	14.44	-174.46	0.58	69.98	157.28	136.96	20.32	7.740			
4,200.00	4,193.73	4,192.73	4,192.73	14.75	14.80	-174.91	0.58	69.98	171.14	150.32	20.82	8.222			
4,300.00	4,292.75	4,291.75	4,291.75	15.12	15.15	-175.30	0.58	69.98	185.01	163.70	21.31	8.682			
4,400.00	4,391.78	4,390.78	4,390.78	15.50	15.51	-175.62	0.58	69.98	198.88	177.08	21.81	9.121			
4,500.00	4,490.81	4,489.81	4,489.81	15.87	15.86	-175.91	0.58	69.98	212.77	190.47	22.30	9.540			
4,600.00	4,589.83	4,587.38	4,587.37	16.25	16.20	-175.91	-0.32	70.41	226.94	204.16	22.78	9.962			
4,700.00	4,688.86	4,684.53	4,684.46	16.63	16.51	-175.35	-3.45	71.88	241.82	218.58	23.25	10.402			
4,800.00	4,787.89	4,781.30	4,781.05	17.01	16.83	-174.32	-8.79	74.38	257.49	233.78	23.71	10.860			
4,900.00	4,886.91	4,877.56	4,876.95	17.39	17.14	-172.93	-16.29	77.91	274.05	249.88	24.17	11.339			
5,000.00	4,985.94	4,975.20	4,974.06	17.78	17.46	-171.35	-25.47	82.22	291.38	266.74	24.64	11.825			

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	
5,100.00	5,084.97	5,073.38	5,071.70	18.17	17.79	-169.93	-34.76	86.59	308.93	283.81	25.12	12.300		
5,200.00	5,183.99	5,171.55	5,169.33	18.56	18.12	-168.66	-44.05	90.95	326.64	301.04	25.60	12.761		
5,300.00	5,283.02	5,269.73	5,266.97	18.95	18.45	-167.52	-53.33	95.32	344.49	318.41	26.08	13.210		
5,400.00	5,382.05	5,367.90	5,364.61	19.34	18.78	-166.50	-62.62	99.68	362.46	335.89	26.56	13.645		
5,500.00	5,481.07	5,466.07	5,462.24	19.73	19.12	-165.57	-71.91	104.05	380.53	353.48	27.05	14.068		
5,600.00	5,580.10	5,564.25	5,559.88	20.12	19.45	-164.72	-81.19	108.41	398.69	371.15	27.54	14.478		
5,700.00	5,679.12	5,662.42	5,657.52	20.52	19.79	-163.95	-90.48	112.78	416.92	388.90	28.03	14.875		
5,800.00	5,778.15	5,760.60	5,755.15	20.92	20.13	-163.24	-99.77	117.14	435.23	406.71	28.52	15.260		
5,900.00	5,877.18	5,858.77	5,852.79	21.31	20.48	-162.59	-109.05	121.51	453.59	424.58	29.02	15.632		
6,000.00	5,976.20	5,956.95	5,950.43	21.71	20.82	-161.99	-118.34	125.87	472.01	442.49	29.51	15.994		
6,100.00	6,075.23	6,055.12	6,048.06	22.11	21.17	-161.44	-127.63	130.24	490.47	460.46	30.01	16.344		
6,200.00	6,174.26	6,153.29	6,145.70	22.51	21.51	-160.92	-136.92	134.60	508.97	478.46	30.51	16.683		
6,300.00	6,273.28	6,251.47	6,243.34	22.91	21.86	-160.45	-146.20	138.97	527.51	496.50	31.01	17.011		
6,400.00	6,372.31	6,349.64	6,340.97	23.32	22.21	-160.00	-155.49	143.33	546.08	514.57	31.51	17.330		
6,500.00	6,471.34	6,447.82	6,438.61	23.72	22.56	-159.58	-164.78	147.70	564.69	532.67	32.01	17.638		
6,600.00	6,570.36	6,545.99	6,536.24	24.12	22.92	-159.19	-174.06	152.06	583.32	550.80	32.52	17.938		
6,700.00	6,669.39	6,647.03	6,636.75	24.53	23.28	-158.83	-183.49	156.49	601.90	568.86	33.04	18.216		
6,800.00	6,768.42	6,754.97	6,744.32	24.93	23.66	-158.64	-191.48	160.25	619.34	585.74	33.60	18.432		
6,900.00	6,867.44	6,863.51	6,852.70	25.34	24.05	-158.70	-196.74	162.72	635.24	601.09	34.15	18.600		
7,000.00	6,966.47	6,972.48	6,961.63	25.74	24.42	-158.99	-199.22	163.88	649.60	614.91	34.69	18.724		
7,100.00	7,065.50	7,075.35	7,064.50	26.15	24.78	-159.42	-199.42	163.98	662.74	627.53	35.21	18.824		
7,200.00	7,164.52	7,174.37	7,163.52	26.55	25.13	-159.84	-199.42	163.98	675.80	640.10	35.71	18.925		
7,300.00	7,263.55	7,273.40	7,262.55	26.96	25.47	-160.24	-199.42	163.98	688.90	652.69	36.21	19.024		
7,400.00	7,362.58	7,372.43	7,361.58	27.37	25.82	-160.62	-199.42	163.98	702.03	665.32	36.72	19.121		
7,500.00	7,461.60	7,471.45	7,460.60	27.78	26.17	-160.99	-199.42	163.98	715.19	677.97	37.22	19.216		
7,600.00	7,560.63	7,570.48	7,559.63	28.19	26.52	-161.35	-199.42	163.98	728.38	690.66	37.72	19.310		
7,700.00	7,659.66	7,669.51	7,658.66	28.60	26.86	-161.69	-199.42	163.98	741.59	703.37	38.22	19.401		
7,800.00	7,758.68	7,768.53	7,757.68	29.01	27.21	-162.02	-199.42	163.98	754.83	716.10	38.73	19.491		
7,900.00	7,857.71	7,867.56	7,856.71	29.42	27.56	-162.34	-199.42	163.98	768.09	728.86	39.23	19.578		
8,000.00	7,956.74	7,966.59	7,955.74	29.83	27.91	-162.65	-199.42	163.98	781.38	741.64	39.74	19.664		
8,100.00	8,055.76	8,065.61	8,054.76	30.24	28.26	-162.95	-199.42	163.98	794.69	754.45	40.24	19.749		
8,200.00	8,154.79	8,164.64	8,153.79	30.65	28.61	-163.24	-199.42	163.98	808.02	767.27	40.74	19.832		
8,300.00	8,253.82	8,263.67	8,252.82	31.06	28.95	-163.52	-199.42	163.98	821.36	780.12	41.25	19.913		
8,400.00	8,352.84	8,362.69	8,351.84	31.47	29.30	-163.79	-199.42	163.98	834.73	792.98	41.75	19.992		
8,500.00	8,451.87	8,461.72	8,450.87	31.88	29.65	-164.05	-199.42	163.98	848.12	805.86	42.26	20.070		
8,600.00	8,550.90	8,560.74	8,549.90	32.30	30.00	-164.31	-199.42	163.98	861.52	818.75	42.76	20.146		
8,700.00	8,649.92	8,659.77	8,648.92	32.71	30.35	-164.55	-199.42	163.98	874.93	831.67	43.27	20.221		
8,800.00	8,748.95	8,758.80	8,747.95	33.12	30.70	-164.79	-199.42	163.98	888.37	844.59	43.77	20.295		
8,900.00	8,847.98	8,857.82	8,846.98	33.54	31.05	-165.02	-199.42	163.98	901.81	857.54	44.28	20.367		
9,000.00	8,947.00	8,956.85	8,946.00	33.95	31.40	-165.25	-199.42	163.98	915.28	870.49	44.78	20.437		
9,100.00	9,046.03	9,055.88	9,045.03	34.36	31.75	-165.47	-199.42	163.98	928.75	883.46	45.29	20.507		
9,200.00	9,145.05	9,154.90	9,144.05	34.78	32.10	-165.68	-199.42	163.98	942.24	896.44	45.80	20.575		
9,300.00	9,244.08	9,253.93	9,243.08	35.19	32.45	-165.88	-199.42	163.98	955.74	909.44	46.30	20.641		
9,400.00	9,343.11	9,352.96	9,342.11	35.61	32.80	-166.09	-199.42	163.98	969.25	922.44	46.81	20.707		
9,500.00	9,442.13	9,451.98	9,441.13	36.02	33.15	-166.28	-199.42	163.98	982.78	935.46	47.31	20.771		
9,600.00	9,541.16	9,551.01	9,540.16	36.44	33.50	-166.47	-199.42	163.98	996.31	948.49	47.82	20.834		
9,647.64	9,588.33	9,598.18	9,587.33	36.63	33.67	-166.56	-199.42	163.98	1,002.76	954.70	48.06	20.864		
9,700.00	9,640.24	9,650.09	9,639.24	36.85	33.85	-166.67	-199.42	163.98	1,009.51	961.18	48.33	20.889		
9,800.00	9,739.60	9,749.45	9,738.60	37.25	34.20	-166.86	-199.42	163.98	1,020.47	971.64	48.83	20.897		
9,900.00	9,839.22	9,849.07	9,838.22	37.63	34.56	-167.00	-199.42	163.98	1,028.91	979.57	49.34	20.855		
10,000.00	9,939.03	9,948.88	9,938.03	38.00	34.91	-167.09	-199.42	163.98	1,034.80	984.96	49.84	20.763		
10,100.00	10,038.97	10,048.82	10,037.97	38.35	35.26	-167.14	-199.42	163.98	1,038.14	987.80	50.34	20.623		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
10,181.03	10,120.00	10,129.85	10,119.00	38.61	35.55	89.97	-199.42	163.98	1,038.98	988.24	50.74	20.476		
10,200.00	10,138.97	10,148.81	10,137.97	38.68	35.62	89.97	-199.42	163.98	1,038.98	988.15	50.83	20.439		
10,300.00	10,238.97	10,248.81	10,237.97	39.00	35.97	89.97	-199.42	163.98	1,038.98	987.66	51.32	20.244		
10,400.00	10,338.97	10,348.81	10,337.97	39.32	36.33	89.97	-199.42	163.98	1,038.98	987.17	51.81	20.052		
10,500.00	10,438.97	10,448.81	10,437.97	39.65	36.68	89.97	-199.42	163.98	1,038.98	986.67	52.31	19.864		
10,600.00	10,538.97	10,548.81	10,537.97	39.97	37.04	89.97	-199.42	163.98	1,038.98	986.18	52.80	19.679		
10,700.00	10,638.97	10,648.81	10,637.97	40.30	37.39	89.97	-199.42	163.98	1,038.98	985.69	53.29	19.497		
10,800.00	10,738.97	10,748.81	10,737.97	40.62	37.74	89.97	-199.42	163.98	1,038.98	985.20	53.78	19.319		
10,900.00	10,838.97	10,848.81	10,837.97	40.95	38.10	89.97	-199.42	163.98	1,038.98	984.71	54.27	19.144		
11,000.00	10,938.97	10,948.81	10,937.97	41.28	38.45	89.97	-199.42	163.98	1,038.98	984.21	54.77	18.971		
11,100.00	11,038.97	11,048.81	11,037.97	41.60	38.81	89.97	-199.42	163.98	1,038.98	983.72	55.26	18.802		
11,184.03	11,123.00	11,133.21	11,122.35	41.88	39.11	89.94	-198.90	163.98	1,038.98	983.30	55.67	18.662		
11,200.00	11,138.96	11,149.39	11,138.50	41.93	39.17	90.42	-197.99	163.97	1,038.97	983.22	55.75	18.636		
11,250.00	11,188.82	11,199.92	11,188.69	42.09	39.34	90.30	-192.20	163.91	1,038.96	982.97	55.99	18.556		
11,300.00	11,238.18	11,250.26	11,237.98	42.24	39.50	90.18	-182.06	163.82	1,038.95	982.73	56.22	18.481		
11,350.00	11,286.65	11,300.40	11,286.00	42.39	39.66	90.06	-167.70	163.69	1,038.94	982.51	56.43	18.410		
11,375.10	11,310.54	11,325.49	11,309.52	42.46	39.73	90.00	-158.95	163.61	1,038.94	982.40	56.54	18.376		
11,400.00	11,333.89	11,350.34	11,332.41	42.53	39.81	89.93	-149.28	163.52	1,038.94	982.30	56.64	18.343		
11,450.00	11,379.52	11,400.00	11,376.78	42.65	39.95	89.81	-127.03	163.32	1,038.95	982.11	56.84	18.279		
11,500.00	11,423.19	11,449.66	11,419.06	42.76	40.08	89.69	-101.02	163.09	1,038.96	981.93	57.03	18.219		
11,550.00	11,464.58	11,499.04	11,458.72	42.86	40.20	89.57	-71.62	162.82	1,038.97	981.77	57.20	18.162		
11,600.00	11,503.38	11,548.24	11,495.57	42.95	40.31	89.46	-39.04	162.52	1,038.99	981.61	57.38	18.108		
11,650.00	11,539.27	11,597.28	11,529.38	43.03	40.43	89.35	-3.55	162.20	1,039.01	981.46	57.55	18.055		
11,700.00	11,572.00	11,646.15	11,559.94	43.09	40.54	89.24	34.57	161.86	1,039.03	981.32	57.71	18.004		
11,750.00	11,601.31	11,694.88	11,587.06	43.14	40.66	89.14	75.03	161.49	1,039.06	981.18	57.87	17.954		
11,800.00	11,626.99	11,743.46	11,610.58	43.19	40.77	89.05	117.52	161.10	1,039.08	981.05	58.03	17.904		
11,850.00	11,648.82	11,791.91	11,630.38	43.23	40.89	88.97	161.73	160.70	1,039.11	980.91	58.20	17.855		
11,900.00	11,666.66	11,840.25	11,646.33	43.27	41.01	88.89	207.34	160.29	1,039.14	980.77	58.36	17.805		
11,950.00	11,680.35	11,888.48	11,658.36	43.31	41.13	88.82	254.03	159.87	1,039.16	980.63	58.53	17.754		
12,000.00	11,689.81	11,936.61	11,666.41	43.36	41.26	88.76	301.47	159.43	1,039.18	980.48	58.70	17.703		
12,050.00	11,694.95	11,984.67	11,670.45	43.42	41.38	88.70	349.34	159.00	1,039.20	980.33	58.87	17.652		
12,094.06	11,695.87	12,027.30	11,670.72	43.49	41.50	88.67	391.96	158.61	1,039.22	980.19	59.03	17.604		
12,100.00	11,695.77	12,033.24	11,670.62	43.50	41.51	88.67	397.91	158.56	1,039.22	980.16	59.06	17.597		
12,200.00	11,694.02	12,133.24	11,668.88	43.72	41.84	88.67	497.89	157.65	1,039.22	979.72	59.50	17.467		
12,300.00	11,692.27	12,233.24	11,667.14	44.02	42.22	88.67	597.87	156.74	1,039.22	979.19	60.02	17.314		
12,400.00	11,690.52	12,333.24	11,665.40	44.40	42.66	88.67	697.85	155.84	1,039.21	978.58	60.63	17.140		
12,500.00	11,688.77	12,433.24	11,663.66	44.85	43.15	88.67	797.83	154.93	1,039.21	977.89	61.33	16.946		
12,600.00	11,687.02	12,533.24	11,661.92	45.37	43.71	88.67	897.81	154.02	1,039.21	977.11	62.10	16.735		
12,700.00	11,685.27	12,633.24	11,660.18	45.95	44.32	88.67	997.79	153.12	1,039.21	976.26	62.95	16.508		
12,800.00	11,683.52	12,733.24	11,658.44	46.58	44.98	88.67	1,097.77	152.21	1,039.21	975.34	63.88	16.269		
12,900.00	11,681.78	12,833.24	11,656.70	47.27	45.69	88.67	1,197.75	151.30	1,039.21	974.34	64.87	16.020		
13,000.00	11,680.03	12,933.24	11,654.95	48.00	46.46	88.67	1,297.73	150.39	1,039.21	973.27	65.93	15.761		
13,100.00	11,678.28	13,033.24	11,653.21	48.78	47.26	88.67	1,397.71	149.49	1,039.21	972.15	67.06	15.496		
13,200.00	11,676.53	13,133.24	11,651.47	49.60	48.11	88.67	1,497.69	148.58	1,039.21	970.96	68.25	15.226		
13,300.00	11,674.78	13,233.24	11,649.73	50.46	49.00	88.67	1,597.67	147.67	1,039.21	969.71	69.50	14.953		
13,400.00	11,673.03	13,333.24	11,647.99	51.36	49.93	88.67	1,697.65	146.76	1,039.20	968.40	70.80	14.678		
13,500.00	11,671.28	13,433.24	11,646.25	52.30	50.89	88.67	1,797.64	145.86	1,039.20	967.05	72.15	14.402		
13,600.00	11,669.53	13,533.24	11,644.51	53.28	51.89	88.68	1,897.62	144.95	1,039.20	965.64	73.56	14.128		
13,700.00	11,667.78	13,633.24	11,642.77	54.28	52.93	88.68	1,997.60	144.04	1,039.20	964.19	75.01	13.854		
13,800.00	11,666.04	13,733.24	11,641.03	55.32	53.99	88.68	2,097.58	143.14	1,039.20	962.70	76.50	13.584		
13,900.00	11,664.29	13,833.24	11,639.29	56.38	55.08	88.68	2,197.56	142.23	1,039.20	961.16	78.04	13.317		
14,000.00	11,662.54	13,933.24	11,637.55	57.48	56.20	88.68	2,297.54	141.32	1,039.20	959.59	79.61	13.053		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,660.79	14,033.24	11,635.81	58.59	57.35	88.68	2,397.52	140.41	1,039.20	957.97	81.22	12.794		
14,200.00	11,659.04	14,133.24	11,634.07	59.74	58.52	88.68	2,497.50	139.51	1,039.20	956.33	82.87	12.540		
14,300.00	11,657.29	14,233.24	11,632.33	60.91	59.71	88.68	2,597.48	138.60	1,039.19	954.65	84.55	12.291		
14,400.00	11,655.54	14,333.24	11,630.59	62.09	60.92	88.68	2,697.46	137.69	1,039.19	952.94	86.25	12.048		
14,500.00	11,653.79	14,433.24	11,628.85	63.30	62.16	88.68	2,797.44	136.78	1,039.19	951.20	87.99	11.810		
14,600.00	11,652.04	14,533.24	11,627.11	64.53	63.41	88.68	2,897.42	135.88	1,039.19	949.44	89.76	11.578		
14,700.00	11,650.30	14,633.24	11,625.36	65.78	64.68	88.68	2,997.40	134.97	1,039.19	947.65	91.55	11.352		
14,800.00	11,648.55	14,733.24	11,623.62	67.04	65.97	88.68	3,097.38	134.06	1,039.19	945.83	93.36	11.131		
14,900.00	11,646.80	14,833.24	11,621.88	68.33	67.27	88.68	3,197.37	133.15	1,039.19	943.99	95.20	10.916		
15,000.00	11,645.05	14,933.24	11,620.14	69.62	68.59	88.68	3,297.35	132.25	1,039.19	942.13	97.05	10.707		
15,100.00	11,643.30	15,033.24	11,618.40	70.93	69.93	88.68	3,397.33	131.34	1,039.19	940.25	98.93	10.504		
15,200.00	11,641.55	15,133.24	11,616.66	72.26	71.27	88.68	3,497.31	130.43	1,039.19	938.36	100.83	10.306		
15,300.00	11,639.80	15,233.24	11,614.92	73.60	72.63	88.68	3,597.29	129.53	1,039.18	936.44	102.75	10.114		
15,400.00	11,638.05	15,333.24	11,613.18	74.95	74.00	88.68	3,697.27	128.62	1,039.18	934.51	104.68	9.927		
15,500.00	11,636.30	15,433.24	11,611.44	76.31	75.38	88.68	3,797.25	127.71	1,039.18	932.56	106.63	9.746		
15,600.00	11,634.56	15,533.24	11,609.70	77.68	76.78	88.68	3,897.23	126.80	1,039.18	930.59	108.59	9.570		
15,700.00	11,632.81	15,633.24	11,607.96	79.07	78.18	88.68	3,997.21	125.90	1,039.18	928.61	110.57	9.399		
15,800.00	11,631.06	15,733.24	11,606.22	80.46	79.59	88.69	4,097.19	124.99	1,039.18	926.62	112.56	9.232		
15,900.00	11,629.31	15,833.24	11,604.48	81.87	81.01	88.69	4,197.17	124.08	1,039.18	924.61	114.57	9.071		
16,000.00	11,627.56	15,933.24	11,602.74	83.28	82.44	88.69	4,297.15	123.17	1,039.18	922.59	116.58	8.914		
16,100.00	11,625.81	16,033.24	11,601.00	84.70	83.88	88.69	4,397.13	122.27	1,039.18	920.56	118.61	8.761		
16,200.00	11,624.06	16,133.24	11,599.26	86.13	85.33	88.69	4,497.12	121.36	1,039.17	918.52	120.65	8.613		
16,300.00	11,622.31	16,233.24	11,597.51	87.57	86.78	88.69	4,597.10	120.45	1,039.17	916.47	122.70	8.469		
16,400.00	11,620.56	16,333.24	11,595.77	89.01	88.24	88.69	4,697.08	119.55	1,039.17	914.41	124.76	8.329		
16,500.00	11,618.82	16,433.24	11,594.03	90.47	89.71	88.69	4,797.06	118.64	1,039.17	912.34	126.83	8.193		
16,600.00	11,617.07	16,533.24	11,592.29	91.92	91.18	88.69	4,897.04	117.73	1,039.17	910.26	128.91	8.061		
16,700.00	11,615.32	16,633.24	11,590.55	93.39	92.66	88.69	4,997.02	116.82	1,039.17	908.17	131.00	7.933		
16,800.00	11,613.57	16,733.24	11,588.81	94.86	94.14	88.69	5,097.00	115.92	1,039.17	906.07	133.10	7.808		
16,900.00	11,611.82	16,833.24	11,587.07	96.34	95.64	88.69	5,196.98	115.01	1,039.17	903.97	135.20	7.686		
17,000.00	11,610.07	16,933.24	11,585.33	97.82	97.13	88.69	5,296.96	114.10	1,039.17	901.85	137.31	7.568		
17,100.00	11,608.32	17,033.24	11,583.59	99.31	98.63	88.69	5,396.94	113.19	1,039.17	899.73	139.43	7.453		
17,200.00	11,606.57	17,133.24	11,581.85	100.80	100.14	88.69	5,496.92	112.29	1,039.16	897.61	141.56	7.341		
17,300.00	11,604.82	17,233.24	11,580.11	102.30	101.65	88.69	5,596.90	111.38	1,039.16	895.48	143.69	7.232		
17,400.00	11,603.08	17,333.24	11,578.37	103.80	103.16	88.69	5,696.88	110.47	1,039.16	893.34	145.83	7.126		
17,500.00	11,601.33	17,433.24	11,576.63	105.31	104.68	88.69	5,796.86	109.56	1,039.16	891.19	147.97	7.023		
17,600.00	11,599.58	17,533.24	11,574.89	106.82	106.20	88.69	5,896.85	108.66	1,039.16	889.04	150.12	6.922		
17,700.00	11,597.83	17,633.24	11,573.15	108.34	107.73	88.69	5,996.83	107.75	1,039.16	886.88	152.27	6.824		
17,800.00	11,596.08	17,733.24	11,571.41	109.85	109.26	88.69	6,096.81	106.84	1,039.16	884.72	154.44	6.729		
17,900.00	11,594.33	17,833.24	11,569.67	111.38	110.79	88.69	6,196.79	105.94	1,039.16	882.56	156.60	6.636		
18,000.00	11,592.58	17,933.24	11,567.92	112.90	112.33	88.70	6,296.77	105.03	1,039.16	880.38	158.77	6.545		
18,100.00	11,590.83	18,033.24	11,566.18	114.43	113.87	88.70	6,396.75	104.12	1,039.15	878.21	160.95	6.457		
18,200.00	11,589.08	18,133.24	11,564.44	115.97	115.41	88.70	6,496.73	103.21	1,039.15	876.03	163.13	6.370		
18,300.00	11,587.34	18,233.24	11,562.70	117.50	116.96	88.70	6,596.71	102.31	1,039.15	873.84	165.31	6.286		
18,400.00	11,585.59	18,333.24	11,560.96	119.04	118.51	88.70	6,696.69	101.40	1,039.15	871.66	167.50	6.204		
18,500.00	11,583.84	18,433.24	11,559.22	120.59	120.06	88.70	6,796.67	100.49	1,039.15	869.46	169.69	6.124		
18,600.00	11,582.09	18,533.24	11,557.48	122.13	121.61	88.70	6,896.65	99.58	1,039.15	867.27	171.88	6.046		
18,700.00	11,580.34	18,633.24	11,555.74	123.68	123.17	88.70	6,996.63	98.68	1,039.15	865.07	174.08	5.969		
18,800.00	11,578.59	18,733.24	11,554.00	125.23	124.73	88.70	7,096.61	97.77	1,039.15	862.86	176.29	5.895		
18,900.00	11,576.84	18,833.24	11,552.26	126.79	126.29	88.70	7,196.60	96.86	1,039.15	860.66	178.49	5.822		
19,000.00	11,575.09	18,933.24	11,550.52	128.34	127.85	88.70	7,296.58	95.95	1,039.15	858.44	180.70	5.751		
19,100.00	11,573.34	19,033.24	11,548.78	129.90	129.42	88.70	7,396.56	95.05	1,039.14	856.23	182.91	5.681		
19,200.00	11,571.60	19,133.24	11,547.04	131.46	130.99	88.70	7,496.54	94.14	1,039.14	854.01	185.13	5.613		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Santa Fe Fed/Zia Fed - Zia Fed Com 604H - OH - Plan #2		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	11,569.85	19,233.24	11,545.30	133.02	132.56	88.70	7,596.52	93.23	1,039.14	851.80	187.35	5.547					
19,400.00	11,568.10	19,333.24	11,543.56	134.59	134.13	88.70	7,696.50	92.33	1,039.14	849.57	189.57	5.482					
19,500.00	11,566.35	19,433.24	11,541.82	136.15	135.71	88.70	7,796.48	91.42	1,039.14	847.35	191.79	5.418					
19,600.00	11,564.60	19,533.24	11,540.08	137.72	137.28	88.70	7,896.46	90.51	1,039.14	845.12	194.02	5.356					
19,700.00	11,562.85	19,633.24	11,538.33	139.29	138.86	88.70	7,996.44	89.60	1,039.14	842.89	196.25	5.295					
19,800.00	11,561.10	19,733.24	11,536.59	140.87	140.44	88.70	8,096.42	88.70	1,039.14	840.66	198.48	5.236					
19,900.00	11,559.35	19,833.24	11,534.85	142.44	142.02	88.70	8,196.40	87.79	1,039.14	838.42	200.71	5.177					
20,000.00	11,557.60	19,933.24	11,533.11	144.02	143.60	88.70	8,296.38	86.88	1,039.13	836.19	202.95	5.120					
20,100.00	11,555.86	20,033.24	11,531.37	145.59	145.19	88.70	8,396.36	85.97	1,039.13	833.95	205.19	5.064					
20,200.00	11,554.11	20,133.24	11,529.63	147.17	146.77	88.71	8,496.34	85.07	1,039.13	831.71	207.43	5.010					
20,300.00	11,552.36	20,233.24	11,527.89	148.76	148.36	88.71	8,596.33	84.16	1,039.13	829.46	209.67	4.956					
20,400.00	11,550.61	20,333.24	11,526.15	150.34	149.95	88.71	8,696.31	83.25	1,039.13	827.22	211.91	4.904					
20,500.00	11,548.86	20,433.24	11,524.41	151.92	151.54	88.71	8,796.29	82.35	1,039.13	824.97	214.16	4.852					
20,600.00	11,547.11	20,533.24	11,522.67	153.51	153.13	88.71	8,896.27	81.44	1,039.13	822.72	216.41	4.802					
20,700.00	11,545.36	20,633.24	11,520.93	155.09	154.72	88.71	8,996.25	80.53	1,039.13	820.47	218.66	4.752					
20,800.00	11,543.61	20,733.24	11,519.19	156.68	156.31	88.71	9,096.23	79.62	1,039.13	818.22	220.91	4.704					
20,900.00	11,541.86	20,833.24	11,517.45	158.27	157.91	88.71	9,196.21	78.72	1,039.13	815.96	223.16	4.656					
21,000.00	11,540.12	20,933.24	11,515.71	159.86	159.50	88.71	9,296.19	77.81	1,039.12	813.71	225.42	4.610					
21,100.00	11,538.37	21,033.24	11,513.97	161.45	161.10	88.71	9,396.17	76.90	1,039.12	811.45	227.67	4.564					
21,200.00	11,536.62	21,133.24	11,512.23	163.05	162.70	88.71	9,496.15	75.99	1,039.12	809.19	229.93	4.519					
21,300.00	11,534.87	21,233.24	11,510.48	164.64	164.30	88.71	9,596.13	75.09	1,039.12	806.93	232.19	4.475					
21,400.00	11,533.12	21,333.24	11,508.74	166.24	165.90	88.71	9,696.11	74.18	1,039.12	804.67	234.45	4.432					
21,500.00	11,531.37	21,433.24	11,507.00	167.83	167.50	88.71	9,796.09	73.27	1,039.12	802.40	236.72	4.390					
21,600.00	11,529.62	21,533.24	11,505.26	169.43	169.10	88.71	9,896.07	72.36	1,039.12	800.14	238.98	4.348					
21,700.00	11,527.87	21,633.24	11,503.52	171.03	170.71	88.71	9,996.06	71.46	1,039.12	797.87	241.25	4.307					
21,800.00	11,526.12	21,733.24	11,501.78	172.63	172.31	88.71	10,096.04	70.55	1,039.12	795.60	243.51	4.267					
21,874.54	11,524.82	21,807.78	11,500.48	173.82	173.51	88.71	10,170.56	69.87	1,039.12	793.91	245.20	4.238 SF					

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	89.53	0.87	104.98	104.99					
100.00	100.00	98.70	98.70	0.13	0.12	89.53	0.87	104.98	104.98	104.81	0.18	595.533		
200.00	200.00	198.70	198.70	0.48	0.48	89.53	0.87	104.98	104.98	104.30	0.68	154.138		
300.00	300.00	298.70	298.70	0.84	0.84	89.53	0.87	104.98	104.98	103.80	1.19	88.366		
400.00	400.00	398.70	398.70	1.20	1.20	89.53	0.87	104.98	104.98	103.29	1.70	61.937		
500.00	500.00	498.70	498.70	1.56	1.55	89.53	0.87	104.98	104.98	102.78	2.20	47.677		
600.00	600.00	598.70	598.70	1.92	1.91	89.53	0.87	104.98	104.98	102.27	2.71	38.755		
700.00	700.00	698.70	698.70	2.28	2.27	89.53	0.87	104.98	104.98	101.77	3.22	32.645		
800.00	800.00	798.70	798.70	2.63	2.63	89.53	0.87	104.98	104.98	101.26	3.72	28.200		
900.00	900.00	898.70	898.70	2.99	2.99	89.53	0.87	104.98	104.98	100.75	4.23	24.820		
1,000.00	1,000.00	998.70	998.70	3.35	3.35	89.53	0.87	104.98	104.98	100.25	4.74	22.164		
1,100.00	1,100.00	1,098.70	1,098.70	3.71	3.71	89.53	0.87	104.98	104.98	99.74	5.24	20.021		
1,200.00	1,200.00	1,198.70	1,198.70	4.07	4.06	89.53	0.87	104.98	104.98	99.23	5.75	18.256		
1,300.00	1,300.00	1,298.70	1,298.70	4.43	4.42	89.53	0.87	104.98	104.98	98.73	6.26	16.777		
1,400.00	1,400.00	1,398.70	1,398.70	4.79	4.78	89.53	0.87	104.98	104.98	98.22	6.76	15.520		
1,500.00	1,500.00	1,498.70	1,498.70	5.14	5.14	89.53	0.87	104.98	104.98	97.71	7.27	14.438		
1,600.00	1,600.00	1,598.70	1,598.70	5.50	5.50	89.53	0.87	104.98	104.98	97.21	7.78	13.497		
1,700.00	1,700.00	1,698.70	1,698.70	5.86	5.86	89.53	0.87	104.98	104.98	96.70	8.29	12.671		
1,800.00	1,800.00	1,798.70	1,798.70	6.22	6.21	89.53	0.87	104.98	104.98	96.19	8.79	11.940		
1,900.00	1,900.00	1,898.70	1,898.70	6.58	6.57	89.53	0.87	104.98	104.98	95.68	9.30	11.289		
2,000.00	2,000.00	1,998.70	1,998.70	6.94	6.93	89.53	0.87	104.98	104.98	95.18	9.81	10.706		
2,100.00	2,100.00	2,098.70	2,098.70	7.29	7.29	89.53	0.87	104.98	104.98	94.67	10.31	10.179		
2,200.00	2,200.00	2,198.70	2,198.70	7.65	7.65	89.53	0.87	104.98	104.98	94.16	10.82	9.703		
2,300.00	2,300.00	2,298.70	2,298.70	8.01	8.01	89.53	0.87	104.98	104.98	93.66	11.33	9.268		
2,400.00	2,400.00	2,398.70	2,398.70	8.37	8.37	89.53	0.87	104.98	104.98	93.15	11.83	8.871		
2,500.00	2,500.00	2,498.70	2,498.70	8.73	8.72	89.53	0.87	104.98	104.98	92.64	12.34	8.507		
2,600.00	2,600.00	2,598.70	2,598.70	9.09	9.08	89.53	0.87	104.98	104.98	92.14	12.85	8.171		
2,700.00	2,700.00	2,698.70	2,698.70	9.45	9.44	89.53	0.87	104.98	104.98	91.63	13.35	7.861		
2,800.00	2,800.00	2,798.70	2,798.70	9.80	9.80	89.53	0.87	104.98	104.98	91.12	13.86	7.574		
2,900.00	2,900.00	2,898.70	2,898.70	10.16	10.16	89.53	0.87	104.98	104.98	90.61	14.37	7.306		
3,000.00	3,000.00	2,998.70	2,998.70	10.52	10.52	89.53	0.87	104.98	104.98	90.11	14.88	7.057		
3,100.00	3,100.00	3,098.70	3,098.70	10.88	10.87	89.53	0.87	104.98	104.98	89.60	15.38	6.825		
3,200.00	3,200.00	3,198.70	3,198.70	11.24	11.23	89.53	0.87	104.98	104.98	89.09	15.89	6.607 CC, ES		
3,300.00	3,299.99	3,296.34	3,296.33	11.59	11.57	-167.42	0.28	106.04	107.34	90.98	16.37	6.558		
3,400.00	3,399.91	3,393.61	3,393.53	11.92	11.90	-166.90	-1.52	109.27	114.48	97.66	16.82	6.804		
3,500.00	3,499.69	3,490.22	3,489.94	12.26	12.22	-166.16	-4.49	114.61	126.38	109.11	17.27	7.318		
3,600.00	3,599.27	3,587.58	3,586.95	12.61	12.55	-165.38	-8.50	121.80	142.68	124.95	17.73	8.049		
3,700.00	3,698.57	3,685.74	3,684.74	12.96	12.88	-164.94	-12.66	129.27	161.70	143.51	18.20	8.886		
3,733.40	3,731.67	3,718.42	3,717.29	13.07	13.00	-164.86	-14.05	131.76	168.61	150.25	18.36	9.186		
3,800.00	3,797.62	3,783.52	3,782.15	13.31	13.22	-164.79	-16.81	136.71	182.66	163.99	18.67	9.784		
3,900.00	3,896.65	3,881.27	3,879.53	13.66	13.56	-164.70	-20.95	144.14	203.75	184.61	19.14	10.644		
4,000.00	3,995.67	3,979.02	3,976.91	14.02	13.90	-164.64	-25.09	151.58	224.84	205.23	19.62	11.462		
4,100.00	4,094.70	4,076.77	4,074.29	14.39	14.24	-164.58	-29.23	159.01	245.94	225.84	20.09	12.240		
4,200.00	4,193.73	4,174.52	4,171.66	14.75	14.58	-164.53	-33.37	166.45	267.03	246.46	20.57	12.980		
4,300.00	4,292.75	4,272.27	4,269.04	15.12	14.93	-164.49	-37.52	173.88	288.12	267.07	21.05	13.686		
4,400.00	4,391.78	4,370.02	4,366.42	15.50	15.27	-164.45	-41.66	181.32	309.22	287.68	21.53	14.359		
4,500.00	4,490.81	4,467.77	4,463.80	15.87	15.62	-164.42	-45.80	188.75	330.31	308.29	22.02	15.002		
4,600.00	4,589.83	4,565.52	4,561.18	16.25	15.97	-164.39	-49.94	196.19	351.41	328.90	22.50	15.616		
4,700.00	4,688.86	4,663.27	4,658.56	16.63	16.32	-164.37	-54.09	203.63	372.50	349.51	22.99	16.203		
4,800.00	4,787.89	4,761.02	4,755.93	17.01	16.67	-164.35	-58.23	211.06	393.59	370.12	23.48	16.764		
4,900.00	4,886.91	4,858.77	4,853.31	17.39	17.02	-164.33	-62.37	218.50	414.69	390.72	23.97	17.302		
5,000.00	4,985.94	4,956.52	4,950.69	17.78	17.38	-164.31	-66.51	225.93	435.78	411.32	24.46	17.818		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design Santa Fe Fed/Zia Fed - Zia Fed Com 706H - OH - Plan #2													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	
5,100.00	5,084.97	5,054.27	5,048.07	18.17	17.73	-164.30	-70.65	233.37	456.88	431.93	24.95	18.312		
5,200.00	5,183.99	5,152.02	5,145.45	18.56	18.09	-164.28	-74.80	240.80	477.97	452.53	25.44	18.787		
5,300.00	5,283.02	5,249.77	5,242.83	18.95	18.44	-164.27	-78.94	248.24	499.06	473.13	25.94	19.243		
5,400.00	5,382.05	5,347.52	5,340.21	19.34	18.80	-164.26	-83.08	255.67	520.16	493.73	26.43	19.681		
5,500.00	5,481.07	5,445.27	5,437.58	19.73	19.16	-164.24	-87.22	263.11	541.25	514.33	26.92	20.102		
5,600.00	5,580.10	5,543.02	5,534.96	20.12	19.52	-164.23	-91.37	270.54	562.35	534.93	27.42	20.508		
5,700.00	5,679.12	5,640.77	5,632.34	20.52	19.88	-164.22	-95.51	277.98	583.44	555.52	27.92	20.898		
5,800.00	5,778.15	5,738.52	5,729.72	20.92	20.24	-164.22	-99.65	285.41	604.54	576.12	28.42	21.275		
5,900.00	5,877.18	5,836.27	5,827.10	21.31	20.60	-164.21	-103.79	292.85	625.63	596.72	28.91	21.638		
6,000.00	5,976.20	5,934.02	5,924.48	21.71	20.96	-164.20	-107.93	300.28	646.72	617.31	29.41	21.988		
6,100.00	6,075.23	6,031.77	6,021.86	22.11	21.32	-164.19	-112.08	307.72	667.82	637.91	29.91	22.325		
6,200.00	6,174.26	6,129.52	6,119.23	22.51	21.68	-164.19	-116.22	315.15	688.91	658.50	30.41	22.652		
6,300.00	6,273.28	6,227.27	6,216.61	22.91	22.04	-164.18	-120.36	322.59	710.01	679.09	30.91	22.967		
6,400.00	6,372.31	6,325.02	6,313.99	23.32	22.41	-164.17	-124.50	330.02	731.10	699.69	31.42	23.272		
6,500.00	6,471.34	6,422.77	6,411.37	23.72	22.77	-164.17	-128.65	337.46	752.20	720.28	31.92	23.566		
6,600.00	6,570.36	6,520.52	6,508.75	24.12	23.13	-164.16	-132.79	344.90	773.29	740.87	32.42	23.852		
6,700.00	6,669.39	6,618.27	6,606.13	24.53	23.50	-164.16	-136.93	352.33	794.39	761.46	32.92	24.128		
6,800.00	6,768.42	6,716.02	6,703.51	24.93	23.86	-164.15	-141.07	359.77	815.48	782.05	33.43	24.395		
6,900.00	6,867.44	6,813.77	6,800.88	25.34	24.23	-164.15	-145.21	367.20	836.57	802.64	33.93	24.655		
7,000.00	6,966.47	6,911.52	6,898.26	25.74	24.59	-164.14	-149.36	374.64	857.67	823.23	34.44	24.906		
7,100.00	7,065.50	7,009.27	6,995.64	26.15	24.96	-164.14	-153.50	382.07	878.76	843.82	34.94	25.150		
7,200.00	7,164.52	7,107.02	7,093.02	26.55	25.32	-164.13	-157.64	389.51	899.86	864.41	35.45	25.386		
7,300.00	7,263.55	7,204.77	7,190.40	26.96	25.69	-164.13	-161.78	396.94	920.95	885.00	35.95	25.616		
7,400.00	7,362.58	7,302.51	7,287.78	27.37	26.06	-164.13	-165.93	404.38	942.05	905.59	36.46	25.839		
7,500.00	7,461.60	7,400.26	7,385.16	27.78	26.42	-164.12	-170.07	411.81	963.14	926.18	36.97	26.055		
7,600.00	7,560.63	7,498.01	7,482.53	28.19	26.79	-164.12	-174.21	419.25	984.24	946.76	37.47	26.266		
7,700.00	7,659.66	7,595.76	7,579.91	28.60	27.16	-164.12	-178.35	426.68	1,005.33	967.35	37.98	26.470		
7,800.00	7,758.68	7,693.51	7,677.29	29.01	27.53	-164.11	-182.49	434.12	1,026.42	987.94	38.49	26.669		
7,900.00	7,857.71	7,791.26	7,774.67	29.42	27.89	-164.11	-186.64	441.55	1,047.52	1,008.52	38.99	26.863		
8,000.00	7,956.74	7,889.01	7,872.05	29.83	28.26	-164.11	-190.78	448.99	1,068.61	1,029.11	39.50	27.051		
8,100.00	8,055.76	8,009.85	7,992.51	30.24	28.71	-164.13	-195.38	457.25	1,088.99	1,048.87	40.13	27.139		
8,200.00	8,154.79	8,142.43	8,124.94	30.65	29.19	-164.25	-198.36	462.59	1,106.49	1,065.71	40.78	27.135		
8,300.00	8,253.82	8,270.02	8,252.52	31.06	29.64	-164.46	-199.13	463.98	1,120.95	1,079.58	41.38	27.092		
8,400.00	8,352.84	8,369.05	8,351.54	31.47	29.97	-164.65	-199.13	463.98	1,134.38	1,092.50	41.88	27.089		
8,500.00	8,451.87	8,468.07	8,450.57	31.88	30.31	-164.84	-199.13	463.98	1,147.82	1,105.44	42.38	27.086		
8,600.00	8,550.90	8,567.10	8,549.60	32.30	30.65	-165.02	-199.13	463.98	1,161.26	1,118.39	42.88	27.083		
8,700.00	8,649.92	8,666.12	8,648.62	32.71	30.99	-165.19	-199.13	463.98	1,174.72	1,131.35	43.38	27.081		
8,800.00	8,748.95	8,765.15	8,747.65	33.12	31.32	-165.36	-199.13	463.98	1,188.19	1,144.32	43.88	27.079		
8,900.00	8,847.98	8,864.18	8,846.68	33.54	31.66	-165.53	-199.13	463.98	1,201.68	1,157.29	44.38	27.076		
9,000.00	8,947.00	8,963.20	8,945.70	33.95	32.00	-165.69	-199.13	463.98	1,215.17	1,170.28	44.88	27.074		
9,100.00	9,046.03	9,062.23	9,044.73	34.36	32.34	-165.85	-199.13	463.98	1,228.67	1,183.28	45.38	27.072		
9,200.00	9,145.05	9,161.26	9,143.75	34.78	32.68	-166.01	-199.13	463.98	1,242.18	1,196.29	45.89	27.070		
9,300.00	9,244.08	9,260.28	9,242.78	35.19	33.02	-166.17	-199.13	463.98	1,255.69	1,209.30	46.39	27.069		
9,400.00	9,343.11	9,359.31	9,341.81	35.61	33.36	-166.32	-199.13	463.98	1,269.22	1,222.33	46.89	27.067		
9,500.00	9,442.13	9,458.34	9,440.83	36.02	33.70	-166.46	-199.13	463.98	1,282.76	1,235.36	47.39	27.065		
9,600.00	9,541.16	9,557.36	9,539.86	36.44	34.04	-166.61	-199.13	463.98	1,296.30	1,248.40	47.90	27.064		
9,647.64	9,588.33	9,604.54	9,587.03	36.63	34.20	-166.67	-199.13	463.98	1,302.75	1,254.62	48.14	27.063		
9,700.00	9,640.24	9,656.44	9,638.94	36.85	34.38	-166.77	-199.13	463.98	1,309.50	1,261.10	48.40	27.055		
9,800.00	9,739.60	9,755.80	9,738.30	37.25	34.72	-166.92	-199.13	463.98	1,320.47	1,271.57	48.90	27.002		
9,900.00	9,839.22	9,855.42	9,837.92	37.63	35.07	-167.03	-199.13	463.98	1,328.91	1,279.50	49.40	26.899		
10,000.00	9,939.03	9,955.24	9,937.73	38.00	35.41	-167.11	-199.13	463.98	1,334.80	1,284.90	49.90	26.748		
10,100.00	10,038.97	10,055.17	10,037.67	38.35	35.76	-167.15	-199.13	463.98	1,338.14	1,287.74	50.40	26.551		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	
10,181.03	10,120.00	10,136.20	10,118.70	38.61	36.04	89.96	-199.13	463.98	1,338.98	1,288.18	50.80	26.360		
10,200.00	10,138.97	10,155.17	10,137.67	38.68	36.10	89.96	-199.13	463.98	1,338.98	1,288.09	50.89	26.312		
10,300.00	10,238.97	10,255.17	10,237.67	39.00	36.45	89.96	-199.13	463.98	1,338.98	1,287.61	51.37	26.063		
10,400.00	10,338.97	10,355.17	10,337.67	39.32	36.79	89.96	-199.13	463.98	1,338.98	1,287.12	51.86	25.819		
10,500.00	10,438.97	10,455.17	10,437.67	39.65	37.14	89.96	-199.13	463.98	1,338.98	1,286.63	52.35	25.578		
10,600.00	10,538.97	10,555.17	10,537.67	39.97	37.49	89.96	-199.13	463.98	1,338.98	1,286.14	52.84	25.342		
10,700.00	10,638.97	10,655.17	10,637.67	40.30	37.83	89.96	-199.13	463.98	1,338.98	1,285.66	53.32	25.111		
10,800.00	10,738.97	10,755.17	10,737.67	40.62	38.18	89.96	-199.13	463.98	1,338.98	1,285.17	53.81	24.883		
10,900.00	10,838.97	10,855.17	10,837.67	40.95	38.53	89.96	-199.13	463.98	1,338.98	1,284.68	54.30	24.659		
11,000.00	10,938.97	10,955.17	10,937.67	41.28	38.87	89.96	-199.13	463.98	1,338.98	1,284.19	54.79	24.439		
11,100.00	11,038.97	11,055.17	11,037.67	41.60	39.22	89.96	-199.13	463.98	1,338.98	1,283.70	55.28	24.223		
11,184.03	11,123.00	11,139.20	11,121.70	41.88	39.51	89.96	-199.13	463.98	1,338.98	1,283.29	55.69	24.044		
11,200.00	11,138.96	11,155.17	11,137.66	41.93	39.57	90.49	-199.13	463.98	1,338.98	1,283.21	55.77	24.010		
11,250.00	11,188.82	11,205.02	11,187.52	42.09	39.74	90.64	-199.13	463.98	1,339.02	1,283.01	56.01	23.907		
11,300.00	11,238.18	11,254.38	11,236.88	42.24	39.91	90.96	-199.13	463.98	1,339.13	1,282.88	56.25	23.807		
11,350.00	11,286.65	11,305.24	11,287.70	42.39	40.09	91.41	-197.75	463.97	1,339.36	1,282.87	56.49	23.711		
11,400.00	11,333.89	11,357.64	11,339.74	42.53	40.27	91.87	-191.74	463.91	1,339.68	1,282.96	56.72	23.619		
11,450.00	11,379.52	11,411.19	11,392.12	42.65	40.44	92.31	-180.71	463.81	1,340.07	1,283.13	56.94	23.533		
11,500.00	11,423.19	11,465.90	11,444.34	42.76	40.60	92.74	-164.44	463.67	1,340.53	1,283.37	57.16	23.452		
11,550.00	11,464.58	11,521.81	11,495.84	42.86	40.75	93.16	-142.75	463.47	1,341.05	1,283.68	57.37	23.377		
11,600.00	11,503.38	11,578.92	11,546.02	42.95	40.90	93.55	-115.53	463.22	1,341.59	1,284.03	57.56	23.306		
11,650.00	11,539.27	11,637.22	11,594.19	43.03	41.02	93.92	-82.72	462.92	1,342.16	1,284.41	57.75	23.241		
11,700.00	11,572.00	11,696.68	11,639.62	43.09	41.14	94.26	-44.41	462.58	1,342.72	1,284.79	57.93	23.179		
11,750.00	11,601.31	11,757.23	11,681.55	43.14	41.23	94.56	-0.77	462.18	1,343.26	1,285.16	58.10	23.119		
11,800.00	11,626.99	11,818.77	11,719.21	43.19	41.30	94.83	47.87	461.74	1,343.75	1,285.48	58.27	23.060		
11,850.00	11,648.82	11,881.20	11,751.86	43.23	41.36	95.04	101.03	461.26	1,344.17	1,285.73	58.44	23.000		
11,900.00	11,666.66	11,944.35	11,778.80	43.27	41.41	95.21	158.11	460.74	1,344.52	1,285.90	58.62	22.936		
11,950.00	11,680.35	12,008.05	11,799.46	43.31	41.57	95.33	218.33	460.19	1,344.76	1,285.96	58.80	22.869		
12,000.00	11,689.81	12,072.11	11,813.36	43.36	41.74	95.40	280.83	459.62	1,344.89	1,285.90	59.00	22.796		
12,050.00	11,694.95	12,136.31	11,820.21	43.42	41.92	95.41	344.62	459.04	1,344.91	1,285.71	59.20	22.717		
12,094.06	11,695.87	12,189.01	11,820.64	43.49	42.07	95.38	397.30	458.57	1,344.85	1,285.46	59.39	22.646		
12,100.00	11,695.77	12,194.95	11,820.53	43.50	42.09	95.38	403.25	458.51	1,344.85	1,285.44	59.41	22.637		
12,200.00	11,694.02	12,294.95	11,818.79	43.72	42.42	95.38	503.23	457.60	1,344.85	1,285.00	59.85	22.471		
12,300.00	11,692.27	12,394.95	11,817.05	44.02	42.81	95.38	603.21	456.70	1,344.85	1,284.47	60.37	22.275		
12,400.00	11,690.52	12,494.95	11,815.31	44.40	43.25	95.38	703.19	455.79	1,344.85	1,283.86	60.99	22.052		
12,500.00	11,688.77	12,594.95	11,813.57	44.85	43.75	95.38	803.17	454.88	1,344.85	1,283.17	61.68	21.805		
12,600.00	11,687.02	12,694.95	11,811.83	45.37	44.31	95.38	903.15	453.97	1,344.85	1,282.40	62.45	21.535		
12,700.00	11,685.27	12,794.95	11,810.08	45.95	44.92	95.38	1,003.13	453.07	1,344.85	1,281.55	63.30	21.247		
12,800.00	11,683.52	12,894.95	11,808.34	46.58	45.58	95.38	1,103.11	452.16	1,344.85	1,280.63	64.22	20.942		
12,900.00	11,681.78	12,994.95	11,806.60	47.27	46.28	95.38	1,203.09	451.25	1,344.85	1,279.64	65.21	20.624		
13,000.00	11,680.03	13,094.95	11,804.86	48.00	47.04	95.38	1,303.07	450.34	1,344.84	1,278.58	66.27	20.295		
13,100.00	11,678.28	13,194.95	11,803.12	48.78	47.84	95.38	1,403.05	449.43	1,344.84	1,277.46	67.39	19.957		
13,200.00	11,676.53	13,294.95	11,801.38	49.60	48.68	95.38	1,503.04	448.53	1,344.84	1,276.27	68.57	19.612		
13,300.00	11,674.78	13,394.95	11,799.64	50.46	49.56	95.38	1,603.02	447.62	1,344.84	1,275.03	69.81	19.264		
13,400.00	11,673.03	13,494.95	11,797.90	51.36	50.48	95.38	1,703.00	446.71	1,344.84	1,273.74	71.11	18.913		
13,500.00	11,671.28	13,594.95	11,796.15	52.30	51.44	95.38	1,802.98	445.80	1,344.84	1,272.39	72.45	18.562		
13,600.00	11,669.53	13,694.95	11,794.41	53.28	52.43	95.38	1,902.96	444.90	1,344.84	1,271.00	73.85	18.211		
13,700.00	11,667.78	13,794.95	11,792.67	54.28	53.45	95.38	2,002.94	443.99	1,344.84	1,269.55	75.29	17.863		
13,800.00	11,666.04	13,894.95	11,790.93	55.32	54.50	95.39	2,102.92	443.08	1,344.84	1,268.07	76.77	17.517		
13,900.00	11,664.29	13,994.95	11,789.19	56.38	55.59	95.39	2,202.90	442.17	1,344.84	1,266.54	78.30	17.176		
14,000.00	11,662.54	14,094.95	11,787.45	57.48	56.70	95.39	2,302.88	441.27	1,344.84	1,264.98	79.86	16.840		
14,100.00	11,660.79	14,194.95	11,785.71	58.59	57.83	95.39	2,402.86	440.36	1,344.84	1,263.38	81.46	16.509		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
14,200.00	11,659.04	14,294.95	11,783.97	59.74	59.00	95.39	2,502.84	439.45	1,344.84	1,261.74	83.10	16.184		
14,300.00	11,657.29	14,394.95	11,782.22	60.91	60.18	95.39	2,602.82	438.54	1,344.84	1,260.07	84.77	15.865		
14,400.00	11,655.54	14,494.95	11,780.48	62.09	61.38	95.39	2,702.80	437.64	1,344.84	1,258.37	86.46	15.554		
14,500.00	11,653.79	14,594.95	11,778.74	63.30	62.61	95.39	2,802.78	436.73	1,344.84	1,256.65	88.19	15.249		
14,600.00	11,652.04	14,694.95	11,777.00	64.53	63.85	95.39	2,902.77	435.82	1,344.84	1,254.89	89.94	14.952		
14,700.00	11,650.30	14,794.95	11,775.26	65.78	65.12	95.39	3,002.75	434.91	1,344.84	1,253.11	91.72	14.662		
14,800.00	11,648.55	14,894.95	11,773.52	67.04	66.40	95.39	3,102.73	434.00	1,344.84	1,251.31	93.53	14.379		
14,900.00	11,646.80	14,994.95	11,771.78	68.33	67.69	95.39	3,202.71	433.10	1,344.84	1,249.48	95.35	14.104		
15,000.00	11,645.05	15,094.95	11,770.04	69.62	69.00	95.39	3,302.69	432.19	1,344.83	1,247.63	97.20	13.836		
15,100.00	11,643.30	15,194.95	11,768.29	70.93	70.33	95.39	3,402.67	431.28	1,344.83	1,245.77	99.07	13.575		
15,200.00	11,641.55	15,294.95	11,766.55	72.26	71.67	95.39	3,502.65	430.37	1,344.83	1,243.88	100.95	13.321		
15,300.00	11,639.80	15,394.95	11,764.81	73.60	73.02	95.39	3,602.63	429.47	1,344.83	1,241.97	102.86	13.075		
15,400.00	11,638.05	15,494.95	11,763.07	74.95	74.38	95.39	3,702.61	428.56	1,344.83	1,240.05	104.78	12.835		
15,500.00	11,636.30	15,594.95	11,761.33	76.31	75.76	95.39	3,802.59	427.65	1,344.83	1,238.11	106.72	12.602		
15,600.00	11,634.56	15,694.95	11,759.59	77.68	77.14	95.39	3,902.57	426.74	1,344.83	1,236.16	108.67	12.375		
15,700.00	11,632.81	15,794.95	11,757.85	79.07	78.54	95.39	4,002.55	425.84	1,344.83	1,234.19	110.64	12.155		
15,800.00	11,631.06	15,894.95	11,756.11	80.46	79.94	95.39	4,102.53	424.93	1,344.83	1,232.21	112.62	11.941		
15,900.00	11,629.31	15,994.95	11,754.36	81.87	81.36	95.39	4,202.52	424.02	1,344.83	1,230.22	114.61	11.734		
16,000.00	11,627.56	16,094.95	11,752.62	83.28	82.78	95.39	4,302.50	423.11	1,344.83	1,228.21	116.62	11.532		
16,100.00	11,625.81	16,194.95	11,750.88	84.70	84.22	95.39	4,402.48	422.21	1,344.83	1,226.19	118.64	11.336		
16,200.00	11,624.06	16,294.95	11,749.14	86.13	85.66	95.39	4,502.46	421.30	1,344.83	1,224.16	120.67	11.145		
16,300.00	11,622.31	16,394.95	11,747.40	87.57	87.10	95.39	4,602.44	420.39	1,344.83	1,222.12	122.71	10.960		
16,400.00	11,620.56	16,494.95	11,745.66	89.01	88.56	95.39	4,702.42	419.48	1,344.83	1,220.07	124.76	10.780		
16,500.00	11,618.82	16,594.95	11,743.92	90.47	90.02	95.39	4,802.40	418.57	1,344.83	1,218.01	126.82	10.605		
16,600.00	11,617.07	16,694.95	11,742.18	91.92	91.49	95.39	4,902.38	417.67	1,344.83	1,215.94	128.88	10.434		
16,700.00	11,615.32	16,794.95	11,740.43	93.39	92.96	95.39	5,002.36	416.76	1,344.83	1,213.86	130.96	10.269		
16,800.00	11,613.57	16,894.95	11,738.69	94.86	94.44	95.40	5,102.34	415.85	1,344.83	1,211.78	133.05	10.108		
16,900.00	11,611.82	16,994.95	11,736.95	96.34	95.93	95.40	5,202.32	414.94	1,344.83	1,209.69	135.14	9.951		
17,000.00	11,610.07	17,094.95	11,735.21	97.82	97.42	95.40	5,302.30	414.04	1,344.83	1,207.58	137.24	9.799		
17,100.00	11,608.32	17,194.95	11,733.47	99.31	98.92	95.40	5,402.28	413.13	1,344.82	1,205.48	139.35	9.651		
17,200.00	11,606.57	17,294.95	11,731.73	100.80	100.42	95.40	5,502.26	412.22	1,344.82	1,203.36	141.46	9.506		
17,300.00	11,604.82	17,394.95	11,729.99	102.30	101.92	95.40	5,602.25	411.31	1,344.82	1,201.24	143.58	9.366		
17,400.00	11,603.08	17,494.95	11,728.25	103.80	103.43	95.40	5,702.23	410.41	1,344.82	1,199.11	145.71	9.229		
17,500.00	11,601.33	17,594.95	11,726.50	105.31	104.95	95.40	5,802.21	409.50	1,344.82	1,196.98	147.85	9.096		
17,600.00	11,599.58	17,694.95	11,724.76	106.82	106.46	95.40	5,902.19	408.59	1,344.82	1,194.84	149.99	8.966		
17,700.00	11,597.83	17,794.95	11,723.02	108.34	107.99	95.40	6,002.17	407.68	1,344.82	1,192.69	152.13	8.840		
17,800.00	11,596.08	17,894.95	11,721.28	109.85	109.51	95.40	6,102.15	406.77	1,344.82	1,190.54	154.28	8.717		
17,900.00	11,594.33	17,994.95	11,719.54	111.38	111.04	95.40	6,202.13	405.87	1,344.82	1,188.39	156.44	8.597		
18,000.00	11,592.58	18,094.95	11,717.80	112.90	112.58	95.40	6,302.11	404.96	1,344.82	1,186.22	158.60	8.480		
18,100.00	11,590.83	18,194.95	11,716.06	114.43	114.11	95.40	6,402.09	404.05	1,344.82	1,184.06	160.76	8.365		
18,200.00	11,589.08	18,294.95	11,714.31	115.97	115.65	95.40	6,502.07	403.14	1,344.82	1,181.89	162.93	8.254		
18,300.00	11,587.34	18,394.95	11,712.57	117.50	117.20	95.40	6,602.05	402.24	1,344.82	1,179.72	165.10	8.145		
18,400.00	11,585.59	18,494.95	11,710.83	119.04	118.74	95.40	6,702.03	401.33	1,344.82	1,177.54	167.28	8.039		
18,500.00	11,583.84	18,594.95	11,709.09	120.59	120.29	95.40	6,802.01	400.42	1,344.82	1,175.36	169.46	7.936		
18,600.00	11,582.09	18,694.95	11,707.35	122.13	121.84	95.40	6,901.99	399.51	1,344.82	1,173.17	171.65	7.835		
18,700.00	11,580.34	18,794.95	11,705.61	123.68	123.39	95.40	7,001.98	398.61	1,344.82	1,170.98	173.83	7.736		
18,800.00	11,578.59	18,894.95	11,703.87	125.23	124.95	95.40	7,101.96	397.70	1,344.82	1,168.79	176.03	7.640		
18,900.00	11,576.84	18,994.95	11,702.13	126.79	126.51	95.40	7,201.94	396.79	1,344.82	1,166.59	178.22	7.546		
19,000.00	11,575.09	19,094.95	11,700.38	128.34	128.07	95.40	7,301.92	395.88	1,344.82	1,164.40	180.42	7.454		
19,100.00	11,573.34	19,194.95	11,698.64	129.90	129.63	95.40	7,401.90	394.98	1,344.81	1,162.19	182.62	7.364		
19,200.00	11,571.60	19,294.95	11,696.90	131.46	131.20	95.40	7,501.88	394.07	1,344.81	1,159.99	184.83	7.276		
19,300.00	11,569.85	19,394.95	11,695.16	133.02	132.77	95.40	7,601.86	393.16	1,344.81	1,157.78	187.03	7.190		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design Santa Fe Fed/Zia Fed - Zia Fed Com 706H - OH - Plan #2													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		
19,400.00	11,568.10	19,494.95	11,693.42	134.59	134.34	95.40	7,701.84	392.25	1,344.81	1,155.57	189.24	7.106		
19,500.00	11,566.35	19,594.95	11,691.68	136.15	135.91	95.40	7,801.82	391.34	1,344.81	1,153.36	191.46	7.024		
19,600.00	11,564.60	19,694.95	11,689.94	137.72	137.48	95.40	7,901.80	390.44	1,344.81	1,151.14	193.67	6.944		
19,700.00	11,562.85	19,794.95	11,688.20	139.29	139.06	95.40	8,001.78	389.53	1,344.81	1,148.92	195.89	6.865		
19,800.00	11,561.10	19,894.95	11,686.45	140.87	140.63	95.40	8,101.76	388.62	1,344.81	1,146.70	198.11	6.788		
19,900.00	11,559.35	19,994.95	11,684.71	142.44	142.21	95.41	8,201.74	387.71	1,344.81	1,144.48	200.33	6.713		
20,000.00	11,557.60	20,094.95	11,682.97	144.02	143.79	95.41	8,301.72	386.81	1,344.81	1,142.25	202.56	6.639		
20,100.00	11,555.86	20,194.95	11,681.23	145.59	145.37	95.41	8,401.71	385.90	1,344.81	1,140.02	204.79	6.567		
20,200.00	11,554.11	20,294.95	11,679.49	147.17	146.96	95.41	8,501.69	384.99	1,344.81	1,137.79	207.02	6.496		
20,300.00	11,552.36	20,394.95	11,677.75	148.76	148.54	95.41	8,601.67	384.08	1,344.81	1,135.56	209.25	6.427		
20,400.00	11,550.61	20,494.95	11,676.01	150.34	150.13	95.41	8,701.65	383.18	1,344.81	1,133.33	211.48	6.359		
20,500.00	11,548.86	20,594.95	11,674.27	151.92	151.72	95.41	8,801.63	382.27	1,344.81	1,131.09	213.72	6.292		
20,600.00	11,547.11	20,694.95	11,672.52	153.51	153.31	95.41	8,901.61	381.36	1,344.81	1,128.85	215.96	6.227		
20,700.00	11,545.36	20,794.95	11,670.78	155.09	154.90	95.41	9,001.59	380.45	1,344.81	1,126.61	218.20	6.163		
20,800.00	11,543.61	20,894.95	11,669.04	156.68	156.49	95.41	9,101.57	379.55	1,344.81	1,124.37	220.44	6.101		
20,900.00	11,541.86	20,994.95	11,667.30	158.27	158.08	95.41	9,201.55	378.64	1,344.81	1,122.13	222.68	6.039		
21,000.00	11,540.12	21,094.95	11,665.56	159.86	159.67	95.41	9,301.53	377.73	1,344.81	1,119.88	224.93	5.979		
21,100.00	11,538.37	21,194.95	11,663.82	161.45	161.27	95.41	9,401.51	376.82	1,344.81	1,117.63	227.17	5.920		
21,200.00	11,536.62	21,294.95	11,662.08	163.05	162.87	95.41	9,501.49	375.91	1,344.80	1,115.38	229.42	5.862		
21,300.00	11,534.87	21,394.95	11,660.34	164.64	164.46	95.41	9,601.47	375.01	1,344.80	1,113.14	231.67	5.805		
21,400.00	11,533.12	21,494.95	11,658.59	166.24	166.06	95.41	9,701.45	374.10	1,344.80	1,110.88	233.92	5.749		
21,500.00	11,531.37	21,594.95	11,656.85	167.83	167.66	95.41	9,801.44	373.19	1,344.80	1,108.63	236.17	5.694		
21,600.00	11,529.62	21,694.95	11,655.11	169.43	169.26	95.41	9,901.42	372.28	1,344.80	1,106.38	238.42	5.640		
21,700.00	11,527.87	21,794.95	11,653.37	171.03	170.86	95.41	10,001.40	371.38	1,344.80	1,104.12	240.68	5.588		
21,800.00	11,526.12	21,894.95	11,651.63	172.63	172.47	95.41	10,101.38	370.47	1,344.80	1,101.87	242.93	5.536		
21,874.54	11,524.82	21,969.49	11,650.33	173.82	173.66	95.41	10,175.90	369.79	1,344.80	1,100.18	244.62	5.498 SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	4.00	4.00	0.00	0.01	-83.44	233.25	-2,029.77	2,043.13					
100.00	100.00	104.00	104.00	0.13	0.16	-83.44	233.25	-2,029.77	2,043.13	2,042.93	0.20	N/A		
200.00	200.00	204.00	204.00	0.48	0.51	-83.44	233.25	-2,029.77	2,043.13	2,042.42	0.71	2,892.866		
300.00	300.00	304.00	304.00	0.84	0.87	-83.44	233.25	-2,029.77	2,043.13	2,041.91	1.21	1,684.245		
400.00	400.00	404.00	404.00	1.20	1.23	-83.44	233.25	-2,029.77	2,043.13	2,041.41	1.72	1,187.878		
500.00	500.00	504.00	504.00	1.56	1.59	-83.44	233.25	-2,029.77	2,043.13	2,040.90	2.23	917.474		
600.00	600.00	604.00	604.00	1.92	1.95	-83.44	233.25	-2,029.77	2,043.13	2,040.39	2.73	747.347		
700.00	700.00	704.00	704.00	2.28	2.31	-83.44	233.25	-2,029.77	2,043.13	2,039.89	3.24	630.443		
800.00	800.00	804.00	804.00	2.63	2.67	-83.44	233.25	-2,029.77	2,043.13	2,039.38	3.75	545.164		
900.00	900.00	904.00	904.00	2.99	3.02	-83.44	233.25	-2,029.77	2,043.13	2,038.87	4.25	480.208		
1,000.00	1,000.00	1,004.00	1,004.00	3.35	3.38	-83.44	233.25	-2,029.77	2,043.13	2,038.37	4.76	429.082		
1,100.00	1,100.00	1,104.00	1,104.00	3.71	3.74	-83.44	233.25	-2,029.77	2,043.13	2,037.86	5.27	387.795		
1,200.00	1,200.00	1,204.00	1,204.00	4.07	4.10	-83.44	233.25	-2,029.77	2,043.13	2,037.35	5.78	353.756		
1,300.00	1,300.00	1,304.00	1,304.00	4.43	4.46	-83.44	233.25	-2,029.77	2,043.13	2,036.85	6.28	325.210		
1,400.00	1,400.00	1,404.00	1,404.00	4.79	4.82	-83.44	233.25	-2,029.77	2,043.13	2,036.34	6.79	300.928		
1,500.00	1,500.00	1,504.00	1,504.00	5.14	5.17	-83.44	233.25	-2,029.77	2,043.13	2,035.83	7.30	280.019		
1,600.00	1,600.00	1,604.00	1,604.00	5.50	5.53	-83.44	233.25	-2,029.77	2,043.13	2,035.32	7.80	261.827		
1,700.00	1,700.00	1,704.00	1,704.00	5.86	5.89	-83.44	233.25	-2,029.77	2,043.13	2,034.82	8.31	245.855		
1,800.00	1,800.00	1,804.00	1,804.00	6.22	6.25	-83.44	233.25	-2,029.77	2,043.13	2,034.31	8.82	231.719		
1,900.00	1,900.00	1,904.00	1,904.00	6.58	6.61	-83.44	233.25	-2,029.77	2,043.13	2,033.80	9.32	219.121		
2,000.00	2,000.00	2,004.00	2,004.00	6.94	6.97	-83.44	233.25	-2,029.77	2,043.13	2,033.30	9.83	207.822		
2,100.00	2,100.00	2,104.00	2,104.00	7.29	7.33	-83.44	233.25	-2,029.77	2,043.13	2,032.79	10.34	197.631		
2,200.00	2,200.00	2,204.00	2,204.00	7.65	7.68	-83.44	233.25	-2,029.77	2,043.13	2,032.28	10.85	188.392		
2,300.00	2,300.00	2,304.00	2,304.00	8.01	8.04	-83.44	233.25	-2,029.77	2,043.13	2,031.78	11.35	179.979		
2,400.00	2,400.00	2,404.00	2,404.00	8.37	8.40	-83.44	233.25	-2,029.77	2,043.13	2,031.27	11.86	172.285		
2,500.00	2,500.00	2,507.39	2,507.39	8.73	8.77	-83.44	233.25	-2,029.76	2,043.12	2,030.75	12.37	165.118		
2,600.00	2,600.00	2,691.95	2,691.87	9.09	9.39	-83.51	230.31	-2,025.95	2,040.89	2,027.83	13.06	156.284		
2,700.00	2,700.00	2,875.62	2,875.02	9.45	10.01	-83.71	222.01	-2,015.13	2,034.53	2,020.81	13.72	148.301		
2,800.00	2,800.00	3,016.39	3,014.86	9.80	10.49	-83.95	212.22	-2,002.38	2,024.61	2,010.32	14.29	141.710		
2,900.00	2,900.00	3,115.64	3,113.37	10.16	10.84	-84.13	204.85	-1,992.79	2,014.20	1,999.43	14.78	136.303		
3,000.00	3,000.00	3,214.90	3,211.89	10.52	11.19	-84.31	197.49	-1,983.20	2,003.82	1,988.55	15.27	131.227		
3,100.00	3,100.00	3,314.15	3,310.40	10.88	11.54	-84.50	190.12	-1,973.60	1,993.45	1,977.69	15.76	126.454		
3,200.00	3,200.00	3,413.41	3,408.92	11.24	11.90	-84.68	182.75	-1,964.01	1,983.11	1,966.85	16.26	121.960		
3,300.00	3,299.99	3,512.55	3,507.32	11.59	12.26	18.07	175.39	-1,954.43	1,971.55	1,954.80	16.75	117.703		
3,400.00	3,399.91	3,611.42	3,605.45	11.92	12.62	17.98	168.05	-1,944.87	1,957.54	1,940.31	17.23	113.588		
3,500.00	3,499.69	3,709.95	3,703.25	12.26	12.98	17.92	160.74	-1,935.35	1,941.08	1,923.36	17.72	109.558		
3,600.00	3,599.27	3,808.08	3,800.64	12.61	13.35	17.90	153.46	-1,925.86	1,922.18	1,903.97	18.20	105.607		
3,700.00	3,698.57	3,905.73	3,897.57	12.96	13.71	17.91	146.21	-1,916.43	1,900.84	1,882.15	18.68	101.733		
3,733.40	3,731.67	3,938.22	3,929.82	13.07	13.83	17.92	143.80	-1,913.29	1,893.17	1,874.32	18.85	100.452		
3,800.00	3,797.62	4,002.96	3,994.08	13.31	14.08	17.88	138.99	-1,907.03	1,877.61	1,858.45	19.17	97.958		
3,900.00	3,896.65	4,100.17	4,090.56	13.66	14.44	17.80	131.78	-1,897.63	1,854.26	1,834.61	19.65	94.357		
4,000.00	3,995.67	4,197.38	4,187.05	14.02	14.81	17.73	124.56	-1,888.24	1,830.90	1,810.77	20.14	90.921		
4,100.00	4,094.70	4,294.59	4,283.53	14.39	15.18	17.66	117.35	-1,878.84	1,807.55	1,786.93	20.63	87.638		
4,200.00	4,193.73	4,391.79	4,380.01	14.75	15.55	17.58	110.13	-1,869.45	1,784.20	1,763.09	21.11	84.500		
4,300.00	4,292.75	4,489.00	4,476.49	15.12	15.92	17.50	102.92	-1,860.05	1,760.86	1,739.25	21.61	81.497		
4,400.00	4,391.78	4,586.21	4,572.98	15.50	16.30	17.42	95.71	-1,850.66	1,737.52	1,715.42	22.10	78.623		
4,500.00	4,490.81	4,683.42	4,669.46	15.87	16.67	17.33	88.49	-1,841.26	1,714.18	1,691.59	22.59	75.869		
4,600.00	4,589.83	4,780.62	4,765.94	16.25	17.05	17.24	81.28	-1,831.87	1,690.85	1,667.76	23.09	73.229		
4,700.00	4,688.86	4,877.83	4,862.43	16.63	17.42	17.16	74.06	-1,822.47	1,667.52	1,643.93	23.59	70.696		
4,800.00	4,787.89	4,975.04	4,958.91	17.01	17.80	17.06	66.85	-1,813.07	1,644.19	1,620.10	24.09	68.264		
4,900.00	4,886.91	5,072.24	5,055.39	17.39	18.18	16.97	59.63	-1,803.68	1,620.87	1,596.28	24.59	65.928		
5,000.00	4,985.94	5,169.45	5,151.87	17.78	18.56	16.87	52.42	-1,794.28	1,597.55	1,572.46	25.09	63.683		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
5,100.00	5,084.97	5,266.66	5,248.36	18.17	18.94	16.77	45.20	-1,784.89	1,574.23	1,548.65	25.59	61.523		
5,200.00	5,183.99	5,363.87	5,344.84	18.56	19.32	16.67	37.99	-1,775.49	1,550.92	1,524.83	26.09	59.443		
5,300.00	5,283.02	5,461.07	5,441.32	18.95	19.70	16.56	30.77	-1,766.10	1,527.62	1,501.03	26.59	57.441		
5,400.00	5,382.05	5,558.28	5,537.80	19.34	20.08	16.46	23.56	-1,756.70	1,504.32	1,477.22	27.10	55.511		
5,500.00	5,481.07	5,655.49	5,634.29	19.73	20.47	16.34	16.34	-1,747.31	1,481.03	1,453.42	27.61	53.651		
5,600.00	5,580.10	5,752.69	5,730.77	20.12	20.85	16.23	9.13	-1,737.91	1,457.74	1,429.63	28.11	51.856		
5,700.00	5,679.12	5,849.90	5,827.25	20.52	21.23	16.11	1.91	-1,728.52	1,434.46	1,405.84	28.62	50.123		
5,800.00	5,778.15	5,947.11	5,923.74	20.92	21.62	15.98	-5.30	-1,719.12	1,411.18	1,382.05	29.13	48.450		
5,900.00	5,877.18	6,044.32	6,020.22	21.31	22.00	15.85	-12.52	-1,709.73	1,387.91	1,358.27	29.64	46.833		
6,000.00	5,976.20	6,141.52	6,116.70	21.71	22.39	15.72	-19.73	-1,700.33	1,364.65	1,334.50	30.15	45.269		
6,100.00	6,075.23	6,238.73	6,213.18	22.11	22.77	15.59	-26.95	-1,690.94	1,341.39	1,310.74	30.66	43.757		
6,200.00	6,174.26	6,335.94	6,309.67	22.51	23.16	15.44	-34.16	-1,681.54	1,318.14	1,286.98	31.17	42.294		
6,300.00	6,273.28	6,433.15	6,406.15	22.91	23.55	15.30	-41.38	-1,672.15	1,294.90	1,263.22	31.68	40.878		
6,400.00	6,372.31	6,530.35	6,502.63	23.32	23.93	15.14	-48.59	-1,662.75	1,271.67	1,239.48	32.19	39.506		
6,500.00	6,471.34	6,627.56	6,599.12	23.72	24.32	14.99	-55.81	-1,653.35	1,248.45	1,215.75	32.70	38.176		
6,600.00	6,570.36	6,724.77	6,695.60	24.12	24.71	14.82	-63.02	-1,643.96	1,225.23	1,192.02	33.22	36.888		
6,700.00	6,669.39	6,821.97	6,792.08	24.53	25.10	14.65	-70.24	-1,634.56	1,202.03	1,168.30	33.73	35.638		
6,800.00	6,768.42	6,919.18	6,888.56	24.93	25.48	14.47	-77.45	-1,625.17	1,178.84	1,144.59	34.24	34.425		
6,900.00	6,867.44	7,016.39	6,985.05	25.34	25.87	14.29	-84.67	-1,615.77	1,155.65	1,120.89	34.76	33.248		
7,000.00	6,966.47	7,113.60	7,081.53	25.74	26.26	14.10	-91.88	-1,606.38	1,132.48	1,097.21	35.27	32.106		
7,100.00	7,065.50	7,210.80	7,178.01	26.15	26.65	13.90	-99.10	-1,596.98	1,109.32	1,073.53	35.79	30.996		
7,200.00	7,164.52	7,308.01	7,274.49	26.55	27.04	13.69	-106.31	-1,587.59	1,086.18	1,049.87	36.31	29.917		
7,300.00	7,263.55	7,405.22	7,370.98	26.96	27.43	13.47	-113.52	-1,578.19	1,063.05	1,026.23	36.82	28.869		
7,400.00	7,362.58	7,502.43	7,467.46	27.37	27.82	13.25	-120.74	-1,568.80	1,039.93	1,002.59	37.34	27.850		
7,500.00	7,461.60	7,599.63	7,563.94	27.78	28.21	13.01	-127.95	-1,559.40	1,016.83	978.97	37.86	26.858		
7,600.00	7,560.63	7,696.84	7,660.43	28.19	28.60	12.76	-135.17	-1,550.01	993.75	955.37	38.38	25.894		
7,700.00	7,659.66	7,794.05	7,756.91	28.60	28.99	12.50	-142.38	-1,540.61	970.69	931.79	38.90	24.955		
7,800.00	7,758.68	7,891.25	7,853.39	29.01	29.38	12.23	-149.60	-1,531.22	947.64	908.23	39.42	24.041		
7,900.00	7,857.71	7,988.46	7,949.87	29.42	29.77	11.94	-156.81	-1,521.82	924.62	884.68	39.94	23.151		
8,000.00	7,956.74	8,085.67	8,046.36	29.83	30.16	11.64	-164.03	-1,512.42	901.62	861.16	40.46	22.284		
8,100.00	8,055.76	8,182.88	8,142.84	30.24	30.56	11.33	-171.24	-1,503.03	878.65	837.66	40.98	21.440		
8,200.00	8,154.79	8,280.08	8,239.32	30.65	30.95	10.99	-178.46	-1,493.63	855.70	814.19	41.51	20.617		
8,300.00	8,253.82	8,377.29	8,335.80	31.06	31.34	10.64	-185.67	-1,484.24	832.78	790.75	42.03	19.814		
8,400.00	8,352.84	8,474.50	8,432.29	31.47	31.73	10.27	-192.89	-1,474.84	809.89	767.34	42.55	19.032		
8,500.00	8,451.87	8,570.44	8,527.52	31.88	32.12	9.88	-200.00	-1,465.58	787.05	743.96	43.08	18.269		
8,600.00	8,550.90	8,654.91	8,611.48	32.30	32.45	9.58	-205.60	-1,456.29	765.20	721.58	43.62	17.542		
8,700.00	8,649.92	8,740.08	8,696.33	32.71	32.78	9.36	-210.10	-1,447.03	743.01	700.86	44.15	16.876		
8,800.00	8,748.95	8,825.90	8,781.97	33.12	33.09	9.22	-213.46	-1,437.80	720.49	681.83	44.66	16.267		
8,900.00	8,847.98	8,912.27	8,868.26	33.54	33.40	9.18	-215.66	-1,428.60	700.63	664.47	45.16	15.713		
9,000.00	8,947.00	9,000.00	8,955.98	33.95	33.70	9.25	-216.68	-1,419.43	680.46	648.82	45.65	15.213		
9,100.00	9,046.03	9,094.05	9,050.03	34.36	34.01	9.43	-216.75	-1,410.30	660.62	634.50	46.13	14.755		
9,200.00	9,145.05	9,193.08	9,149.05	34.78	34.33	9.62	-216.75	-1,401.17	640.89	620.28	46.61	14.307		
9,300.00	9,244.08	9,292.11	9,248.08	35.19	34.64	9.83	-216.75	-1,392.04	621.17	606.07	47.10	13.867		
9,400.00	9,343.11	9,391.13	9,347.11	35.61	34.96	10.04	-216.75	-1,382.91	601.46	591.87	47.59	13.437		
9,500.00	9,442.13	9,490.16	9,446.13	36.02	35.28	10.26	-216.75	-1,373.78	581.75	577.67	48.08	13.016		
9,600.00	9,541.16	9,589.19	9,545.16	36.44	35.60	10.49	-216.75	-1,364.65	562.04	563.49	48.57	12.603		
9,647.64	9,588.33	9,636.36	9,592.33	36.63	35.76	10.61	-216.75	-1,355.52	542.33	556.74	48.80	12.409		
9,700.00	9,640.24	9,688.26	9,644.24	36.85	35.92	10.71	-216.75	-1,346.39	522.62	549.66	49.06	12.205		
9,800.00	9,739.60	9,787.62	9,743.60	37.25	36.25	10.88	-216.75	-1,337.26	502.91	538.11	49.54	11.861		
9,900.00	9,839.22	9,887.24	9,843.22	37.63	36.57	11.02	-216.75	-1,328.13	483.20	529.12	50.03	11.575		
10,000.00	9,939.03	9,987.06	9,943.03	38.00	36.90	11.12	-216.75	-1,319.00	463.49	522.70	50.52	11.346		
10,100.00	10,038.97	10,087.00	10,042.97	38.35	37.22	11.17	-216.75	-1,309.87	443.78	518.85	51.01	11.172		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
10,181.03	10,120.00	10,168.03	10,124.00	38.61	37.49	-91.69	-216.75	-1,443.77	569.02	517.62	51.40	11.071		
10,200.00	10,138.97	10,186.99	10,142.97	38.68	37.55	-91.69	-216.75	-1,443.77	569.02	517.53	51.49	11.052		
10,300.00	10,238.97	10,286.99	10,242.97	39.00	37.88	-91.69	-216.75	-1,443.77	569.02	517.05	51.96	10.951		
10,400.00	10,338.97	10,386.99	10,342.97	39.32	38.21	-91.69	-216.75	-1,443.77	569.02	516.58	52.44	10.851		
10,500.00	10,438.97	10,486.99	10,442.97	39.65	38.54	-91.69	-216.75	-1,443.77	569.02	516.10	52.92	10.753		
10,600.00	10,538.97	10,586.99	10,542.97	39.97	38.86	-91.69	-216.75	-1,443.77	569.02	515.62	53.39	10.657		
10,700.00	10,638.97	10,686.99	10,642.97	40.30	39.19	-91.69	-216.75	-1,443.77	569.02	515.14	53.87	10.562		
10,800.00	10,738.97	10,786.99	10,742.97	40.62	39.52	-91.69	-216.75	-1,443.77	569.02	514.66	54.35	10.469		
10,900.00	10,838.97	10,886.99	10,842.97	40.95	39.86	-91.69	-216.75	-1,443.77	569.02	514.18	54.83	10.377		
11,000.00	10,938.97	10,986.99	10,942.97	41.28	40.19	-91.69	-216.75	-1,443.77	569.02	513.70	55.31	10.287		
11,100.00	11,038.97	11,086.99	11,042.97	41.60	40.52	-91.69	-216.75	-1,443.77	569.02	513.22	55.79	10.199		
11,184.03	11,123.00	11,171.03	11,127.00	41.88	40.80	-91.69	-216.75	-1,443.77	569.02	512.82	56.20	10.125 CC		
11,200.00	11,138.96	11,186.99	11,142.96	41.93	40.85	-91.19	-216.75	-1,443.77	569.02	512.75	56.27	10.111		
11,250.00	11,188.82	11,236.84	11,192.82	42.09	41.02	-91.54	-216.75	-1,443.77	569.11	512.59	56.52	10.070		
11,300.00	11,238.18	11,286.20	11,242.18	42.24	41.18	-92.30	-216.75	-1,443.77	569.37	512.62	56.75	10.032		
11,350.00	11,286.65	11,335.39	11,291.36	42.39	41.34	-93.43	-216.64	-1,443.77	570.00	513.00	56.99	10.001		
11,400.00	11,333.89	11,387.45	11,343.29	42.53	41.51	-94.71	-213.24	-1,443.80	570.97	513.74	57.23	9.978		
11,450.00	11,379.52	11,440.90	11,396.07	42.65	41.67	-95.98	-204.87	-1,443.87	572.22	514.78	57.44	9.962		
11,500.00	11,423.19	11,495.82	11,449.23	42.76	41.82	-97.21	-191.19	-1,443.99	573.72	516.08	57.63	9.955		
11,550.00	11,464.58	11,552.27	11,502.26	42.86	41.95	-98.40	-171.89	-1,444.15	575.41	517.62	57.79	9.957		
11,600.00	11,503.38	11,610.30	11,554.51	42.95	42.07	-99.54	-146.71	-1,444.36	577.25	519.35	57.91	9.969		
11,650.00	11,539.27	11,669.93	11,605.27	43.03	42.17	-100.61	-115.47	-1,444.63	579.18	521.20	57.97	9.990		
11,700.00	11,572.00	11,731.14	11,653.71	43.09	42.25	-101.60	-78.10	-1,444.95	581.11	523.12	57.99	10.020		
11,750.00	11,601.31	11,793.88	11,698.94	43.14	42.32	-102.50	-34.66	-1,445.32	582.98	525.01	57.97	10.057		
11,800.00	11,626.99	11,858.07	11,740.01	43.19	42.36	-103.28	14.62	-1,445.73	584.71	526.79	57.91	10.096		
11,850.00	11,648.82	11,923.55	11,775.96	43.23	42.38	-103.94	69.31	-1,446.20	586.21	528.37	57.84	10.135		
11,900.00	11,666.66	11,990.13	11,805.88	43.27	42.38	-104.46	128.74	-1,446.70	587.44	529.67	57.77	10.168		
11,950.00	11,680.35	12,057.57	11,828.95	43.31	42.36	-104.83	192.07	-1,447.24	588.32	530.58	57.74	10.189		
12,000.00	11,689.81	12,125.57	11,844.52	43.36	42.32	-105.05	258.22	-1,447.80	588.83	531.07	57.76	10.195		
12,050.00	11,694.95	12,193.84	11,852.16	43.42	42.28	-105.10	326.01	-1,448.38	588.92	531.08	57.84	10.181		
12,094.06	11,695.87	12,248.51	11,852.63	43.49	42.24	-105.04	380.67	-1,448.84	588.73	530.75	57.98	10.155		
12,100.00	11,695.77	12,254.45	11,852.53	43.50	42.24	-105.04	386.61	-1,448.89	588.72	530.73	57.99	10.152		
12,200.00	11,694.02	12,354.45	11,850.87	43.72	42.32	-105.05	486.59	-1,449.74	588.69	530.35	58.34	10.091		
12,300.00	11,692.27	12,454.45	11,849.21	44.02	42.63	-105.06	586.57	-1,450.59	588.66	529.89	58.76	10.017		
12,400.00	11,690.52	12,554.45	11,847.55	44.40	43.00	-105.07	686.56	-1,451.44	588.62	529.35	59.27	9.930		
12,500.00	11,688.77	12,654.45	11,845.89	44.85	43.43	-105.08	786.54	-1,452.29	588.59	528.73	59.87	9.832		
12,600.00	11,687.02	12,754.45	11,844.23	45.37	43.91	-105.09	886.52	-1,453.14	588.56	528.02	60.54	9.722		
12,700.00	11,685.27	12,854.45	11,842.57	45.95	44.44	-105.10	986.50	-1,453.98	588.53	527.24	61.28	9.603		
12,800.00	11,683.52	12,954.45	11,840.91	46.58	45.02	-105.11	1,086.49	-1,454.83	588.49	526.39	62.11	9.476		
12,900.00	11,681.78	13,054.45	11,839.25	47.27	45.65	-105.12	1,186.47	-1,455.68	588.46	525.46	63.00	9.341		
13,000.00	11,680.03	13,154.45	11,837.58	48.00	46.33	-105.13	1,286.45	-1,456.53	588.43	524.47	63.95	9.201		
13,100.00	11,678.28	13,254.45	11,835.92	48.78	47.06	-105.14	1,386.43	-1,457.38	588.40	523.42	64.98	9.055		
13,200.00	11,676.53	13,354.45	11,834.26	49.60	47.83	-105.15	1,486.42	-1,458.23	588.36	522.30	66.06	8.906		
13,300.00	11,674.78	13,454.45	11,832.60	50.46	48.64	-105.16	1,586.40	-1,459.08	588.33	521.12	67.21	8.754		
13,400.00	11,673.03	13,554.45	11,830.94	51.36	49.49	-105.17	1,686.38	-1,459.93	588.30	519.89	68.40	8.600		
13,500.00	11,671.28	13,654.45	11,829.28	52.30	50.38	-105.18	1,786.36	-1,460.77	588.27	518.61	69.66	8.445		
13,600.00	11,669.53	13,754.45	11,827.62	53.28	51.31	-105.19	1,886.35	-1,461.62	588.23	517.28	70.96	8.290		
13,700.00	11,667.78	13,854.45	11,825.96	54.28	52.27	-105.20	1,986.33	-1,462.47	588.20	515.89	72.31	8.135		
13,800.00	11,666.04	13,954.45	11,824.30	55.32	53.27	-105.21	2,086.31	-1,463.32	588.17	514.47	73.70	7.981		
13,900.00	11,664.29	14,054.45	11,822.64	56.38	54.30	-105.22	2,186.29	-1,464.17	588.13	513.00	75.13	7.828		
14,000.00	11,662.54	14,154.45	11,820.98	57.48	55.36	-105.23	2,286.28	-1,465.02	588.10	511.50	76.61	7.677		
14,100.00	11,660.79	14,254.45	11,819.32	58.59	56.44	-105.24	2,386.26	-1,465.87	588.07	509.95	78.12	7.528		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
14,200.00	11,659.04	14,354.45	11,817.66	59.74	57.55	-105.25	2,486.24	-1,466.72	588.04	508.37	79.66	7.381		
14,300.00	11,657.29	14,454.45	11,816.00	60.91	58.69	-105.26	2,586.22	-1,467.57	588.01	506.76	81.24	7.238		
14,400.00	11,655.54	14,554.45	11,814.33	62.09	59.85	-105.27	2,686.21	-1,468.41	587.97	505.12	82.85	7.096		
14,500.00	11,653.79	14,654.45	11,812.67	63.30	61.03	-105.28	2,786.19	-1,469.26	587.94	503.45	84.49	6.958		
14,600.00	11,652.04	14,754.45	11,811.01	64.53	62.24	-105.29	2,886.17	-1,470.11	587.91	501.75	86.16	6.823		
14,700.00	11,650.30	14,854.45	11,809.35	65.78	63.46	-105.30	2,986.15	-1,470.96	587.88	500.02	87.85	6.692		
14,800.00	11,648.55	14,954.45	11,807.69	67.04	64.71	-105.31	3,086.14	-1,471.81	587.84	498.27	89.57	6.563		
14,900.00	11,646.80	15,054.45	11,806.03	68.33	65.97	-105.32	3,186.12	-1,472.66	587.81	496.50	91.31	6.438		
15,000.00	11,645.05	15,154.45	11,804.37	69.62	67.25	-105.33	3,286.10	-1,473.51	587.78	494.71	93.07	6.315		
15,100.00	11,643.30	15,254.45	11,802.71	70.93	68.54	-105.33	3,386.09	-1,474.36	587.75	492.89	94.85	6.196		
15,200.00	11,641.55	15,354.45	11,801.05	72.26	69.85	-105.34	3,486.07	-1,475.20	587.71	491.06	96.65	6.081		
15,300.00	11,639.80	15,454.45	11,799.39	73.60	71.17	-105.35	3,586.05	-1,476.05	587.68	489.21	98.47	5.968		
15,400.00	11,638.05	15,554.45	11,797.73	74.95	72.51	-105.36	3,686.03	-1,476.90	587.65	487.34	100.31	5.859		
15,500.00	11,636.30	15,654.45	11,796.07	76.31	73.86	-105.37	3,786.02	-1,477.75	587.62	485.46	102.16	5.752		
15,600.00	11,634.56	15,754.45	11,794.41	77.68	75.22	-105.38	3,886.00	-1,478.60	587.58	483.56	104.02	5.648		
15,700.00	11,632.81	15,854.45	11,792.74	79.07	76.59	-105.39	3,985.98	-1,479.45	587.55	481.65	105.91	5.548		
15,800.00	11,631.06	15,954.45	11,791.08	80.46	77.97	-105.40	4,085.96	-1,480.30	587.52	479.72	107.80	5.450		
15,900.00	11,629.31	16,054.45	11,789.42	81.87	79.37	-105.41	4,185.95	-1,481.15	587.49	477.78	109.71	5.355		
16,000.00	11,627.56	16,154.45	11,787.76	83.28	80.77	-105.42	4,285.93	-1,481.99	587.46	475.83	111.63	5.263		
16,100.00	11,625.81	16,254.45	11,786.10	84.70	82.18	-105.43	4,385.91	-1,482.84	587.42	473.87	113.56	5.173		
16,200.00	11,624.06	16,354.45	11,784.44	86.13	83.60	-105.44	4,485.89	-1,483.69	587.39	471.89	115.50	5.086		
16,300.00	11,622.31	16,454.45	11,782.78	87.57	85.03	-105.45	4,585.88	-1,484.54	587.36	469.91	117.45	5.001		
16,400.00	11,620.56	16,554.45	11,781.12	89.01	86.47	-105.46	4,685.86	-1,485.39	587.33	467.92	119.41	4.918		
16,500.00	11,618.82	16,654.45	11,779.46	90.47	87.91	-105.47	4,785.84	-1,486.24	587.30	465.91	121.38	4.838		
16,600.00	11,617.07	16,754.45	11,777.80	91.92	89.37	-105.48	4,885.82	-1,487.09	587.26	463.90	123.36	4.761		
16,700.00	11,615.32	16,854.45	11,776.14	93.39	90.82	-105.49	4,985.81	-1,487.94	587.23	461.88	125.35	4.685		
16,800.00	11,613.57	16,954.45	11,774.48	94.86	92.29	-105.50	5,085.79	-1,488.78	587.20	459.86	127.34	4.611		
16,900.00	11,611.82	17,054.45	11,772.82	96.34	93.76	-105.51	5,185.77	-1,489.63	587.17	457.82	129.34	4.540		
17,000.00	11,610.07	17,154.45	11,771.15	97.82	95.24	-105.52	5,285.75	-1,490.48	587.13	455.78	131.35	4.470		
17,100.00	11,608.32	17,254.45	11,769.49	99.31	96.72	-105.53	5,385.74	-1,491.33	587.10	453.74	133.37	4.402		
17,200.00	11,606.57	17,354.45	11,767.83	100.80	98.21	-105.54	5,485.72	-1,492.18	587.07	451.68	135.39	4.336		
17,300.00	11,604.82	17,454.45	11,766.17	102.30	99.70	-105.55	5,585.70	-1,493.03	587.04	449.62	137.42	4.272		
17,400.00	11,603.08	17,554.45	11,764.51	103.80	101.20	-105.56	5,685.68	-1,493.88	587.01	447.56	139.45	4.209		
17,500.00	11,601.33	17,654.45	11,762.85	105.31	102.70	-105.57	5,785.67	-1,494.73	586.98	445.49	141.49	4.149		
17,600.00	11,599.58	17,754.45	11,761.19	106.82	104.21	-105.58	5,885.65	-1,495.57	586.94	443.41	143.53	4.089		
17,700.00	11,597.83	17,854.45	11,759.53	108.34	105.72	-105.59	5,985.63	-1,496.42	586.91	441.33	145.58	4.032		
17,800.00	11,596.08	17,954.45	11,757.87	109.85	107.24	-105.60	6,085.61	-1,497.27	586.88	439.25	147.63	3.975		
17,900.00	11,594.33	18,054.45	11,756.21	111.38	108.76	-105.61	6,185.60	-1,498.12	586.85	437.16	149.69	3.920		
18,000.00	11,592.58	18,154.45	11,754.55	112.90	110.28	-105.62	6,285.58	-1,498.97	586.82	435.07	151.75	3.867		
18,100.00	11,590.83	18,254.45	11,752.89	114.43	111.81	-105.63	6,385.56	-1,499.82	586.78	432.97	153.81	3.815		
18,200.00	11,589.08	18,354.45	11,751.23	115.97	113.34	-105.64	6,485.54	-1,500.67	586.75	430.87	155.88	3.764		
18,300.00	11,587.34	18,454.45	11,749.56	117.50	114.87	-105.65	6,585.53	-1,501.52	586.72	428.77	157.95	3.715		
18,400.00	11,585.59	18,554.45	11,747.90	119.04	116.41	-105.66	6,685.51	-1,502.36	586.69	426.66	160.03	3.666		
18,500.00	11,583.84	18,654.45	11,746.24	120.59	117.95	-105.67	6,785.49	-1,503.21	586.66	424.55	162.10	3.619		
18,600.00	11,582.09	18,754.45	11,744.58	122.13	119.49	-105.68	6,885.47	-1,504.06	586.63	422.44	164.18	3.573		
18,700.00	11,580.34	18,854.45	11,742.92	123.68	121.04	-105.69	6,985.46	-1,504.91	586.59	420.33	166.27	3.528		
18,800.00	11,578.59	18,954.45	11,741.26	125.23	122.59	-105.70	7,085.44	-1,505.76	586.56	418.21	168.35	3.484		
18,900.00	11,576.84	19,054.45	11,739.60	126.79	124.14	-105.71	7,185.42	-1,506.61	586.53	416.09	170.44	3.441		
19,000.00	11,575.09	19,154.45	11,737.94	128.34	125.69	-105.72	7,285.40	-1,507.46	586.50	413.97	172.53	3.399		
19,100.00	11,573.34	19,254.45	11,736.28	129.90	127.25	-105.73	7,385.39	-1,508.31	586.47	411.84	174.63	3.358		
19,200.00	11,571.60	19,354.45	11,734.62	131.46	128.81	-105.74	7,485.37	-1,509.16	586.44	409.71	176.72	3.318		
19,300.00	11,569.85	19,454.45	11,732.96	133.02	130.37	-105.75	7,585.35	-1,510.00	586.40	407.59	178.82	3.279		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
19,400.00	11,568.10	19,554.45	11,731.30	134.59	131.93	-105.76	7,685.33	-1,510.85	586.37	405.46	180.92	3.241		
19,500.00	11,566.35	19,654.45	11,729.64	136.15	133.50	-105.77	7,785.32	-1,511.70	586.34	403.32	183.02	3.204		
19,600.00	11,564.60	19,754.45	11,727.97	137.72	135.07	-105.78	7,885.30	-1,512.55	586.31	401.19	185.12	3.167		
19,700.00	11,562.85	19,854.45	11,726.31	139.29	136.64	-105.79	7,985.28	-1,513.40	586.28	399.05	187.22	3.131		
19,800.00	11,561.10	19,954.45	11,724.65	140.87	138.21	-105.80	8,085.27	-1,514.25	586.25	396.92	189.33	3.096		
19,900.00	11,559.35	20,054.45	11,722.99	142.44	139.78	-105.81	8,185.25	-1,515.10	586.21	394.78	191.43	3.062		
20,000.00	11,557.60	20,154.45	11,721.33	144.02	141.36	-105.82	8,285.23	-1,515.95	586.18	392.64	193.54	3.029		
20,100.00	11,555.86	20,254.45	11,719.67	145.59	142.93	-105.83	8,385.21	-1,516.79	586.15	390.50	195.65	2.996		
20,200.00	11,554.11	20,354.45	11,718.01	147.17	144.51	-105.83	8,485.20	-1,517.64	586.12	388.36	197.76	2.964		
20,300.00	11,552.36	20,454.45	11,716.35	148.76	146.09	-105.84	8,585.18	-1,518.49	586.09	386.22	199.87	2.932		
20,400.00	11,550.61	20,554.45	11,714.69	150.34	147.67	-105.85	8,685.16	-1,519.34	586.06	384.08	201.98	2.902		
20,500.00	11,548.86	20,654.45	11,713.03	151.92	149.26	-105.86	8,785.14	-1,520.19	586.03	381.93	204.09	2.871		
20,600.00	11,547.11	20,754.45	11,711.37	153.51	150.84	-105.87	8,885.13	-1,521.04	585.99	379.79	206.20	2.842		
20,700.00	11,545.36	20,854.45	11,709.71	155.09	152.43	-105.88	8,985.11	-1,521.89	585.96	377.65	208.32	2.813		
20,800.00	11,543.61	20,954.45	11,708.05	156.68	154.01	-105.89	9,085.09	-1,522.74	585.93	375.50	210.43	2.784		
20,900.00	11,541.86	21,054.45	11,706.38	158.27	155.60	-105.90	9,185.07	-1,523.58	585.90	373.36	212.54	2.757		
21,000.00	11,540.12	21,154.45	11,704.72	159.86	157.19	-105.91	9,285.06	-1,524.43	585.87	371.21	214.66	2.729		
21,100.00	11,538.37	21,254.45	11,703.06	161.45	158.78	-105.92	9,385.04	-1,525.28	585.84	369.06	216.77	2.703		
21,200.00	11,536.62	21,354.45	11,701.40	163.05	160.38	-105.93	9,485.02	-1,526.13	585.81	366.92	218.89	2.676		
21,300.00	11,534.87	21,454.45	11,699.74	164.64	161.97	-105.94	9,585.00	-1,526.98	585.78	364.77	221.01	2.651		
21,400.00	11,533.12	21,554.45	11,698.08	166.24	163.56	-105.95	9,684.99	-1,527.83	585.74	362.62	223.12	2.625		
21,500.00	11,531.37	21,654.45	11,696.42	167.83	165.16	-105.96	9,784.97	-1,528.68	585.71	360.48	225.24	2.600		
21,600.00	11,529.62	21,754.45	11,694.76	169.43	166.76	-105.97	9,884.95	-1,529.53	585.68	358.33	227.35	2.576		
21,700.00	11,527.87	21,854.45	11,693.10	171.03	168.36	-105.98	9,984.93	-1,530.37	585.65	356.18	229.47	2.552		
21,800.00	11,526.12	21,954.45	11,691.44	172.63	169.95	-105.99	10,084.92	-1,531.22	585.62	354.04	231.58	2.529		
21,867.75	11,524.94	22,022.19	11,690.31	173.71	171.04	-106.00	10,152.65	-1,531.80	585.60	352.58	233.02	2.513		
21,874.54	11,524.82	22,023.56	11,690.29	173.82	171.06	-106.00	10,154.02	-1,531.81	585.62	352.51	233.11	2.512 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	1.30	1.30	0.00	0.00	-83.68	232.48	-2,099.76	2,112.59					
100.00	100.00	101.30	101.30	0.13	0.15	-83.68	232.48	-2,099.76	2,112.59	2,112.40	0.19	N/A		
200.00	200.00	201.30	201.30	0.48	0.50	-83.68	232.48	-2,099.76	2,112.59	2,111.89	0.70	3,021.240		
300.00	300.00	301.30	301.30	0.84	0.86	-83.68	232.48	-2,099.76	2,112.59	2,111.38	1.21	1,751.535		
400.00	400.00	401.30	401.30	1.20	1.22	-83.68	232.48	-2,099.76	2,112.59	2,110.88	1.71	1,233.222		
500.00	500.00	501.30	501.30	1.56	1.58	-83.68	232.48	-2,099.76	2,112.59	2,110.37	2.22	951.615		
600.00	600.00	601.30	601.30	1.92	1.94	-83.68	232.48	-2,099.76	2,112.59	2,109.86	2.73	774.708		
700.00	700.00	701.30	701.30	2.28	2.30	-83.68	232.48	-2,099.76	2,112.59	2,109.36	3.23	653.264		
800.00	800.00	801.30	801.30	2.63	2.66	-83.68	232.48	-2,099.76	2,112.59	2,108.85	3.74	564.735		
900.00	900.00	901.30	901.30	2.99	3.01	-83.68	232.48	-2,099.76	2,112.59	2,108.34	4.25	497.337		
1,000.00	1,000.00	1,001.30	1,001.30	3.35	3.37	-83.68	232.48	-2,099.76	2,112.59	2,107.84	4.75	444.311		
1,100.00	1,100.00	1,101.30	1,101.30	3.71	3.73	-83.68	232.48	-2,099.76	2,112.59	2,107.33	5.26	401.503		
1,200.00	1,200.00	1,201.30	1,201.30	4.07	4.09	-83.68	232.48	-2,099.76	2,112.59	2,106.82	5.77	366.218		
1,300.00	1,300.00	1,301.30	1,301.30	4.43	4.45	-83.68	232.48	-2,099.76	2,112.59	2,106.32	6.28	336.635		
1,400.00	1,400.00	1,401.30	1,401.30	4.79	4.81	-83.68	232.48	-2,099.76	2,112.59	2,105.81	6.78	311.473		
1,500.00	1,500.00	1,501.30	1,501.30	5.14	5.16	-83.68	232.48	-2,099.76	2,112.59	2,105.30	7.29	289.812		
1,600.00	1,600.00	1,601.30	1,601.30	5.50	5.52	-83.68	232.48	-2,099.76	2,112.59	2,104.79	7.80	270.967		
1,700.00	1,700.00	1,701.30	1,701.30	5.86	5.88	-83.68	232.48	-2,099.76	2,112.59	2,104.29	8.30	254.424		
1,800.00	1,800.00	1,801.30	1,801.30	6.22	6.24	-83.68	232.48	-2,099.76	2,112.59	2,103.78	8.81	239.784		
1,900.00	1,900.00	1,901.30	1,901.30	6.58	6.60	-83.68	232.48	-2,099.76	2,112.59	2,103.27	9.32	226.737		
2,000.00	2,000.00	2,001.30	2,001.30	6.94	6.96	-83.68	232.48	-2,099.76	2,112.59	2,102.77	9.82	215.037		
2,100.00	2,100.00	2,101.30	2,101.30	7.29	7.32	-83.68	232.48	-2,099.76	2,112.59	2,102.26	10.33	204.485		
2,200.00	2,200.00	2,201.30	2,201.30	7.65	7.67	-83.68	232.48	-2,099.76	2,112.59	2,101.75	10.84	194.921		
2,300.00	2,300.00	2,301.30	2,301.30	8.01	8.03	-83.68	232.48	-2,099.76	2,112.59	2,101.25	11.35	186.211		
2,400.00	2,400.00	2,401.30	2,401.30	8.37	8.39	-83.68	232.48	-2,099.76	2,112.59	2,100.74	11.85	178.246		
2,416.23	2,416.23	2,417.53	2,417.53	8.43	8.45	-83.68	232.48	-2,099.76	2,112.59	2,100.66	11.93	177.017		
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.74	-83.68	232.48	-2,099.76	2,112.59	2,100.24	12.36	170.980		
2,600.00	2,600.00	2,572.73	2,572.72	9.09	9.00	-83.70	232.05	-2,100.30	2,113.28	2,100.49	12.79	165.292		
2,700.00	2,700.00	2,644.47	2,644.43	9.45	9.24	-83.73	230.78	-2,101.90	2,115.30	2,102.09	13.21	160.173		
2,800.00	2,800.00	2,716.10	2,715.99	9.80	9.47	-83.80	228.68	-2,104.55	2,118.65	2,105.03	13.62	155.518		
2,900.00	2,900.00	2,800.00	2,799.69	10.16	9.75	-83.91	225.16	-2,108.98	2,123.40	2,109.33	14.07	150.911		
3,000.00	3,000.00	2,858.88	2,858.35	10.52	9.95	-84.00	222.01	-2,112.96	2,129.39	2,114.94	14.45	147.339		
3,100.00	3,100.00	2,929.91	2,929.00	10.88	10.19	-84.14	217.46	-2,118.69	2,136.78	2,121.91	14.86	143.754		
3,200.00	3,200.00	3,000.95	2,999.51	11.24	10.44	-84.30	212.09	-2,125.45	2,145.52	2,130.24	15.27	140.465		
3,300.00	3,299.99	3,100.24	3,097.95	11.59	10.78	18.30	204.03	-2,135.60	2,153.70	2,137.95	15.76	136.676		
3,400.00	3,399.91	3,199.77	3,196.63	11.92	11.13	18.07	195.96	-2,145.78	2,159.44	2,143.21	16.24	132.997		
3,500.00	3,499.69	3,299.46	3,295.48	12.26	11.49	17.87	187.87	-2,155.97	2,162.72	2,146.00	16.72	129.353		
3,600.00	3,599.27	3,399.27	3,394.43	12.61	11.85	17.70	179.77	-2,166.17	2,163.53	2,146.32	17.21	125.746		
3,700.00	3,698.57	3,499.11	3,493.41	12.96	12.21	17.57	171.67	-2,176.38	2,161.85	2,144.16	17.69	122.177		
3,733.40	3,731.67	3,532.45	3,526.47	13.07	12.34	17.53	168.97	-2,179.78	2,160.74	2,142.88	17.86	120.993		
3,800.00	3,797.62	3,598.93	3,592.38	13.31	12.58	17.45	163.58	-2,186.58	2,158.25	2,140.07	18.19	118.678		
3,900.00	3,896.65	3,698.75	3,691.34	13.66	12.95	17.32	155.48	-2,196.78	2,154.52	2,135.84	18.68	115.339		
4,000.00	3,995.67	3,798.56	3,790.31	14.02	13.32	17.20	147.38	-2,206.99	2,150.80	2,131.62	19.18	112.157		
4,100.00	4,094.70	3,898.38	3,889.27	14.39	13.70	17.07	139.28	-2,217.19	2,147.09	2,127.42	19.68	109.124		
4,200.00	4,193.73	3,998.20	3,988.24	14.75	14.08	16.94	131.18	-2,227.39	2,143.39	2,123.22	20.18	106.229		
4,300.00	4,292.75	4,098.02	4,087.20	15.12	14.46	16.82	123.09	-2,237.60	2,139.70	2,119.02	20.68	103.464		
4,400.00	4,391.78	4,197.84	4,186.17	15.50	14.84	16.69	114.99	-2,247.80	2,136.03	2,114.84	21.19	100.823		
4,500.00	4,490.81	4,297.66	4,285.13	15.87	15.22	16.56	106.89	-2,258.00	2,132.36	2,110.67	21.69	98.298		
4,600.00	4,589.83	4,397.47	4,384.10	16.25	15.61	16.43	98.79	-2,268.21	2,128.70	2,106.50	22.20	95.881		
4,700.00	4,688.86	4,497.29	4,483.06	16.63	15.99	16.30	90.69	-2,278.41	2,125.06	2,102.34	22.71	93.567		
4,800.00	4,787.89	4,597.11	4,582.03	17.01	16.38	16.17	82.60	-2,288.61	2,121.42	2,098.20	23.22	91.350		
4,900.00	4,886.91	4,696.93	4,680.99	17.39	16.77	16.04	74.50	-2,298.82	2,117.80	2,094.06	23.74	89.224		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Trinity Fed/Santa Fe Fed - Trinity 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				
5,000.00	4,985.94	4,796.75	4,779.96	17.78	17.16	15.91	66.40	-2,309.02	2,114.18	2,089.93	24.25	87.185				
5,100.00	5,084.97	4,896.57	4,878.92	18.17	17.55	15.78	58.30	-2,319.23	2,110.58	2,085.82	24.76	85.227				
5,200.00	5,183.99	4,996.38	4,977.88	18.56	17.95	15.65	50.20	-2,329.43	2,106.99	2,081.71	25.28	83.345				
5,300.00	5,283.02	5,096.20	5,076.85	18.95	18.34	15.52	42.11	-2,339.63	2,103.41	2,077.61	25.80	81.537				
5,400.00	5,382.05	5,196.02	5,175.81	19.34	18.74	15.39	34.01	-2,349.84	2,099.84	2,073.53	26.31	79.798				
5,500.00	5,481.07	5,295.84	5,274.78	19.73	19.13	15.25	25.91	-2,360.04	2,096.28	2,069.45	26.83	78.123				
5,600.00	5,580.10	5,395.66	5,373.74	20.12	19.53	15.12	17.81	-2,370.24	2,092.74	2,065.39	27.35	76.511				
5,700.00	5,679.12	5,495.48	5,472.71	20.52	19.93	14.99	9.71	-2,380.45	2,089.20	2,061.33	27.87	74.958				
5,800.00	5,778.15	5,595.29	5,571.67	20.92	20.32	14.85	1.62	-2,390.65	2,085.68	2,057.29	28.39	73.460				
5,900.00	5,877.18	5,695.11	5,670.64	21.31	20.72	14.72	-6.48	-2,400.85	2,082.17	2,053.25	28.91	72.015				
6,000.00	5,976.20	5,794.93	5,769.60	21.71	21.12	14.58	-14.58	-2,411.06	2,078.67	2,049.23	29.43	70.620				
6,100.00	6,075.23	5,894.75	5,868.57	22.11	21.52	14.45	-22.68	-2,421.26	2,075.18	2,045.22	29.96	69.273				
6,200.00	6,174.26	5,994.57	5,967.53	22.51	21.92	14.31	-30.78	-2,431.46	2,071.70	2,041.22	30.48	67.972				
6,300.00	6,273.28	6,094.39	6,066.50	22.91	22.32	14.17	-38.87	-2,441.67	2,068.24	2,037.23	31.00	66.714				
6,400.00	6,372.31	6,194.20	6,165.46	23.32	22.73	14.04	-46.97	-2,451.87	2,064.78	2,033.26	31.52	65.498				
6,500.00	6,471.34	6,294.02	6,264.43	23.72	23.13	13.90	-55.07	-2,462.07	2,061.34	2,029.29	32.05	64.320				
6,600.00	6,570.36	6,393.84	6,363.39	24.12	23.53	13.76	-63.17	-2,472.28	2,057.91	2,025.34	32.57	63.181				
6,700.00	6,669.39	6,493.66	6,462.36	24.53	23.94	13.62	-71.27	-2,482.48	2,054.49	2,021.40	33.10	62.077				
6,800.00	6,768.42	6,593.48	6,561.32	24.93	24.34	13.49	-79.37	-2,492.68	2,051.08	2,017.46	33.62	61.008				
6,900.00	6,867.44	6,693.30	6,660.29	25.34	24.74	13.35	-87.46	-2,502.89	2,047.69	2,013.55	34.14	59.971				
7,000.00	6,966.47	6,793.11	6,759.25	25.74	25.15	13.21	-95.56	-2,513.09	2,044.31	2,009.64	34.67	58.966				
7,100.00	7,065.50	6,892.93	6,858.21	26.15	25.55	13.07	-103.66	-2,523.30	2,040.94	2,005.74	35.19	57.991				
7,200.00	7,164.52	6,992.75	6,957.18	26.55	25.96	12.93	-111.76	-2,533.50	2,037.58	2,001.86	35.72	57.044				
7,300.00	7,263.55	7,092.57	7,056.14	26.96	26.36	12.79	-119.86	-2,543.70	2,034.24	1,997.99	36.24	56.125				
7,400.00	7,362.58	7,192.39	7,155.11	27.37	26.77	12.64	-127.95	-2,553.91	2,030.90	1,994.13	36.77	55.233				
7,500.00	7,461.60	7,292.21	7,254.07	27.78	27.18	12.50	-136.05	-2,564.11	2,027.58	1,990.29	37.30	54.366				
7,600.00	7,560.63	7,392.03	7,353.04	28.19	27.58	12.36	-144.15	-2,574.31	2,024.28	1,986.45	37.82	53.523				
7,700.00	7,659.66	7,491.84	7,452.00	28.60	27.99	12.22	-152.25	-2,584.52	2,020.98	1,982.63	38.35	52.703				
7,800.00	7,758.68	7,591.66	7,550.97	29.01	28.40	12.07	-160.35	-2,594.72	2,017.70	1,978.82	38.87	51.906				
7,900.00	7,857.71	7,691.48	7,649.93	29.42	28.81	11.93	-168.44	-2,604.92	2,014.43	1,975.03	39.40	51.130				
8,000.00	7,956.74	7,791.30	7,748.90	29.83	29.21	11.79	-176.54	-2,615.13	2,011.17	1,971.25	39.92	50.375				
8,100.00	8,055.76	7,891.12	7,847.86	30.24	29.62	11.64	-184.64	-2,625.33	2,007.92	1,967.47	40.45	49.640				
8,200.00	8,154.79	7,990.94	7,946.83	30.65	30.03	11.50	-192.74	-2,635.53	2,004.69	1,963.72	40.98	48.924				
8,300.00	8,253.82	8,123.07	8,077.93	31.06	30.56	11.32	-202.98	-2,648.44	2,001.11	1,959.51	41.60	48.105				
8,400.00	8,352.84	8,294.86	8,249.03	31.47	31.22	11.19	-212.39	-2,660.30	1,994.49	1,952.19	42.30	47.148				
8,500.00	8,451.87	8,465.72	8,419.72	31.88	31.83	11.20	-217.00	-2,666.10	1,984.29	1,941.34	42.95	46.202				
8,600.00	8,550.90	8,598.20	8,552.20	32.30	32.27	11.29	-217.52	-2,666.76	1,971.02	1,927.53	43.49	45.321				
8,700.00	8,649.92	8,697.23	8,651.22	32.71	32.58	11.37	-217.52	-2,666.76	1,957.37	1,913.39	43.98	44.503				
8,800.00	8,748.95	8,796.26	8,750.25	33.12	32.90	11.45	-217.52	-2,666.76	1,943.72	1,899.25	44.48	43.703				
8,900.00	8,847.98	8,895.28	8,849.28	33.54	33.22	11.53	-217.52	-2,666.76	1,930.08	1,885.11	44.97	42.920				
9,000.00	8,947.00	8,994.31	8,948.30	33.95	33.54	11.61	-217.52	-2,666.76	1,916.44	1,870.97	45.46	42.154				
9,100.00	9,046.03	9,093.33	9,047.33	34.36	33.86	11.70	-217.52	-2,666.76	1,902.80	1,856.84	45.96	41.404				
9,200.00	9,145.05	9,192.36	9,146.35	34.78	34.18	11.78	-217.52	-2,666.76	1,889.16	1,842.71	46.45	40.669				
9,300.00	9,244.08	9,291.39	9,245.38	35.19	34.50	11.87	-217.52	-2,666.76	1,875.54	1,828.59	46.95	39.949				
9,400.00	9,343.11	9,390.41	9,344.41	35.61	34.82	11.96	-217.52	-2,666.76	1,861.91	1,814.47	47.44	39.244				
9,500.00	9,442.13	9,489.44	9,443.43	36.02	35.14	12.05	-217.52	-2,666.76	1,848.29	1,800.35	47.94	38.553				
9,600.00	9,541.16	9,588.47	9,542.46	36.44	35.46	12.14	-217.52	-2,666.76	1,834.67	1,786.24	48.44	37.877				
9,647.64	9,588.33	9,635.64	9,589.63	36.63	35.61	12.18	-217.52	-2,666.76	1,828.19	1,779.51	48.68	37.559				
9,700.00	9,640.24	9,687.54	9,641.54	36.85	35.78	12.21	-217.52	-2,666.76	1,821.41	1,772.47	48.94	37.220				
9,800.00	9,739.60	9,786.90	9,740.90	37.25	36.11	12.25	-217.52	-2,666.76	1,810.40	1,760.97	49.43	36.624				
9,900.00	9,839.22	9,886.53	9,840.52	37.63	36.43	12.28	-217.52	-2,666.76	1,801.94	1,752.02	49.93	36.092				
10,000.00	9,939.03	9,986.34	9,940.33	38.00	36.76	12.30	-217.52	-2,666.76	1,796.04	1,745.62	50.42	35.623				

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
10,100.00	10,038.97	10,086.28	10,040.27	38.35	37.09	12.31	-217.52	-2,666.76	1,792.69	1,741.78	50.91	35.215		
10,181.03	10,120.00	10,167.31	10,121.30	38.61	37.36	-90.56	-217.52	-2,666.76	1,791.85	1,740.55	51.30	34.931		
10,200.00	10,138.97	10,186.27	10,140.27	38.68	37.42	-90.56	-217.52	-2,666.76	1,791.85	1,740.46	51.39	34.869		
10,300.00	10,238.97	10,286.27	10,240.27	39.00	37.75	-90.56	-217.52	-2,666.76	1,791.85	1,739.98	51.87	34.548		
10,400.00	10,338.97	10,386.27	10,340.27	39.32	38.08	-90.56	-217.52	-2,666.76	1,791.85	1,739.50	52.34	34.232		
10,500.00	10,438.97	10,486.27	10,440.27	39.65	38.41	-90.56	-217.52	-2,666.76	1,791.85	1,739.02	52.82	33.921		
10,600.00	10,538.97	10,586.27	10,540.27	39.97	38.74	-90.56	-217.52	-2,666.76	1,791.85	1,738.54	53.30	33.616		
10,700.00	10,638.97	10,686.27	10,640.27	40.30	39.07	-90.56	-217.52	-2,666.76	1,791.85	1,738.06	53.78	33.316		
10,800.00	10,738.97	10,786.27	10,740.27	40.62	39.40	-90.56	-217.52	-2,666.76	1,791.85	1,737.58	54.26	33.021		
10,900.00	10,838.97	10,886.27	10,840.27	40.95	39.74	-90.56	-217.52	-2,666.76	1,791.85	1,737.10	54.75	32.731		
11,000.00	10,938.97	10,986.27	10,940.27	41.28	40.07	-90.56	-217.52	-2,666.76	1,791.85	1,736.62	55.23	32.445		
11,100.00	11,038.97	11,086.27	11,040.27	41.60	40.40	-90.56	-217.52	-2,666.76	1,791.85	1,736.14	55.71	32.164		
11,184.03	11,123.00	11,170.31	11,124.30	41.88	40.68	-90.56	-217.52	-2,666.76	1,791.85	1,735.73	56.11	31.932		
11,200.00	11,138.96	11,186.27	11,140.26	41.93	40.74	-90.05	-217.52	-2,666.76	1,791.85	1,735.65	56.19	31.889		
11,250.00	11,188.82	11,236.35	11,190.34	42.09	40.90	-90.15	-217.08	-2,666.76	1,791.85	1,735.43	56.42	31.757		
11,300.00	11,238.18	11,286.88	11,240.67	42.24	41.06	-90.27	-212.89	-2,666.80	1,791.86	1,735.22	56.65	31.632		
11,350.00	11,286.65	11,337.74	11,290.78	42.39	41.21	-90.39	-204.21	-2,666.87	1,791.88	1,735.02	56.86	31.515		
11,400.00	11,333.89	11,388.95	11,340.24	42.53	41.35	-90.51	-191.02	-2,666.99	1,791.90	1,734.85	57.05	31.407		
11,450.00	11,379.52	11,440.50	11,388.64	42.65	41.47	-90.62	-173.33	-2,667.14	1,791.92	1,734.69	57.24	31.306		
11,500.00	11,423.19	11,492.38	11,435.55	42.76	41.58	-90.73	-151.22	-2,667.32	1,791.95	1,734.54	57.41	31.213		
11,550.00	11,464.58	11,544.58	11,480.54	42.86	41.67	-90.83	-124.77	-2,667.55	1,791.98	1,734.41	57.57	31.126		
11,600.00	11,503.38	11,597.09	11,523.18	42.95	41.75	-90.93	-94.16	-2,667.81	1,792.01	1,734.29	57.72	31.045		
11,650.00	11,539.27	11,649.90	11,563.04	43.03	41.81	-91.02	-59.56	-2,668.10	1,792.04	1,734.17	57.87	30.969		
11,700.00	11,572.00	11,702.97	11,599.74	43.09	41.86	-91.10	-21.24	-2,668.43	1,792.06	1,734.06	58.00	30.896		
11,750.00	11,601.31	11,756.29	11,632.87	43.14	41.89	-91.17	20.51	-2,668.78	1,792.08	1,733.95	58.14	30.826		
11,800.00	11,626.99	11,809.83	11,662.10	43.19	41.90	-91.24	65.34	-2,669.16	1,792.10	1,733.83	58.27	30.757		
11,850.00	11,648.82	11,863.56	11,687.09	43.23	41.90	-91.29	112.88	-2,669.56	1,792.11	1,733.71	58.40	30.689		
11,900.00	11,666.66	11,917.45	11,707.57	43.27	41.89	-91.33	162.70	-2,669.99	1,792.11	1,733.58	58.53	30.620		
11,950.00	11,680.35	11,971.45	11,723.31	43.31	41.87	-91.37	214.33	-2,670.43	1,792.11	1,733.44	58.66	30.550		
12,000.00	11,689.81	12,025.53	11,734.14	43.36	41.84	-91.39	267.30	-2,670.88	1,792.09	1,733.29	58.80	30.479		
12,050.00	11,694.95	12,079.66	11,739.93	43.42	41.81	-91.40	321.09	-2,671.33	1,792.07	1,733.13	58.94	30.405		
12,094.06	11,695.87	12,127.10	11,740.82	43.49	41.77	-91.40	368.51	-2,671.74	1,792.04	1,732.97	59.07	30.338		
12,100.00	11,695.77	12,133.04	11,740.71	43.50	41.77	-91.40	374.45	-2,671.79	1,792.04	1,732.95	59.09	30.328		
12,200.00	11,694.02	12,233.04	11,738.97	43.72	41.82	-91.40	474.43	-2,672.63	1,791.98	1,732.53	59.45	30.145		
12,300.00	11,692.27	12,333.04	11,737.23	44.02	42.15	-91.40	574.41	-2,673.48	1,791.92	1,732.03	59.89	29.920		
12,400.00	11,690.52	12,433.04	11,735.49	44.40	42.52	-91.40	674.39	-2,674.33	1,791.86	1,731.44	60.42	29.657		
12,500.00	11,688.77	12,533.04	11,733.75	44.85	42.95	-91.40	774.37	-2,675.18	1,791.81	1,730.77	61.04	29.357		
12,600.00	11,687.02	12,633.04	11,732.01	45.37	43.43	-91.40	874.36	-2,676.03	1,791.75	1,730.02	61.73	29.024		
12,700.00	11,685.27	12,733.04	11,730.27	45.95	43.96	-91.40	974.34	-2,676.88	1,791.69	1,729.18	62.51	28.662		
12,800.00	11,683.52	12,833.04	11,728.53	46.58	44.54	-91.40	1,074.32	-2,677.73	1,791.63	1,728.27	63.36	28.275		
12,900.00	11,681.78	12,933.04	11,726.79	47.27	45.17	-91.40	1,174.30	-2,678.58	1,791.58	1,727.29	64.29	27.866		
13,000.00	11,680.03	13,033.04	11,725.05	48.00	45.85	-91.40	1,274.28	-2,679.42	1,791.52	1,726.23	65.29	27.440		
13,100.00	11,678.28	13,133.04	11,723.31	48.78	46.58	-91.40	1,374.26	-2,680.27	1,791.46	1,725.11	66.35	26.999		
13,200.00	11,676.53	13,233.04	11,721.57	49.60	47.35	-91.40	1,474.24	-2,681.12	1,791.40	1,723.92	67.48	26.547		
13,300.00	11,674.78	13,333.04	11,719.82	50.46	48.17	-91.40	1,574.22	-2,681.97	1,791.35	1,722.68	68.67	26.086		
13,400.00	11,673.03	13,433.04	11,718.08	51.36	49.02	-91.40	1,674.21	-2,682.82	1,791.29	1,721.37	69.92	25.620		
13,500.00	11,671.28	13,533.04	11,716.34	52.30	49.92	-91.40	1,774.19	-2,683.67	1,791.23	1,720.01	71.22	25.151		
13,600.00	11,669.53	13,633.04	11,714.60	53.28	50.85	-91.40	1,874.17	-2,684.52	1,791.17	1,718.60	72.57	24.681		
13,700.00	11,667.78	13,733.04	11,712.86	54.28	51.82	-91.40	1,974.15	-2,685.37	1,791.12	1,717.14	73.97	24.212		
13,800.00	11,666.04	13,833.04	11,711.12	55.32	52.82	-91.40	2,074.13	-2,686.21	1,791.06	1,715.64	75.42	23.747		
13,900.00	11,664.29	13,933.04	11,709.38	56.38	53.85	-91.40	2,174.11	-2,687.06	1,791.00	1,714.09	76.92	23.285		
14,000.00	11,662.54	14,033.04	11,707.64	57.48	54.92	-91.40	2,274.09	-2,687.91	1,790.94	1,712.49	78.45	22.829		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,660.79	14,133.04	11,705.90	58.59	56.01	-91.40	2,374.07	-2,688.76	1,790.89	1,710.87	80.02	22.380		
14,200.00	11,659.04	14,233.04	11,704.16	59.74	57.12	-91.40	2,474.05	-2,689.61	1,790.83	1,709.20	81.63	21.938		
14,300.00	11,657.29	14,333.04	11,702.42	60.91	58.27	-91.40	2,574.04	-2,690.46	1,790.77	1,707.50	83.27	21.504		
14,400.00	11,655.54	14,433.04	11,700.68	62.09	59.43	-91.40	2,674.02	-2,691.31	1,790.72	1,705.76	84.95	21.080		
14,500.00	11,653.79	14,533.04	11,698.94	63.30	60.62	-91.40	2,774.00	-2,692.16	1,790.66	1,704.00	86.66	20.664		
14,600.00	11,652.04	14,633.04	11,697.20	64.53	61.83	-91.40	2,873.98	-2,693.01	1,790.60	1,702.21	88.39	20.258		
14,700.00	11,650.30	14,733.04	11,695.45	65.78	63.06	-91.40	2,973.96	-2,693.85	1,790.54	1,700.39	90.15	19.861		
14,800.00	11,648.55	14,833.04	11,693.71	67.04	64.31	-91.40	3,073.94	-2,694.70	1,790.49	1,698.54	91.94	19.474		
14,900.00	11,646.80	14,933.04	11,691.97	68.33	65.58	-91.41	3,173.92	-2,695.55	1,790.43	1,696.67	93.75	19.097		
15,000.00	11,645.05	15,033.04	11,690.23	69.62	66.86	-91.41	3,273.90	-2,696.40	1,790.37	1,694.78	95.59	18.730		
15,100.00	11,643.30	15,133.04	11,688.49	70.93	68.16	-91.41	3,373.89	-2,697.25	1,790.31	1,692.87	97.44	18.373		
15,200.00	11,641.55	15,233.04	11,686.75	72.26	69.47	-91.41	3,473.87	-2,698.10	1,790.26	1,690.94	99.32	18.025		
15,300.00	11,639.80	15,333.04	11,685.01	73.60	70.80	-91.41	3,573.85	-2,698.95	1,790.20	1,688.98	101.21	17.687		
15,400.00	11,638.05	15,433.04	11,683.27	74.95	72.14	-91.41	3,673.83	-2,699.80	1,790.14	1,687.01	103.13	17.359		
15,500.00	11,636.30	15,533.04	11,681.53	76.31	73.49	-91.41	3,773.81	-2,700.64	1,790.08	1,685.03	105.06	17.039		
15,600.00	11,634.56	15,633.04	11,679.79	77.68	74.86	-91.41	3,873.79	-2,701.49	1,790.03	1,683.02	107.00	16.729		
15,700.00	11,632.81	15,733.04	11,678.05	79.07	76.23	-91.41	3,973.77	-2,702.34	1,789.97	1,681.00	108.96	16.427		
15,800.00	11,631.06	15,833.04	11,676.31	80.46	77.62	-91.41	4,073.75	-2,703.19	1,789.91	1,678.97	110.94	16.134		
15,900.00	11,629.31	15,933.04	11,674.57	81.87	79.02	-91.41	4,173.74	-2,704.04	1,789.85	1,676.92	112.93	15.849		
16,000.00	11,627.56	16,033.04	11,672.83	83.28	80.42	-91.41	4,273.72	-2,704.89	1,789.80	1,674.86	114.93	15.573		
16,100.00	11,625.81	16,133.04	11,671.08	84.70	81.84	-91.41	4,373.70	-2,705.74	1,789.74	1,672.79	116.95	15.304		
16,200.00	11,624.06	16,233.04	11,669.34	86.13	83.27	-91.41	4,473.68	-2,706.59	1,789.68	1,670.71	118.97	15.043		
16,300.00	11,622.31	16,333.04	11,667.60	87.57	84.70	-91.41	4,573.66	-2,707.43	1,789.62	1,668.61	121.01	14.789		
16,400.00	11,620.56	16,433.04	11,665.86	89.01	86.14	-91.41	4,673.64	-2,708.28	1,789.57	1,666.51	123.06	14.542		
16,500.00	11,618.82	16,533.04	11,664.12	90.47	87.59	-91.41	4,773.62	-2,709.13	1,789.51	1,664.39	125.12	14.302		
16,600.00	11,617.07	16,633.04	11,662.38	91.92	89.04	-91.41	4,873.60	-2,709.98	1,789.45	1,662.26	127.19	14.069		
16,700.00	11,615.32	16,733.04	11,660.64	93.39	90.50	-91.41	4,973.59	-2,710.83	1,789.39	1,660.13	129.26	13.843		
16,800.00	11,613.57	16,833.04	11,658.90	94.86	91.97	-91.41	5,073.57	-2,711.68	1,789.34	1,657.99	131.35	13.623		
16,900.00	11,611.82	16,933.04	11,657.16	96.34	93.45	-91.41	5,173.55	-2,712.53	1,789.28	1,655.83	133.44	13.408		
17,000.00	11,610.07	17,033.04	11,655.42	97.82	94.93	-91.41	5,273.53	-2,713.38	1,789.22	1,653.68	135.55	13.200		
17,100.00	11,608.32	17,133.04	11,653.68	99.31	96.41	-91.41	5,373.51	-2,714.22	1,789.16	1,651.51	137.66	12.997		
17,200.00	11,606.57	17,233.04	11,651.94	100.80	97.90	-91.41	5,473.49	-2,715.07	1,789.11	1,649.33	139.77	12.800		
17,300.00	11,604.82	17,333.04	11,650.20	102.30	99.40	-91.41	5,573.47	-2,715.92	1,789.05	1,647.15	141.90	12.608		
17,400.00	11,603.08	17,433.04	11,648.46	103.80	100.90	-91.41	5,673.45	-2,716.77	1,788.99	1,644.97	144.03	12.421		
17,500.00	11,601.33	17,533.04	11,646.71	105.31	102.41	-91.41	5,773.44	-2,717.62	1,788.93	1,642.77	146.16	12.239		
17,600.00	11,599.58	17,633.04	11,644.97	106.82	103.92	-91.41	5,873.42	-2,718.47	1,788.88	1,640.57	148.30	12.062		
17,700.00	11,597.83	17,733.04	11,643.23	108.34	105.43	-91.41	5,973.40	-2,719.32	1,788.82	1,638.37	150.45	11.890		
17,800.00	11,596.08	17,833.04	11,641.49	109.85	106.95	-91.41	6,073.38	-2,720.17	1,788.76	1,636.16	152.61	11.721		
17,900.00	11,594.33	17,933.04	11,639.75	111.38	108.47	-91.41	6,173.36	-2,721.02	1,788.70	1,633.94	154.76	11.558		
18,000.00	11,592.58	18,033.04	11,638.01	112.90	110.00	-91.41	6,273.34	-2,721.86	1,788.65	1,631.72	156.93	11.398		
18,100.00	11,590.83	18,133.04	11,636.27	114.43	111.53	-91.41	6,373.32	-2,722.71	1,788.59	1,629.49	159.10	11.242		
18,200.00	11,589.08	18,233.04	11,634.53	115.97	113.06	-91.42	6,473.30	-2,723.56	1,788.53	1,627.26	161.27	11.090		
18,300.00	11,587.34	18,333.04	11,632.79	117.50	114.60	-91.42	6,573.29	-2,724.41	1,788.47	1,625.03	163.45	10.942		
18,400.00	11,585.59	18,433.04	11,631.05	119.04	116.14	-91.42	6,673.27	-2,725.26	1,788.42	1,622.79	165.63	10.798		
18,500.00	11,583.84	18,533.04	11,629.31	120.59	117.68	-91.42	6,773.25	-2,726.11	1,788.36	1,620.54	167.82	10.657		
18,600.00	11,582.09	18,633.04	11,627.57	122.13	119.22	-91.42	6,873.23	-2,726.96	1,788.30	1,618.30	170.01	10.519		
18,700.00	11,580.34	18,733.04	11,625.83	123.68	120.77	-91.42	6,973.21	-2,727.81	1,788.24	1,616.04	172.20	10.385		
18,800.00	11,578.59	18,833.04	11,624.08	125.23	122.32	-91.42	7,073.19	-2,728.65	1,788.19	1,613.79	174.40	10.253		
18,900.00	11,576.84	18,933.04	11,622.34	126.79	123.88	-91.42	7,173.17	-2,729.50	1,788.13	1,611.53	176.60	10.125		
19,000.00	11,575.09	19,033.04	11,620.60	128.34	125.43	-91.42	7,273.15	-2,730.35	1,788.07	1,609.27	178.80	10.000		
19,100.00	11,573.34	19,133.04	11,618.86	129.90	126.99	-91.42	7,373.14	-2,731.20	1,788.02	1,607.00	181.01	9.878		
19,200.00	11,571.60	19,233.04	11,617.12	131.46	128.55	-91.42	7,473.12	-2,732.05	1,787.96	1,604.73	183.22	9.758		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,569.85	19,333.04	11,615.38	133.02	130.11	-91.42	7,573.10	-2,732.90	1,787.90	1,602.46	185.44	9.642		
19,400.00	11,568.10	19,433.04	11,613.64	134.59	131.68	-91.42	7,673.08	-2,733.75	1,787.84	1,600.19	187.65	9.527		
19,500.00	11,566.35	19,533.04	11,611.90	136.15	133.25	-91.42	7,773.06	-2,734.60	1,787.79	1,597.91	189.87	9.416		
19,600.00	11,564.60	19,633.04	11,610.16	137.72	134.81	-91.42	7,873.04	-2,735.44	1,787.73	1,595.63	192.10	9.306		
19,700.00	11,562.85	19,733.04	11,608.42	139.29	136.39	-91.42	7,973.02	-2,736.29	1,787.67	1,593.35	194.32	9.200		
19,800.00	11,561.10	19,833.04	11,606.68	140.87	137.96	-91.42	8,073.00	-2,737.14	1,787.61	1,591.06	196.55	9.095		
19,900.00	11,559.35	19,933.04	11,604.94	142.44	139.53	-91.42	8,172.99	-2,737.99	1,787.56	1,588.78	198.78	8.993		
20,000.00	11,557.60	20,033.04	11,603.20	144.02	141.11	-91.42	8,272.97	-2,738.84	1,787.50	1,586.49	201.01	8.893		
20,100.00	11,555.86	20,133.04	11,601.46	145.59	142.69	-91.42	8,372.95	-2,739.69	1,787.44	1,584.19	203.25	8.794		
20,200.00	11,554.11	20,233.04	11,599.71	147.17	144.27	-91.42	8,472.93	-2,740.54	1,787.38	1,581.90	205.48	8.698		
20,300.00	11,552.36	20,333.04	11,597.97	148.76	145.85	-91.42	8,572.91	-2,741.39	1,787.33	1,579.60	207.72	8.604		
20,400.00	11,550.61	20,433.04	11,596.23	150.34	147.43	-91.42	8,672.89	-2,742.23	1,787.27	1,577.30	209.96	8.512		
20,500.00	11,548.86	20,533.04	11,594.49	151.92	149.02	-91.42	8,772.87	-2,743.08	1,787.21	1,575.00	212.21	8.422		
20,600.00	11,547.11	20,633.04	11,592.75	153.51	150.60	-91.42	8,872.85	-2,743.93	1,787.15	1,572.70	214.45	8.334		
20,700.00	11,545.36	20,733.04	11,591.01	155.09	152.19	-91.42	8,972.83	-2,744.78	1,787.10	1,570.40	216.70	8.247		
20,800.00	11,543.61	20,833.04	11,589.27	156.68	153.78	-91.42	9,072.82	-2,745.63	1,787.04	1,568.09	218.95	8.162		
20,900.00	11,541.86	20,933.04	11,587.53	158.27	155.37	-91.42	9,172.80	-2,746.48	1,786.98	1,565.78	221.20	8.079		
21,000.00	11,540.12	21,033.04	11,585.79	159.86	156.96	-91.42	9,272.78	-2,747.33	1,786.92	1,563.47	223.45	7.997		
21,100.00	11,538.37	21,133.04	11,584.05	161.45	158.55	-91.42	9,372.76	-2,748.18	1,786.87	1,561.16	225.71	7.917		
21,200.00	11,536.62	21,233.04	11,582.31	163.05	160.15	-91.42	9,472.74	-2,749.02	1,786.81	1,558.85	227.96	7.838		
21,300.00	11,534.87	21,333.04	11,580.57	164.64	161.74	-91.42	9,572.72	-2,749.87	1,786.75	1,556.53	230.22	7.761		
21,400.00	11,533.12	21,433.04	11,578.83	166.24	163.34	-91.42	9,672.70	-2,750.72	1,786.69	1,554.22	232.48	7.685		
21,500.00	11,531.37	21,533.04	11,577.09	167.83	164.94	-91.43	9,772.68	-2,751.57	1,786.64	1,551.90	234.74	7.611		
21,600.00	11,529.62	21,633.04	11,575.34	169.43	166.53	-91.43	9,872.67	-2,752.42	1,786.58	1,549.58	237.00	7.538		
21,700.00	11,527.87	21,733.04	11,573.60	171.03	168.13	-91.43	9,972.65	-2,753.27	1,786.52	1,547.26	239.26	7.467		
21,800.00	11,526.12	21,833.04	11,571.86	172.63	169.73	-91.43	10,072.63	-2,754.12	1,786.46	1,544.94	241.53	7.396		
21,866.13	11,524.97	21,898.12	11,570.73	173.69	170.77	-91.43	10,137.70	-2,754.67	1,786.43	1,543.40	243.02	7.351 CC		
21,874.54	11,524.82	21,898.12	11,570.73	173.82	170.77	-91.43	10,137.70	-2,754.67	1,786.45	1,543.27	243.18	7.346 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	3.50	3.50	0.00	0.00	-83.57	232.86	-2,064.76	2,077.85					
100.00	100.00	103.50	103.50	0.13	0.15	-83.57	232.86	-2,064.76	2,077.85	2,077.65	0.20	N/A		
200.00	200.00	203.50	203.50	0.48	0.51	-83.57	232.86	-2,064.76	2,077.85	2,077.14	0.70	2,947.472		
300.00	300.00	303.50	303.50	0.84	0.87	-83.57	232.86	-2,064.76	2,077.85	2,076.64	1.21	1,714.690		
400.00	400.00	403.50	403.50	1.20	1.23	-83.57	232.86	-2,064.76	2,077.85	2,076.13	1.72	1,208.967		
500.00	500.00	503.50	503.50	1.56	1.59	-83.57	232.86	-2,064.76	2,077.85	2,075.62	2.23	933.602		
600.00	600.00	603.50	603.50	1.92	1.95	-83.57	232.86	-2,064.76	2,077.85	2,075.12	2.73	760.403		
700.00	700.00	703.50	703.50	2.28	2.30	-83.57	232.86	-2,064.76	2,077.85	2,074.61	3.24	641.409		
800.00	800.00	803.50	803.50	2.63	2.66	-83.57	232.86	-2,064.76	2,077.85	2,074.10	3.75	554.617		
900.00	900.00	903.50	903.50	2.99	3.02	-83.57	232.86	-2,064.76	2,077.85	2,073.60	4.25	488.514		
1,000.00	1,000.00	1,003.50	1,003.50	3.35	3.38	-83.57	232.86	-2,064.76	2,077.85	2,073.09	4.76	436.491		
1,100.00	1,100.00	1,103.50	1,103.50	3.71	3.74	-83.57	232.86	-2,064.76	2,077.85	2,072.58	5.27	394.481		
1,200.00	1,200.00	1,203.50	1,203.50	4.07	4.10	-83.57	232.86	-2,064.76	2,077.85	2,072.08	5.77	359.847		
1,300.00	1,300.00	1,303.50	1,303.50	4.43	4.46	-83.57	232.86	-2,064.76	2,077.85	2,071.57	6.28	330.804		
1,400.00	1,400.00	1,403.50	1,403.50	4.79	4.81	-83.57	232.86	-2,064.76	2,077.85	2,071.06	6.79	306.099		
1,500.00	1,500.00	1,503.50	1,503.50	5.14	5.17	-83.57	232.86	-2,064.76	2,077.85	2,070.55	7.30	284.827		
1,600.00	1,600.00	1,603.50	1,603.50	5.50	5.53	-83.57	232.86	-2,064.76	2,077.85	2,070.05	7.80	266.320		
1,700.00	1,700.00	1,703.50	1,703.50	5.86	5.89	-83.57	232.86	-2,064.76	2,077.85	2,069.54	8.31	250.071		
1,800.00	1,800.00	1,803.50	1,803.50	6.22	6.25	-83.57	232.86	-2,064.76	2,077.85	2,069.03	8.82	235.691		
1,900.00	1,900.00	1,903.50	1,903.50	6.58	6.61	-83.57	232.86	-2,064.76	2,077.85	2,068.53	9.32	222.875		
2,000.00	2,000.00	2,003.50	2,003.50	6.94	6.97	-83.57	232.86	-2,064.76	2,077.85	2,068.02	9.83	211.381		
2,100.00	2,100.00	2,103.50	2,103.50	7.29	7.32	-83.57	232.86	-2,064.76	2,077.85	2,067.51	10.34	201.014		
2,200.00	2,200.00	2,203.50	2,203.50	7.65	7.68	-83.57	232.86	-2,064.76	2,077.85	2,067.01	10.84	191.616		
2,300.00	2,300.00	2,303.50	2,303.50	8.01	8.04	-83.57	232.86	-2,064.76	2,077.85	2,066.50	11.35	183.058		
2,400.00	2,400.00	2,403.50	2,403.50	8.37	8.40	-83.57	232.86	-2,064.76	2,077.85	2,065.99	11.86	175.232		
2,500.00	2,500.00	2,503.50	2,503.50	8.73	8.76	-83.57	232.86	-2,064.76	2,077.85	2,065.48	12.36	168.047		
2,600.00	2,600.00	2,603.50	2,603.50	9.09	9.12	-83.57	232.86	-2,064.76	2,077.85	2,064.98	12.87	161.429		
2,700.00	2,700.00	2,703.50	2,703.50	9.45	9.47	-83.57	232.86	-2,064.76	2,077.85	2,064.47	13.38	155.312		
2,800.00	2,800.00	2,803.50	2,803.50	9.80	9.83	-83.57	232.86	-2,064.76	2,077.85	2,063.96	13.89	149.641		
2,900.00	2,900.00	2,903.50	2,903.50	10.16	10.19	-83.57	232.86	-2,064.76	2,077.85	2,063.46	14.39	144.371		
2,915.46	2,915.46	2,918.96	2,918.96	10.22	10.25	-83.57	232.86	-2,064.76	2,077.85	2,063.38	14.47	143.589		
3,000.00	3,000.00	3,000.00	3,000.00	10.52	10.54	-83.57	232.86	-2,064.76	2,077.85	2,062.96	14.89	139.542		
3,100.00	3,100.00	3,082.85	3,082.84	10.88	10.82	-83.59	232.11	-2,065.26	2,078.36	2,063.02	15.34	135.456		
3,200.00	3,200.00	3,162.82	3,162.77	11.24	11.08	-83.65	229.97	-2,066.68	2,079.84	2,064.06	15.78	131.790		
3,300.00	3,299.99	3,242.68	3,242.52	11.59	11.35	19.12	226.45	-2,069.03	2,081.05	2,064.84	16.21	128.391		
3,400.00	3,399.91	3,322.44	3,322.06	11.92	11.61	19.01	221.54	-2,072.30	2,080.75	2,064.13	16.63	125.136		
3,500.00	3,499.69	3,402.57	3,401.83	12.26	11.87	18.88	215.23	-2,076.52	2,078.97	2,061.92	17.05	121.943		
3,600.00	3,599.27	3,502.30	3,501.01	12.61	12.21	18.72	206.55	-2,082.30	2,075.19	2,057.66	17.52	118.425		
3,700.00	3,698.57	3,601.95	3,600.11	12.96	12.55	18.60	197.88	-2,088.08	2,068.95	2,050.95	18.00	114.938		
3,733.40	3,731.67	3,635.20	3,633.18	13.07	12.66	18.57	194.99	-2,090.01	2,066.31	2,048.15	18.16	113.778		
3,800.00	3,797.62	3,701.50	3,699.12	13.31	12.89	18.48	189.22	-2,093.85	2,060.79	2,042.31	18.48	111.511		
3,900.00	3,896.65	3,801.04	3,798.11	13.66	13.23	18.35	180.56	-2,099.63	2,052.51	2,033.55	18.96	108.236		
4,000.00	3,995.67	3,900.58	3,897.11	14.02	13.58	18.21	171.90	-2,105.40	2,044.24	2,024.79	19.45	105.107		
4,100.00	4,094.70	4,000.12	3,996.10	14.39	13.93	18.08	163.24	-2,111.17	2,035.98	2,016.04	19.94	102.116		
4,200.00	4,193.73	4,099.66	4,095.10	14.75	14.28	17.94	154.58	-2,116.94	2,027.74	2,007.31	20.43	99.257		
4,300.00	4,292.75	4,199.20	4,194.09	15.12	14.63	17.80	145.93	-2,122.72	2,019.50	1,998.58	20.92	96.521		
4,400.00	4,391.78	4,298.74	4,293.09	15.50	14.99	17.66	137.27	-2,128.49	2,011.28	1,989.86	21.42	93.902		
4,500.00	4,490.81	4,398.28	4,392.08	15.87	15.34	17.52	128.61	-2,134.26	2,003.07	1,981.15	21.92	91.394		
4,600.00	4,589.83	4,497.82	4,491.08	16.25	15.70	17.38	119.95	-2,140.03	1,994.87	1,972.45	22.42	88.990		
4,700.00	4,688.86	4,597.36	4,590.07	16.63	16.07	17.23	111.29	-2,145.81	1,986.68	1,963.76	22.92	86.684		
4,800.00	4,787.89	4,696.91	4,689.07	17.01	16.43	17.09	102.63	-2,151.58	1,978.51	1,955.08	23.42	84.472		
4,900.00	4,886.91	4,796.45	4,788.06	17.39	16.79	16.94	93.97	-2,157.35	1,970.35	1,946.42	23.93	82.349		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	4,985.94	4,895.99	4,887.06	17.78	17.16	16.80	85.31	-2,163.13	1,962.20	1,937.76	24.43	80.309		
5,100.00	5,084.97	4,995.53	4,986.05	18.17	17.53	16.65	76.65	-2,168.90	1,954.06	1,929.12	24.94	78.348		
5,200.00	5,183.99	5,095.07	5,085.05	18.56	17.89	16.50	67.99	-2,174.67	1,945.94	1,920.49	25.45	76.462		
5,300.00	5,283.02	5,194.61	5,184.04	18.95	18.26	16.35	59.33	-2,180.44	1,937.83	1,911.87	25.96	74.648		
5,400.00	5,382.05	5,294.15	5,283.04	19.34	18.63	16.20	50.67	-2,186.22	1,929.73	1,903.26	26.47	72.901		
5,500.00	5,481.07	5,393.69	5,382.03	19.73	19.01	16.04	42.01	-2,191.99	1,921.65	1,894.67	26.98	71.218		
5,600.00	5,580.10	5,493.23	5,481.03	20.12	19.38	15.89	33.36	-2,197.76	1,913.58	1,886.09	27.50	69.596		
5,700.00	5,679.12	5,592.77	5,580.02	20.52	19.75	15.73	24.70	-2,203.54	1,905.53	1,877.52	28.01	68.032		
5,800.00	5,778.15	5,692.31	5,679.02	20.92	20.13	15.58	16.04	-2,209.31	1,897.49	1,868.96	28.52	66.523		
5,900.00	5,877.18	5,791.85	5,778.01	21.31	20.50	15.42	7.38	-2,215.08	1,889.46	1,860.42	29.04	65.066		
6,000.00	5,976.20	5,891.39	5,877.01	21.71	20.88	15.26	-1.28	-2,220.85	1,881.45	1,851.89	29.56	63.659		
6,100.00	6,075.23	5,990.93	5,976.00	22.11	21.25	15.10	-9.94	-2,226.63	1,873.45	1,843.38	30.07	62.299		
6,200.00	6,174.26	6,090.47	6,075.00	22.51	21.63	14.94	-18.60	-2,232.40	1,865.47	1,834.88	30.59	60.985		
6,300.00	6,273.28	6,190.01	6,173.99	22.91	22.01	14.77	-27.26	-2,238.17	1,857.50	1,826.39	31.11	59.714		
6,400.00	6,372.31	6,289.55	6,272.99	23.32	22.39	14.61	-35.92	-2,243.95	1,849.55	1,817.92	31.63	58.484		
6,500.00	6,471.34	6,389.10	6,371.98	23.72	22.77	14.44	-44.58	-2,249.72	1,841.61	1,809.47	32.14	57.293		
6,600.00	6,570.36	6,488.64	6,470.98	24.12	23.15	14.27	-53.24	-2,255.49	1,833.69	1,801.03	32.66	56.140		
6,700.00	6,669.39	6,588.18	6,569.97	24.53	23.53	14.10	-61.90	-2,261.26	1,825.78	1,792.60	33.18	55.023		
6,800.00	6,768.42	6,687.72	6,668.97	24.93	23.91	13.93	-70.56	-2,267.04	1,817.90	1,784.19	33.70	53.940		
6,900.00	6,867.44	6,787.26	6,767.96	25.34	24.29	13.76	-79.21	-2,272.81	1,810.02	1,775.80	34.22	52.890		
7,000.00	6,966.47	6,886.80	6,866.96	25.74	24.67	13.59	-87.87	-2,278.58	1,802.17	1,767.42	34.74	51.871		
7,100.00	7,065.50	6,986.34	6,965.95	26.15	25.05	13.41	-96.53	-2,284.36	1,794.33	1,759.06	35.26	50.883		
7,200.00	7,164.52	7,085.88	7,064.95	26.55	25.44	13.23	-105.19	-2,290.13	1,786.50	1,750.72	35.79	49.923		
7,300.00	7,263.55	7,185.42	7,163.94	26.96	25.82	13.06	-113.85	-2,295.90	1,778.70	1,742.39	36.31	48.991		
7,400.00	7,362.58	7,284.96	7,262.94	27.37	26.20	12.88	-122.51	-2,301.67	1,770.91	1,734.08	36.83	48.086		
7,500.00	7,461.60	7,384.50	7,361.93	27.78	26.59	12.69	-131.17	-2,307.45	1,763.14	1,725.79	37.35	47.206		
7,600.00	7,560.63	7,484.04	7,460.93	28.19	26.97	12.51	-139.83	-2,313.22	1,755.39	1,717.51	37.87	46.351		
7,700.00	7,659.66	7,583.58	7,559.92	28.60	27.35	12.33	-148.49	-2,318.99	1,747.65	1,709.26	38.39	45.519		
7,800.00	7,758.68	7,683.12	7,658.92	29.01	27.74	12.14	-157.15	-2,324.77	1,739.93	1,701.02	38.92	44.710		
7,900.00	7,857.71	7,782.66	7,757.91	29.42	28.12	11.95	-165.81	-2,330.54	1,732.24	1,692.80	39.44	43.923		
8,000.00	7,956.74	7,882.20	7,856.91	29.83	28.51	11.76	-174.47	-2,336.31	1,724.56	1,684.60	39.96	43.156		
8,100.00	8,055.76	7,981.74	7,955.90	30.24	28.89	11.57	-183.13	-2,342.08	1,716.90	1,676.41	40.48	42.410		
8,200.00	8,154.79	8,081.29	8,054.90	30.65	29.28	11.38	-191.78	-2,347.86	1,709.26	1,668.25	41.01	41.683		
8,300.00	8,253.82	8,183.73	8,156.78	31.06	29.68	11.18	-200.68	-2,353.79	1,701.63	1,660.09	41.54	40.967		
8,400.00	8,352.84	8,318.00	8,290.57	31.47	30.19	10.99	-210.08	-2,360.05	1,692.84	1,650.69	42.14	40.172		
8,500.00	8,451.87	8,451.94	8,424.34	31.88	30.67	10.93	-215.55	-2,363.70	1,682.01	1,639.29	42.72	39.372		
8,600.00	8,550.90	8,582.01	8,554.40	32.30	31.12	10.99	-217.14	-2,364.76	1,669.17	1,625.90	43.27	38.575		
8,700.00	8,649.92	8,681.04	8,653.42	32.71	31.44	11.08	-217.14	-2,364.76	1,655.50	1,611.74	43.76	37.828		
8,800.00	8,748.95	8,780.07	8,752.45	33.12	31.77	11.18	-217.14	-2,364.76	1,641.84	1,597.58	44.26	37.097		
8,900.00	8,847.98	8,879.09	8,851.48	33.54	32.10	11.27	-217.14	-2,364.76	1,628.18	1,583.43	44.75	36.381		
9,000.00	8,947.00	8,978.12	8,950.50	33.95	32.42	11.37	-217.14	-2,364.76	1,614.53	1,569.28	45.25	35.681		
9,100.00	9,046.03	9,077.15	9,049.53	34.36	32.75	11.47	-217.14	-2,364.76	1,600.88	1,555.13	45.74	34.996		
9,200.00	9,145.05	9,176.17	9,148.55	34.78	33.08	11.57	-217.14	-2,364.76	1,587.23	1,540.99	46.24	34.325		
9,300.00	9,244.08	9,275.20	9,247.58	35.19	33.41	11.67	-217.14	-2,364.76	1,573.59	1,526.86	46.74	33.668		
9,400.00	9,343.11	9,374.23	9,346.61	35.61	33.74	11.77	-217.14	-2,364.76	1,559.96	1,512.72	47.24	33.025		
9,500.00	9,442.13	9,473.25	9,445.63	36.02	34.07	11.88	-217.14	-2,364.76	1,546.33	1,498.60	47.73	32.395		
9,600.00	9,541.16	9,572.28	9,544.66	36.44	34.40	11.98	-217.14	-2,364.76	1,532.71	1,484.47	48.23	31.777		
9,647.64	9,588.33	9,619.45	9,591.83	36.63	34.56	12.03	-217.14	-2,364.76	1,526.22	1,477.75	48.47	31.488		
9,700.00	9,640.24	9,671.35	9,643.74	36.85	34.73	12.07	-217.14	-2,364.76	1,519.44	1,470.71	48.73	31.180		
9,800.00	9,739.60	9,770.71	9,743.10	37.25	35.06	12.12	-217.14	-2,364.76	1,508.42	1,459.19	49.23	30.641		
9,900.00	9,839.22	9,870.34	9,842.72	37.63	35.40	12.16	-217.14	-2,364.76	1,499.96	1,450.24	49.72	30.165		
10,000.00	9,939.03	9,970.15	9,942.53	38.00	35.73	12.19	-217.14	-2,364.76	1,494.05	1,443.83	50.22	29.751		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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		
10,100.00	10,038.97	10,070.09	10,042.47	38.35	36.07	12.21	-217.14	-2,364.76	1,490.70	1,439.99	50.71	29.398		
10,181.03	10,120.00	10,151.12	10,123.50	38.61	36.34	-90.66	-217.14	-2,364.76	1,489.86	1,438.76	51.10	29.156		
10,200.00	10,138.97	10,170.08	10,142.47	38.68	36.41	-90.66	-217.14	-2,364.76	1,489.86	1,438.67	51.19	29.104		
10,300.00	10,238.97	10,270.08	10,242.47	39.00	36.74	-90.66	-217.14	-2,364.76	1,489.86	1,438.19	51.67	28.834		
10,400.00	10,338.97	10,370.08	10,342.47	39.32	37.08	-90.66	-217.14	-2,364.76	1,489.86	1,437.71	52.15	28.568		
10,500.00	10,438.97	10,470.08	10,442.47	39.65	37.42	-90.66	-217.14	-2,364.76	1,489.86	1,437.23	52.63	28.307		
10,600.00	10,538.97	10,570.08	10,542.47	39.97	37.76	-90.66	-217.14	-2,364.76	1,489.86	1,436.75	53.11	28.051		
10,700.00	10,638.97	10,670.08	10,642.47	40.30	38.09	-90.66	-217.14	-2,364.76	1,489.86	1,436.26	53.59	27.799		
10,800.00	10,738.97	10,770.08	10,742.47	40.62	38.43	-90.66	-217.14	-2,364.76	1,489.86	1,435.78	54.08	27.551		
10,900.00	10,838.97	10,870.08	10,842.47	40.95	38.77	-90.66	-217.14	-2,364.76	1,489.86	1,435.30	54.56	27.307		
11,000.00	10,938.97	10,970.08	10,942.47	41.28	39.11	-90.66	-217.14	-2,364.76	1,489.86	1,434.82	55.04	27.067		
11,100.00	11,038.97	11,070.08	11,042.47	41.60	39.45	-90.66	-217.14	-2,364.76	1,489.86	1,434.33	55.53	26.832		
11,184.03	11,123.00	11,154.12	11,126.50	41.88	39.74	-90.66	-217.14	-2,364.76	1,489.86	1,433.93	55.93	26.637 CC		
11,200.00	11,138.96	11,170.08	11,142.46	41.93	39.79	-90.15	-217.14	-2,364.76	1,489.86	1,433.85	56.01	26.600		
11,250.00	11,188.82	11,219.94	11,192.32	42.09	39.96	-90.28	-217.14	-2,364.76	1,489.87	1,433.63	56.25	26.489		
11,300.00	11,238.18	11,269.29	11,241.68	42.24	40.13	-90.58	-217.14	-2,364.76	1,489.93	1,433.46	56.47	26.384		
11,350.00	11,286.65	11,317.77	11,290.15	42.39	40.30	-91.01	-217.14	-2,364.76	1,490.11	1,433.42	56.69	26.286		
11,400.00	11,333.89	11,365.01	11,337.39	42.53	40.46	-91.57	-217.14	-2,364.76	1,490.50	1,433.61	56.89	26.198		
11,450.00	11,379.52	11,410.63	11,383.02	42.65	40.61	-92.21	-217.14	-2,364.76	1,491.24	1,434.15	57.09	26.121		
11,500.00	11,423.19	11,454.31	11,426.69	42.76	40.76	-92.90	-217.14	-2,364.76	1,492.48	1,435.21	57.28	26.058		
11,550.00	11,464.58	11,502.14	11,474.50	42.86	40.92	-93.71	-216.27	-2,364.77	1,494.36	1,436.89	57.46	26.007		
11,600.00	11,503.38	11,556.29	11,528.36	42.95	41.09	-94.61	-210.75	-2,364.81	1,496.73	1,439.09	57.64	25.968		
11,650.00	11,539.27	11,614.40	11,585.28	43.03	41.26	-95.53	-199.19	-2,364.91	1,499.55	1,441.75	57.80	25.944		
11,700.00	11,572.00	11,677.20	11,645.14	43.09	41.43	-96.46	-180.30	-2,365.07	1,502.75	1,444.80	57.94	25.936		
11,750.00	11,601.31	11,745.54	11,707.49	43.14	41.59	-97.41	-152.44	-2,365.31	1,506.22	1,448.17	58.05	25.946		
11,800.00	11,626.99	11,820.32	11,771.39	43.19	41.74	-98.38	-113.70	-2,365.64	1,509.83	1,451.71	58.12	25.976		
11,850.00	11,648.82	11,902.38	11,835.04	43.23	41.87	-99.33	-62.02	-2,366.08	1,513.40	1,455.25	58.15	26.024		
11,900.00	11,666.66	11,992.31	11,895.53	43.27	41.98	-100.23	4.39	-2,366.64	1,516.71	1,458.57	58.15	26.085		
11,950.00	11,680.35	12,090.13	11,948.66	43.31	42.07	-101.02	86.39	-2,367.34	1,519.52	1,461.40	58.12	26.143		
12,000.00	11,689.81	12,194.94	11,989.24	43.36	42.16	-101.62	182.87	-2,368.16	1,521.57	1,463.45	58.12	26.179		
12,050.00	11,694.95	12,304.68	12,012.17	43.42	42.27	-101.95	290.01	-2,369.07	1,522.65	1,464.46	58.19	26.166		
12,094.06	11,695.87	12,390.55	12,015.70	43.49	42.38	-101.99	375.72	-2,369.79	1,522.75	1,464.42	58.33	26.107		
12,100.00	11,695.77	12,396.49	12,015.60	43.50	42.39	-101.99	381.67	-2,369.85	1,522.74	1,464.40	58.34	26.099		
12,200.00	11,694.02	12,496.49	12,013.89	43.72	42.60	-101.99	481.65	-2,370.69	1,522.69	1,464.01	58.68	25.948		
12,300.00	11,692.27	12,596.49	12,012.17	44.02	42.88	-102.00	581.63	-2,371.54	1,522.65	1,463.54	59.10	25.762		
12,400.00	11,690.52	12,696.49	12,010.46	44.40	43.22	-102.00	681.61	-2,372.39	1,522.60	1,462.98	59.61	25.541		
12,500.00	11,688.77	12,796.49	12,008.75	44.85	43.63	-102.00	781.60	-2,373.24	1,522.55	1,462.34	60.21	25.289		
12,600.00	11,687.02	12,896.49	12,007.03	45.37	44.09	-102.00	881.58	-2,374.09	1,522.50	1,461.62	60.88	25.008		
12,700.00	11,685.27	12,996.49	12,005.32	45.95	44.61	-102.00	981.56	-2,374.94	1,522.45	1,460.82	61.63	24.702		
12,800.00	11,683.52	13,096.49	12,003.61	46.58	45.18	-102.00	1,081.54	-2,375.79	1,522.40	1,459.94	62.46	24.375		
12,900.00	11,681.78	13,196.49	12,001.89	47.27	45.81	-102.01	1,181.52	-2,376.64	1,522.35	1,459.00	63.36	24.028		
13,000.00	11,680.03	13,296.49	12,000.18	48.00	46.48	-102.01	1,281.50	-2,377.49	1,522.31	1,457.98	64.32	23.666		
13,100.00	11,678.28	13,396.49	11,998.47	48.78	47.21	-102.01	1,381.49	-2,378.34	1,522.26	1,456.90	65.36	23.291		
13,200.00	11,676.53	13,496.49	11,996.75	49.60	47.97	-102.01	1,481.47	-2,379.19	1,522.21	1,455.75	66.45	22.906		
13,300.00	11,674.78	13,596.49	11,995.04	50.46	48.79	-102.01	1,581.45	-2,380.03	1,522.16	1,454.55	67.61	22.514		
13,400.00	11,673.03	13,696.49	11,993.33	51.36	49.64	-102.02	1,681.43	-2,380.88	1,522.11	1,453.29	68.82	22.116		
13,500.00	11,671.28	13,796.49	11,991.62	52.30	50.53	-102.02	1,781.41	-2,381.73	1,522.06	1,451.97	70.09	21.715		
13,600.00	11,669.53	13,896.49	11,989.90	53.28	51.46	-102.02	1,881.39	-2,382.58	1,522.01	1,450.60	71.41	21.313		
13,700.00	11,667.78	13,996.49	11,988.19	54.28	52.42	-102.02	1,981.38	-2,383.43	1,521.96	1,449.19	72.78	20.912		
13,800.00	11,666.04	14,096.49	11,986.48	55.32	53.42	-102.02	2,081.36	-2,384.28	1,521.92	1,447.73	74.19	20.514		
13,900.00	11,664.29	14,196.49	11,984.76	56.38	54.45	-102.02	2,181.34	-2,385.13	1,521.87	1,446.22	75.65	20.118		
14,000.00	11,662.54	14,296.49	11,983.05	57.48	55.51	-102.03	2,281.32	-2,385.98	1,521.82	1,444.68	77.14	19.728		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,660.79	14,396.49	11,981.34	58.59	56.60	-102.03	2,381.30	-2,386.83	1,521.77	1,443.09	78.68	19.342		
14,200.00	11,659.04	14,496.49	11,979.62	59.74	57.71	-102.03	2,481.28	-2,387.68	1,521.72	1,441.47	80.25	18.963		
14,300.00	11,657.29	14,596.49	11,977.91	60.91	58.85	-102.03	2,581.27	-2,388.52	1,521.67	1,439.82	81.85	18.591		
14,400.00	11,655.54	14,696.49	11,976.20	62.09	60.02	-102.03	2,681.25	-2,389.37	1,521.62	1,438.14	83.49	18.226		
14,500.00	11,653.79	14,796.49	11,974.48	63.30	61.20	-102.03	2,781.23	-2,390.22	1,521.58	1,436.42	85.15	17.868		
14,600.00	11,652.04	14,896.49	11,972.77	64.53	62.41	-102.04	2,881.21	-2,391.07	1,521.53	1,434.68	86.85	17.519		
14,700.00	11,650.30	14,996.49	11,971.06	65.78	63.64	-102.04	2,981.19	-2,391.92	1,521.48	1,432.91	88.57	17.178		
14,800.00	11,648.55	15,096.49	11,969.35	67.04	64.88	-102.04	3,081.17	-2,392.77	1,521.43	1,431.11	90.32	16.845		
14,900.00	11,646.80	15,196.49	11,967.63	68.33	66.15	-102.04	3,181.16	-2,393.62	1,521.38	1,429.29	92.09	16.520		
15,000.00	11,645.05	15,296.49	11,965.92	69.62	67.43	-102.04	3,281.14	-2,394.47	1,521.33	1,427.45	93.89	16.204		
15,100.00	11,643.30	15,396.49	11,964.21	70.93	68.72	-102.05	3,381.12	-2,395.32	1,521.28	1,425.58	95.70	15.896		
15,200.00	11,641.55	15,496.49	11,962.49	72.26	70.03	-102.05	3,481.10	-2,396.17	1,521.23	1,423.70	97.54	15.597		
15,300.00	11,639.80	15,596.49	11,960.78	73.60	71.36	-102.05	3,581.08	-2,397.02	1,521.19	1,421.80	99.39	15.305		
15,400.00	11,638.05	15,696.49	11,959.07	74.95	72.70	-102.05	3,681.06	-2,397.86	1,521.14	1,419.88	101.26	15.022		
15,500.00	11,636.30	15,796.49	11,957.35	76.31	74.05	-102.05	3,781.05	-2,398.71	1,521.09	1,417.94	103.15	14.747		
15,600.00	11,634.56	15,896.49	11,955.64	77.68	75.41	-102.05	3,881.03	-2,399.56	1,521.04	1,415.99	105.05	14.479		
15,700.00	11,632.81	15,996.49	11,953.93	79.07	76.79	-102.06	3,981.01	-2,400.41	1,520.99	1,414.02	106.97	14.218		
15,800.00	11,631.06	16,096.49	11,952.21	80.46	78.17	-102.06	4,080.99	-2,401.26	1,520.94	1,412.04	108.91	13.966		
15,900.00	11,629.31	16,196.49	11,950.50	81.87	79.57	-102.06	4,180.97	-2,402.11	1,520.89	1,410.04	110.85	13.720		
16,000.00	11,627.56	16,296.49	11,948.79	83.28	80.97	-102.06	4,280.95	-2,402.96	1,520.85	1,408.03	112.81	13.481		
16,100.00	11,625.81	16,396.49	11,947.08	84.70	82.39	-102.06	4,380.94	-2,403.81	1,520.80	1,406.01	114.79	13.249		
16,200.00	11,624.06	16,496.49	11,945.36	86.13	83.81	-102.06	4,480.92	-2,404.66	1,520.75	1,403.98	116.77	13.024		
16,300.00	11,622.31	16,596.49	11,943.65	87.57	85.24	-102.07	4,580.90	-2,405.51	1,520.70	1,401.94	118.76	12.804		
16,400.00	11,620.56	16,696.49	11,941.94	89.01	86.68	-102.07	4,680.88	-2,406.36	1,520.65	1,399.88	120.77	12.592		
16,500.00	11,618.82	16,796.49	11,940.22	90.47	88.12	-102.07	4,780.86	-2,407.20	1,520.60	1,397.82	122.78	12.384		
16,600.00	11,617.07	16,896.49	11,938.51	91.92	89.58	-102.07	4,880.84	-2,408.05	1,520.55	1,395.75	124.81	12.183		
16,700.00	11,615.32	16,996.49	11,936.80	93.39	91.04	-102.07	4,980.83	-2,408.90	1,520.51	1,393.66	126.84	11.988		
16,800.00	11,613.57	17,096.49	11,935.08	94.86	92.50	-102.08	5,080.81	-2,409.75	1,520.46	1,391.57	128.88	11.797		
16,900.00	11,611.82	17,196.49	11,933.37	96.34	93.98	-102.08	5,180.79	-2,410.60	1,520.41	1,389.48	130.93	11.612		
17,000.00	11,610.07	17,296.49	11,931.66	97.82	95.46	-102.08	5,280.77	-2,411.45	1,520.36	1,387.37	132.99	11.432		
17,100.00	11,608.32	17,396.49	11,929.94	99.31	96.94	-102.08	5,380.75	-2,412.30	1,520.31	1,385.26	135.05	11.257		
17,200.00	11,606.57	17,496.49	11,928.23	100.80	98.43	-102.08	5,480.74	-2,413.15	1,520.26	1,383.14	137.12	11.087		
17,300.00	11,604.82	17,596.49	11,926.52	102.30	99.92	-102.08	5,580.72	-2,414.00	1,520.21	1,381.01	139.20	10.921		
17,400.00	11,603.08	17,696.49	11,924.81	103.80	101.42	-102.09	5,680.70	-2,414.85	1,520.16	1,378.88	141.29	10.759		
17,500.00	11,601.33	17,796.49	11,923.09	105.31	102.93	-102.09	5,780.68	-2,415.69	1,520.12	1,376.74	143.38	10.602		
17,600.00	11,599.58	17,896.49	11,921.38	106.82	104.44	-102.09	5,880.66	-2,416.54	1,520.07	1,374.59	145.47	10.449		
17,700.00	11,597.83	17,996.49	11,919.67	108.34	105.95	-102.09	5,980.64	-2,417.39	1,520.02	1,372.44	147.58	10.300		
17,800.00	11,596.08	18,096.49	11,917.95	109.85	107.47	-102.09	6,080.63	-2,418.24	1,519.97	1,370.29	149.68	10.155		
17,900.00	11,594.33	18,196.49	11,916.24	111.38	108.99	-102.09	6,180.61	-2,419.09	1,519.92	1,368.13	151.80	10.013		
18,000.00	11,592.58	18,296.49	11,914.53	112.90	110.51	-102.10	6,280.59	-2,419.94	1,519.87	1,365.96	153.91	9.875		
18,100.00	11,590.83	18,396.49	11,912.81	114.43	112.04	-102.10	6,380.57	-2,420.79	1,519.82	1,363.79	156.03	9.740		
18,200.00	11,589.08	18,496.49	11,911.10	115.97	113.57	-102.10	6,480.55	-2,421.64	1,519.78	1,361.61	158.16	9.609		
18,300.00	11,587.34	18,596.49	11,909.39	117.50	115.11	-102.10	6,580.53	-2,422.49	1,519.73	1,359.43	160.29	9.481		
18,400.00	11,585.59	18,696.49	11,907.67	119.04	116.64	-102.10	6,680.52	-2,423.34	1,519.68	1,357.25	162.43	9.356		
18,500.00	11,583.84	18,796.49	11,905.96	120.59	118.19	-102.11	6,780.50	-2,424.19	1,519.63	1,355.06	164.57	9.234		
18,600.00	11,582.09	18,896.49	11,904.25	122.13	119.73	-102.11	6,880.48	-2,425.03	1,519.58	1,352.87	166.71	9.115		
18,700.00	11,580.34	18,996.49	11,902.54	123.68	121.28	-102.11	6,980.46	-2,425.88	1,519.53	1,350.68	168.86	8.999		
18,800.00	11,578.59	19,096.49	11,900.82	125.23	122.83	-102.11	7,080.44	-2,426.73	1,519.48	1,348.48	171.01	8.886		
18,900.00	11,576.84	19,196.49	11,899.11	126.79	124.38	-102.11	7,180.42	-2,427.58	1,519.44	1,346.28	173.16	8.775		
19,000.00	11,575.09	19,296.49	11,897.40	128.34	125.93	-102.11	7,280.41	-2,428.43	1,519.39	1,344.07	175.32	8.667		
19,100.00	11,573.34	19,396.49	11,895.68	129.90	127.49	-102.12	7,380.39	-2,429.28	1,519.34	1,341.86	177.47	8.561		
19,200.00	11,571.60	19,496.49	11,893.97	131.46	129.05	-102.12	7,480.37	-2,430.13	1,519.29	1,339.65	179.64	8.458		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	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	11,569.85	19,596.49	11,892.26	133.02	130.61	-102.12	7,580.35	-2,430.98	1,519.24	1,337.44	181.80	8.357		
19,400.00	11,568.10	19,696.49	11,890.54	134.59	132.18	-102.12	7,680.33	-2,431.83	1,519.19	1,335.22	183.97	8.258		
19,500.00	11,566.35	19,796.49	11,888.83	136.15	133.74	-102.12	7,780.31	-2,432.68	1,519.14	1,333.00	186.14	8.161		
19,600.00	11,564.60	19,896.49	11,887.12	137.72	135.31	-102.13	7,880.30	-2,433.53	1,519.10	1,330.78	188.32	8.067		
19,700.00	11,562.85	19,996.49	11,885.40	139.29	136.88	-102.13	7,980.28	-2,434.37	1,519.05	1,328.55	190.49	7.974		
19,800.00	11,561.10	20,096.49	11,883.69	140.87	138.45	-102.13	8,080.26	-2,435.22	1,519.00	1,326.33	192.67	7.884		
19,900.00	11,559.35	20,196.49	11,881.98	142.44	140.03	-102.13	8,180.24	-2,436.07	1,518.95	1,324.10	194.85	7.795		
20,000.00	11,557.60	20,296.49	11,880.27	144.02	141.60	-102.13	8,280.22	-2,436.92	1,518.90	1,321.87	197.03	7.709		
20,100.00	11,555.86	20,396.49	11,878.55	145.59	143.18	-102.13	8,380.20	-2,437.77	1,518.85	1,319.64	199.22	7.624		
20,200.00	11,554.11	20,496.49	11,876.84	147.17	144.76	-102.14	8,480.19	-2,438.62	1,518.80	1,317.40	201.40	7.541		
20,300.00	11,552.36	20,596.49	11,875.13	148.76	146.34	-102.14	8,580.17	-2,439.47	1,518.76	1,315.16	203.59	7.460		
20,400.00	11,550.61	20,696.49	11,873.41	150.34	147.92	-102.14	8,680.15	-2,440.32	1,518.71	1,312.92	205.78	7.380		
20,500.00	11,548.86	20,796.49	11,871.70	151.92	149.50	-102.14	8,780.13	-2,441.17	1,518.66	1,310.68	207.98	7.302		
20,600.00	11,547.11	20,896.49	11,869.99	153.51	151.09	-102.14	8,880.11	-2,442.02	1,518.61	1,308.44	210.17	7.226		
20,700.00	11,545.36	20,996.49	11,868.27	155.09	152.68	-102.14	8,980.09	-2,442.87	1,518.56	1,306.19	212.37	7.151		
20,800.00	11,543.61	21,096.49	11,866.56	156.68	154.26	-102.15	9,080.08	-2,443.71	1,518.51	1,303.95	214.57	7.077		
20,900.00	11,541.86	21,196.49	11,864.85	158.27	155.85	-102.15	9,180.06	-2,444.56	1,518.46	1,301.70	216.77	7.005		
21,000.00	11,540.12	21,296.49	11,863.13	159.86	157.44	-102.15	9,280.04	-2,445.41	1,518.42	1,299.45	218.97	6.934		
21,100.00	11,538.37	21,396.49	11,861.42	161.45	159.04	-102.15	9,380.02	-2,446.26	1,518.37	1,297.20	221.17	6.865		
21,200.00	11,536.62	21,496.49	11,859.71	163.05	160.63	-102.15	9,480.00	-2,447.11	1,518.32	1,294.94	223.37	6.797		
21,300.00	11,534.87	21,596.49	11,858.00	164.64	162.22	-102.16	9,579.98	-2,447.96	1,518.27	1,292.69	225.58	6.731		
21,400.00	11,533.12	21,696.49	11,856.28	166.24	163.82	-102.16	9,679.97	-2,448.81	1,518.22	1,290.43	227.79	6.665		
21,500.00	11,531.37	21,796.49	11,854.57	167.83	165.41	-102.16	9,779.95	-2,449.66	1,518.17	1,288.18	230.00	6.601		
21,600.00	11,529.62	21,896.49	11,852.86	169.43	167.01	-102.16	9,879.93	-2,450.51	1,518.12	1,285.92	232.20	6.538		
21,700.00	11,527.87	21,996.49	11,851.14	171.03	168.61	-102.16	9,979.91	-2,451.36	1,518.08	1,283.66	234.42	6.476		
21,800.00	11,526.12	22,096.49	11,849.43	172.63	170.21	-102.16	10,079.89	-2,452.20	1,518.03	1,281.40	236.63	6.415		
21,862.24	11,525.04	22,158.34	11,848.37	173.63	171.20	-102.17	10,141.73	-2,452.73	1,518.00	1,279.99	238.00	6.378		
21,874.54	11,524.82	22,158.34	11,848.37	173.82	171.20	-102.17	10,141.73	-2,452.73	1,518.04	1,279.83	238.21	6.373 ES, SF		

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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3079.8' GE + 30' KB @ 3109.80usft

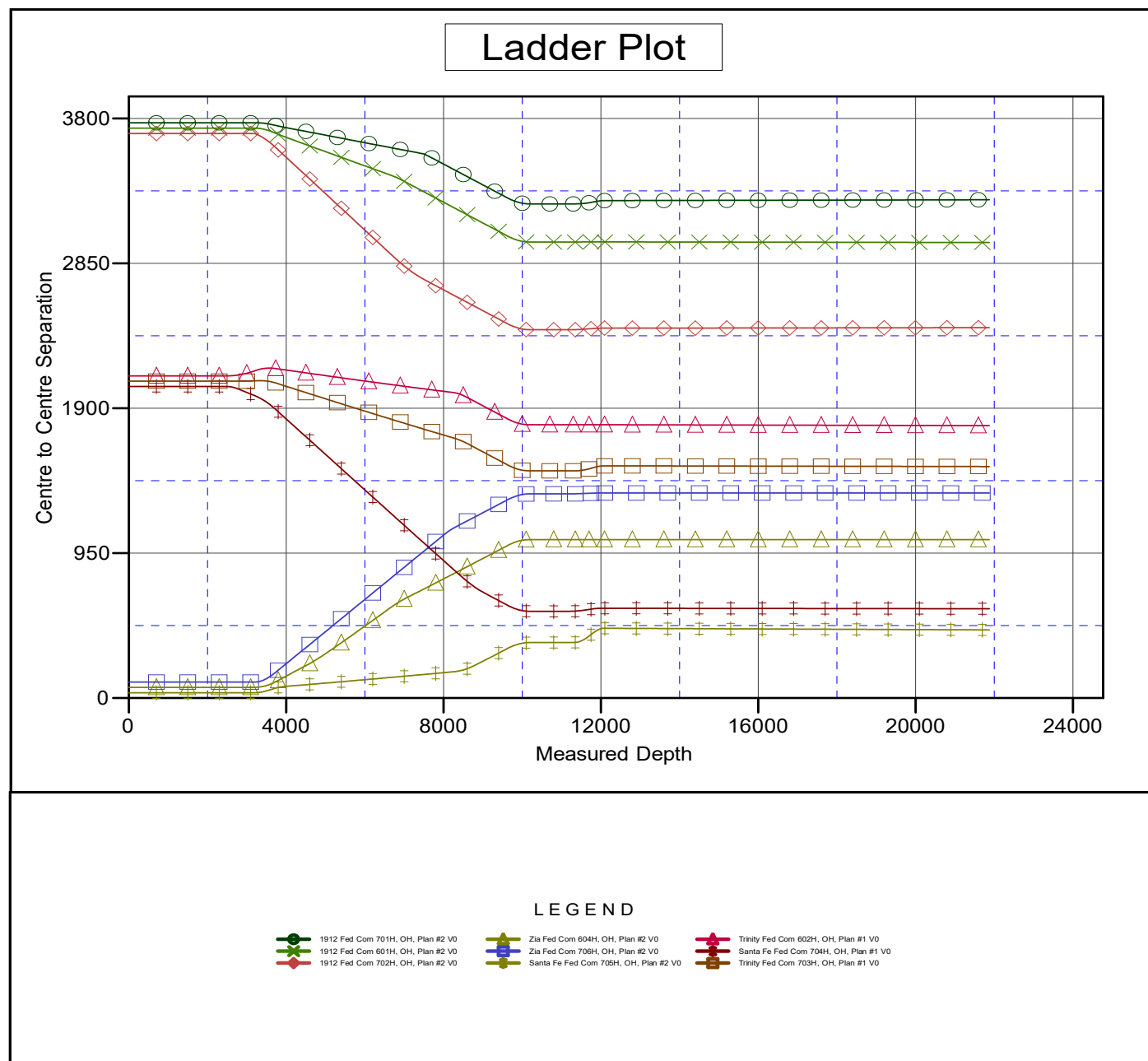
Coordinates are relative to: Santa Fe Fed Com 603H

Offset Depths are relative to Offset Datum

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

Central Meridian is -104.333334

Grid Convergence at Surface is: 0.54°



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 Santa Fe Fed Com 603H
Project:	Lea County, NM (NAD83)	TVD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3079.8' GE + 30' KB @ 3109.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Santa Fe Fed Com 603H	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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3079.8' GE + 30' KB @ 3109.80usft

Offset Depths are relative to Offset Datum

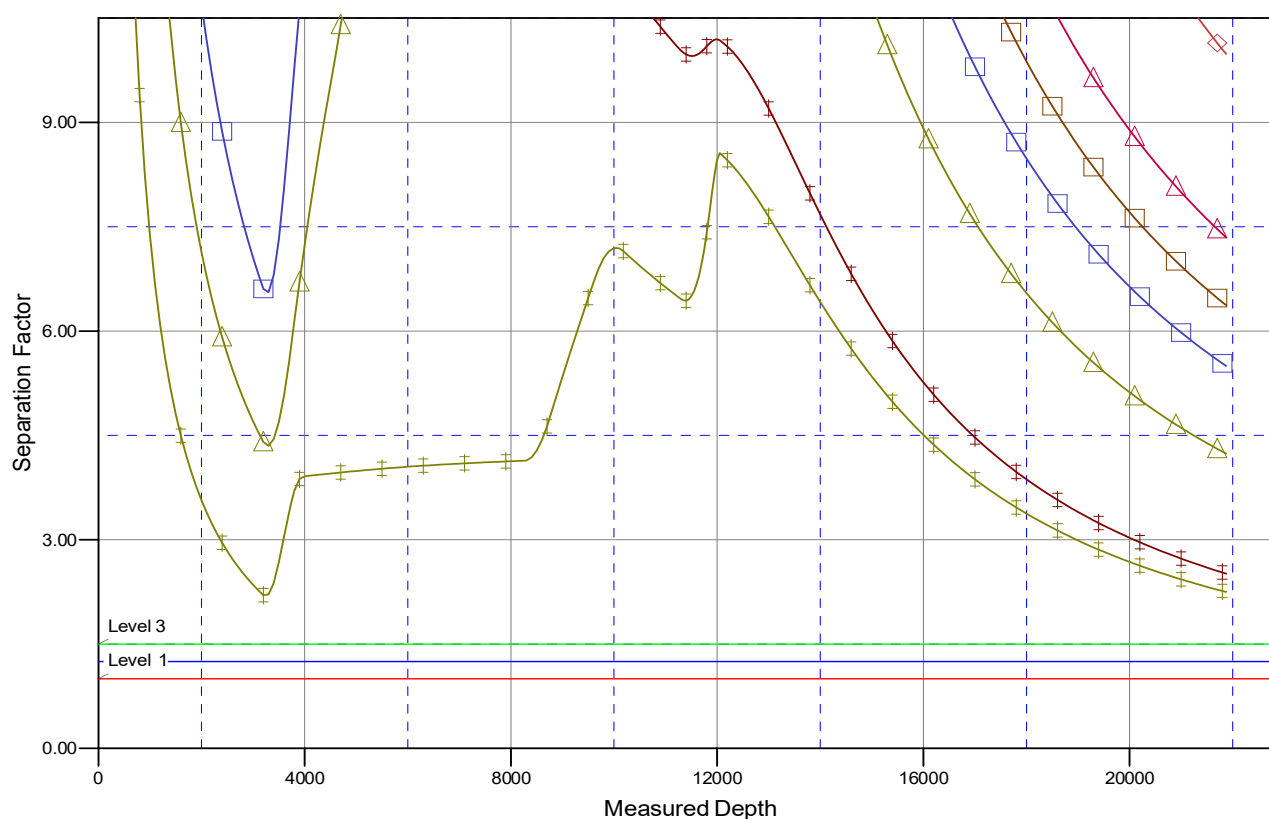
Central Meridian is -104.333334

Coordinates are relative to: Santa Fe Fed Com 603H

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

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

1912 Fed Com 701H, OH, Plan #2 V0	Zia Fed Com 604H, OH, Plan #2 V0	Trinity Fed Com 602H, OH, Plan #1 V0
1912 Fed Com 601H, OH, Plan #2 V0	Zia Fed Com 706H, OH, Plan #2 V0	Santa Fe Fed Com 704H, OH, Plan #1 V0
1912 Fed Com 702H, OH, Plan #2 V0	Santa Fe Fed Com 705H, OH, Plan #2 V0	Trinity Fed Com 703H, OH, Plan #1 V0

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

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC 1912 FEDERAL 601H 285'/S & 730'/W 150'/N & 600'/W Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC 1912 FEDERAL 701H 285'/S & 695'/W 150'/N & 350'/W Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC 1912 FEDERAL 702H 285'/S & 765'/W 150'/N & 1176'/W Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC SANTA FE FED COM 704H 710'/S & 2626'/W 150'/N & 2252'/E Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC SANTA FE FED COM 603H 250'/S & 812'/E 150'/N & 1689'/E Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC SANTA FE FED COM 705H 250'/S & 777'/E 150'/N & 1326'/E Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico
OPERATOR'S NAME: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC TRINITY FEDERAL 602H 710'/S & 2584'/W 150'/N & 1800'/W Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico

OPERATOR'S NAME:	FRANKLIN MOUNTAIN ENERGY LLC
WELL NAME & NO.:	TRINITY FEDERAL 703H
SURFACE HOLE FOOTAGE:	710'/S & 2619'/W
BOTTOM HOLE FOOTAGE:	150'/N & 2102'/W
LOCATION:	Section 24, T.25 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico
OPERATOR'S NAME:	FRANKLIN MOUNTAIN ENERGY LLC
WELL NAME & NO.:	ZIA FED COM 604H
SURFACE HOLE FOOTAGE:	250'/S & 742'/E
BOTTOM HOLE FOOTAGE:	150'/N & 650'/E
LOCATION:	Section 24, T.25 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico
OPERATOR'S NAME:	FRANKLIN MOUNTAIN ENERGY LLC
WELL NAME & NO.:	ZIA FED COM 706H
SURFACE HOLE FOOTAGE:	250'/S & 707'/E
BOTTOM HOLE FOOTAGE:	150'/N & 350'/E
LOCATION:	Section 24, T.25 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
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 - Electric Lines
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I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

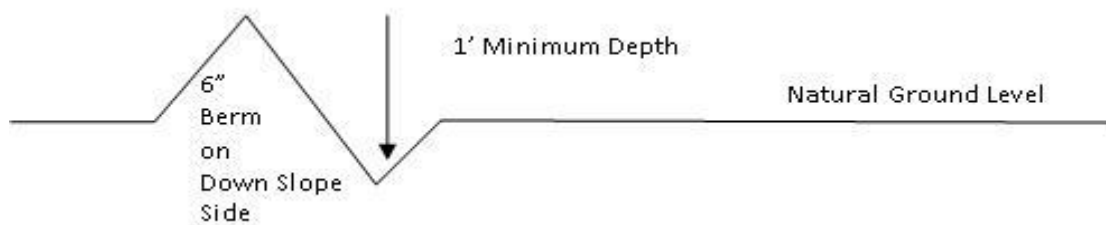
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

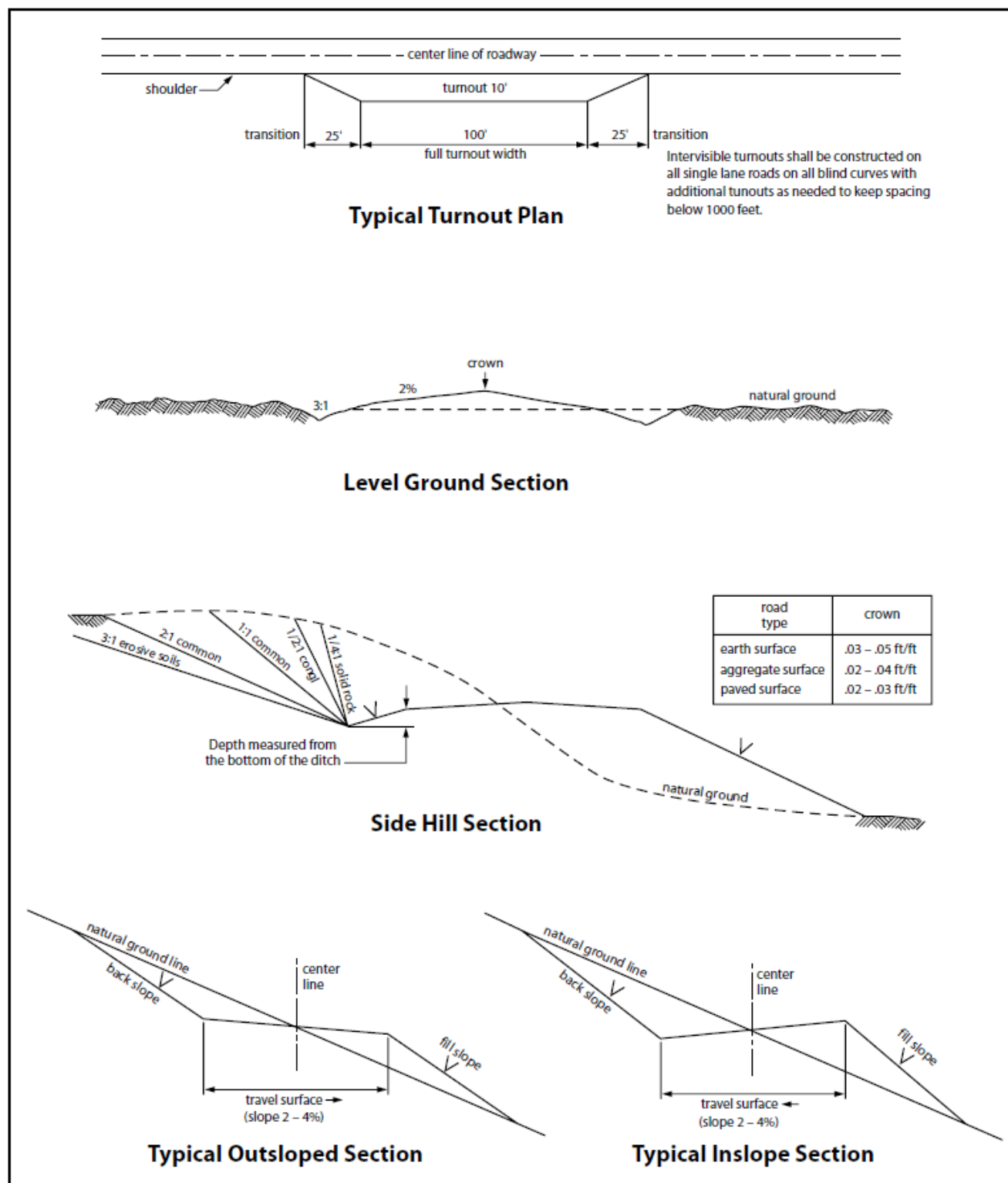


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting

Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless

otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

☐ seed mixture 1	☒ seed mixture 3
☒ seed mixture 2	☐ seed mixture 4
☐ seed mixture 2/LPC	☐ Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist,

which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Wildlife:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hydrology:

When crossing ephemeral drainages, the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Range:

Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

C. STIPULATIONS FOR OVERHEAD ELECTRIC LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 *et seq.* (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b.

A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply

with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

Wildlife:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hydrology:

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Range:

Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

D. STIPULATIONS FOR OIL AND GAS RELATED SITES

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statutes.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or

requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

() seed mixture 1

(X) seed mixture 3

- (X) seed mixture 2 () seed mixture 4
() seed mixture 2/LPC () Aplomado Falcon Mixture

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exposure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Enclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

Wildlife:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hydrology:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Range:

Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

Seed Mixture 3, for Shallow Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass (<i>Setaria macrostachya</i>)	1.0
Green Sprangletop (<i>Leptochloa dubia</i>)	2.0
Sideoats Grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Franklin Mountain Energy LLC
LEASE NO.:	NMNM114998
LOCATION:	Section 24, T.25 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Santa Fe Fed Com 603H
SURFACE HOLE FOOTAGE:	250'/S & 812'/E
BOTTOM HOLE FOOTAGE:	150'/N & 1689'/E

WELL NAME & NO.:	Santa Fe Fed Com 704H
SURFACE HOLE FOOTAGE:	710'/S & 2626'/E
BOTTOM HOLE FOOTAGE:	150'/N & 2252'/E

WELL NAME & NO.:	Santa Fe Fed Com 705H
SURFACE HOLE FOOTAGE:	250'/S & 777'/E
BOTTOM HOLE FOOTAGE:	150'/N & 1326'/E

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 **1225 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 shall be set at approximately **5400 feet** 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.

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.
 - ❖ 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.
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.
Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

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 **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to

the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

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

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 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



Santa Fe Fed Com 603H

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)	3,080'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,417'	693'			Carbonates
Salado	1,814'	1,296'			Salt, Carbonate & Clastics
Base Salt	-987'	4,097'			Shaley Carbonate & Shale
Lamar	-1,753'	4,863'			Carbonate & Clastics
Bell Canyon	-1,805'	4,915'			Sandstone - oil/gas/water
Cherry Canyon	-2,838'	5,948'			Sandstone - oil/gas/water
Brushy Canyon	-4,140'	7,250'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,391'	8,501'			Shale/Carbonates - oil/gas
Avalon	-5,414'	8,524'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,803'	9,913'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,931'	10,041'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,325'	10,435'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,774'	10,884'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,425'	11,535'			Sandstone - oil/gas/water
HZ Target at SHL	-8,593'	11,703'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,728'	11,838'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,763'	11,873'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,955'	12,065'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	4,915'	Oil
Bone Spring	9,913'	Oil
Wolfcamp	11,838'	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. Capitan Reef boundary is near surface hole locations, but exact location is unknown. While drilling, FME will be prepared to switch over to fresh water should we encounter the reef and have losses up to 50%.

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	12094	1.1	1.26	1.8	1.23
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	21874	1.32	1.42	1.21	1.09



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 ft3/sk	Water gal/sk	TOC ft	Sacks	Type of cmt	Tail Yield ft3/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	Neocem TM, 11.5 ppg, Class C 5% Salt, 0.125 pps Poly-E-Flake, 3lb/sk Kol-Seal	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	12094	341	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	11094	50%
Prod	6.75	5.5	21874	795	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11094						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' – 12,094'	Brine	8.8-10.2	28-34	N/c
12,094' – 21,874' 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 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 11,695' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,297 psig (based on 12 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 22159

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
FRANKLIN MOUNTAIN ENERGY LLC	44 Cook Street	373910	22159	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