

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. [330330]
2. Name of Operator [373910]		9. API Well No. 30-025-48582
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: 01/08/2021

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 a new 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 / 742 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.1093 / LONG: -103.31513 (TVD: 0 feet, MD: 0 feet)

PPP: SENE / 2644 FNL / 650 FEL / TWSP: 25S / RANGE: 35E / SECTION: 13 / LAT: 32.130412 / LONG: -103.314823 (TVD: 11544 feet, MD: 19300 feet)

PPP: SENE / 2643 FSL / 650 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.115877 / LONG: -103.314829 (TVD: 11636 feet, MD: 14000 feet)

PPP: SESE / 632 FSL / 650 FEL / TWSP: 25S / RANGE: 35E / SECTION: 24 / LAT: 32.11035 / LONG: -103.314832 (TVD: 11670 feet, MD: 12018 feet)

BHL: NENE / 150 FNL / 650 FEL / TWSP: 25S / RANGE: 35E / SECTION: 13 / LAT: 32.137266 / LONG: -103.31482 (TVD: 11500 feet, MD: 21812 feet)

BLM Point of Contact

Name: TENILLE ORTIZ

Title: Legal Instruments Examiner

Phone: (575) 234-2224

Email: tortiz@blm.gov

CONFIDENTIAL

Review and Appeal Rights

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-48582	² Pool Code 97088	³ Pool Name WC-025 G-08 S2535340;BONE SPRING
⁴ Property Code 330330	⁵ Property Name ZIA FED COM	⁶ Well Number 604H
⁷ OGRID No. 373910	⁸ Operator Name FRANKLIN MOUNTAIN ENERGY LLC	⁹ Elevation 3078.8

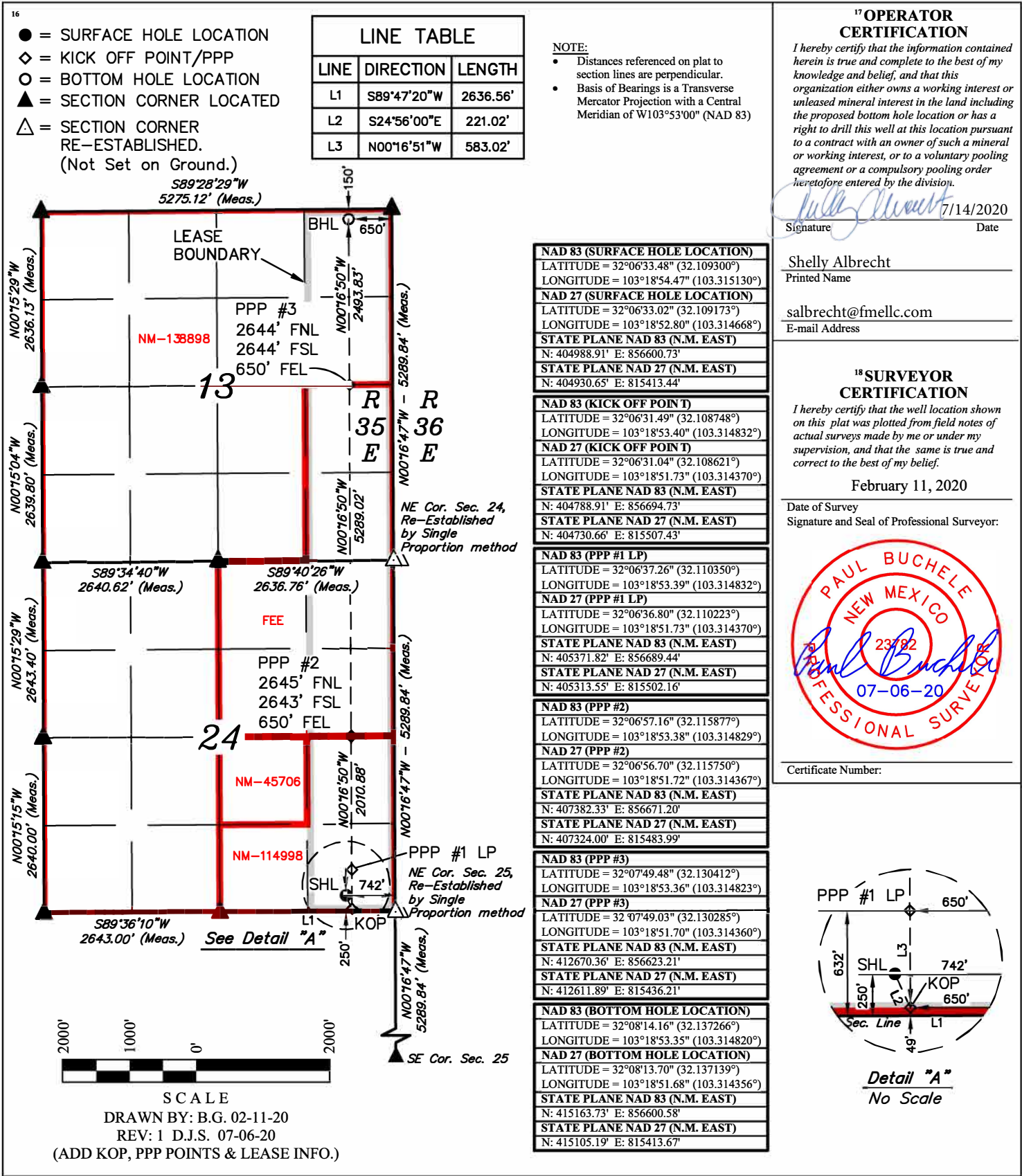
¹⁰ Surface Location

UL or lot no. P	Section 24	Township 25S	Range 35E	Lot Idn	Feet from the 250	North/South line SOUTH	Feet from the 742	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 13	Township 25S	Range 35E	Lot Idn	Feet from the 150	North/South line NORTH	Feet from the 650	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.



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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	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 604H 30-025-48582	TBD	P-24-25S-35E	250 FSL 742 FEL	1100 +/-	Flared	New well; expect to tie-in at IP
Zia Fed Com 706H	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



Zia Fed Com 604H

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)	3,079'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,441'	668'			Carbonates
Salado	1,838'	1,271'			Salt, Carbonate & Clastics
Base Salt	-963'	4,072'			Shaley Carbonate & Shale
Lamar	-1,729'	4,838'			Carbonate & Clastics
Bell Canyon	-1,781'	4,890'			Sandstone - oil/gas/water
Cherry Canyon	-2,814'	5,923'			Sandstone - oil/gas/water
Brushy Canyon	-4,116'	7,225'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,367'	8,476'			Shale/Carbonates - oil/gas
Avalon	-5,390'	8,499'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,779'	9,888'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,907'	10,016'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,301'	10,410'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,751'	10,860'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,453'	11,562'			Sandstone - oil/gas/water
HZ Target at SHL	-8,569'	11,678'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,704'	11,813'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,739'	11,848'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,931'	12,040'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	4,890'	Oil
Bone Spring	9,888'	Oil
Wolfcamp	11,813'	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	12018	1.1	1.27	1.81	1.23
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	21812	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	12018	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	11018	50%
Prod	6.75	5.5	21812	795	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11018						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' – 12,018'	Brine	8.8-10.2	28-34	N/c
12,018' – 21,812' 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 11,670' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,282 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.

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Santa Fe Fed/Zia Fed
Well: Zia Fed Com 604H
Wellbore: OH
Design: Plan #2

3078.8' GE + 30' KB @ 3108.80usft

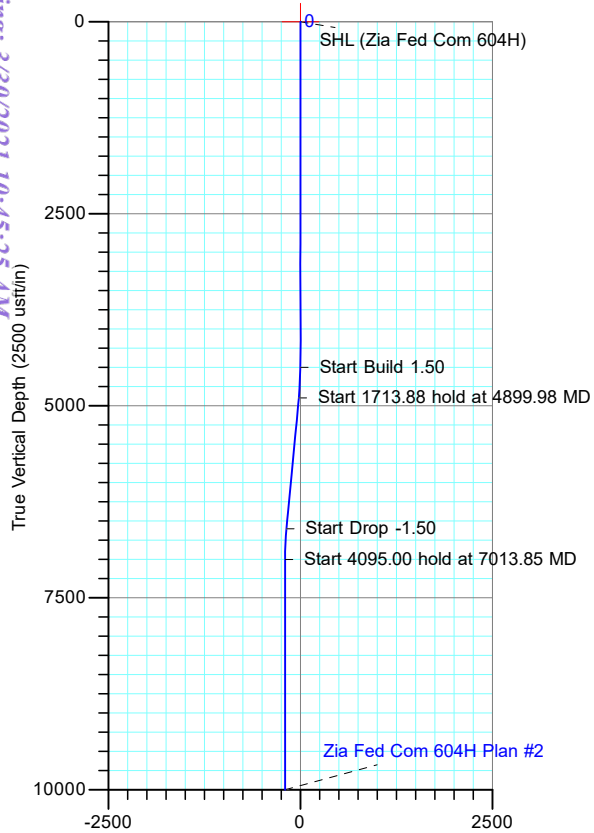


Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.02°

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

PROJECT DETAILS: Lea County, NM (NAD83)

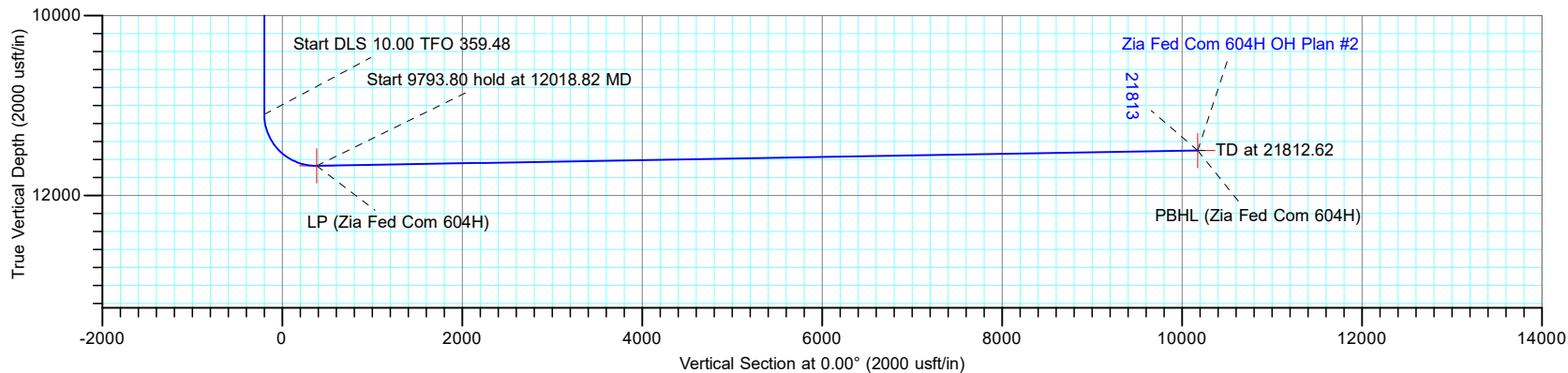
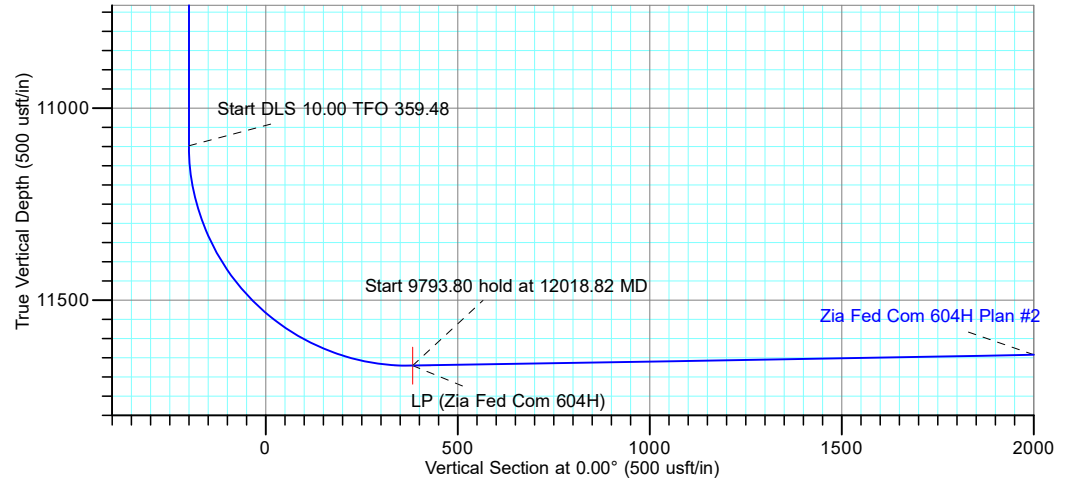
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



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	Start Build 1.50
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start 1713.88 hold at 4899.98 MD
4899.98	6.00	154.83	4899.25	-18.94	8.90	1.50	154.83	-18.94	Start Drop -1.50
6613.87	6.00	154.83	6603.75	-181.06	85.10	0.00	0.00	-181.06	Start 4095.00 hold at 7013.85 MD
7013.85	0.00	0.00	7003.00	-200.00	94.00	1.50	180.00	-199.99	Start DLS 10.00 TFO 359.48
11108.85	0.00	0.00	11098.00	-200.00	94.00	0.00	0.00	-199.99	Start 9793.80 hold at 12018.82 MD
12018.82	91.00	359.48	11670.87	382.91	88.71	10.00	359.48	382.91	TD at 21812.62
21812.62	91.00	359.48	11500.40	10174.82	-0.15	0.00	0.00	10174.82	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP (Zia Fed Com 604H)	11670.87	382.91	88.71	32.110350	-103.314832
PBHL (Zia Fed Com 604H)	11500.40	10174.82	-0.15	32.137266	-103.314820
SHL (Zia Fed Com 604H)	0.00	0.00	0.00	32.109300	-103.315130



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

Plan: Plan #2 (Zia Fed Com 604H/OH)
Santa Fe Fed/Zia Fed
Created By: Dustin Ault Date: 23:42, June 21 2020
Date: _____
Approved: _____ Date: _____

Franklin Mountain Energy

Project: Lea County, NM (NAD83)
Site: Santa Fe Fed/Zia Fed
Well: Zia Fed Com 604H
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

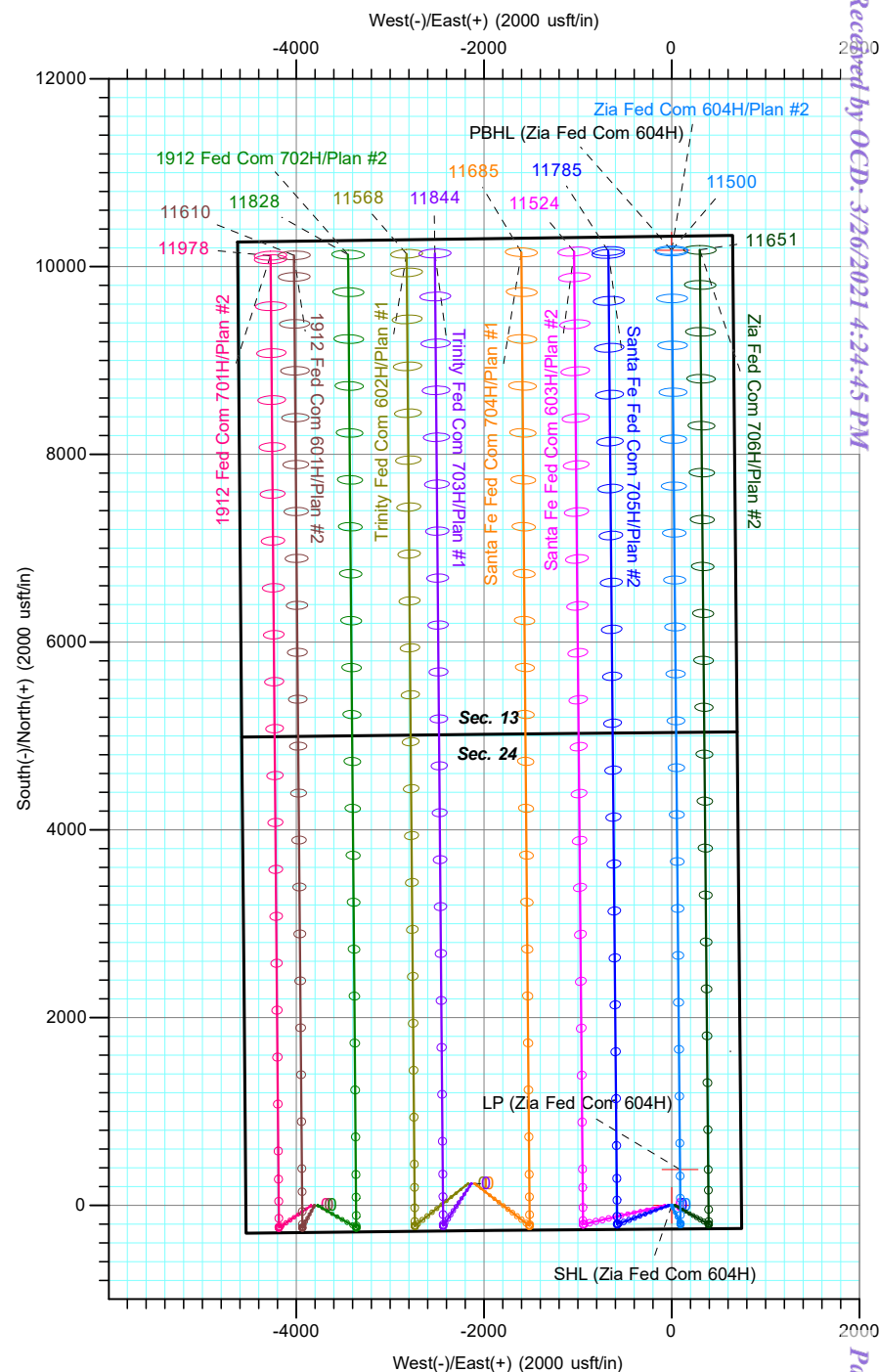
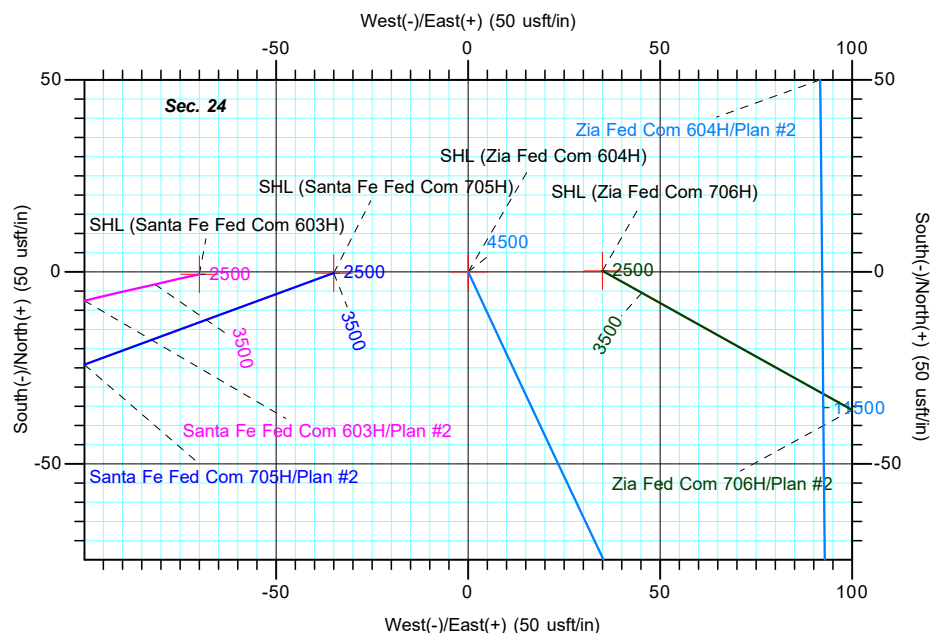


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP (Zia Fed Com 604H)	11670.87	382.91	88.71	405371.82	856689.44	32.110350	-103.314832
PBHL (Zia Fed Com 604H)	11500.40	10174.82	-0.15	415163.73	856600.58	32.137266	-103.314820
SHL (Zia Fed Com 604H)	0.00	0.00	0.00	404988.91	856600.73	32.109300	-103.315130

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
4899.98	6.00	154.83	4899.25	-18.94	8.90	1.50	154.83	-18.94	Start 1713.88 hold at 4899.98 MD
6613.87	6.00	154.83	6603.75	-181.06	85.10	0.00	0.00	-181.06	Start Drop -1.50
7013.85	0.00	0.00	7003.00	-200.00	94.00	1.50	180.00	-199.99	Start 4095.00 hold at 7013.85 MD
11108.85	0.00	0.00	11098.00	-200.00	94.00	0.00	0.00	-199.99	Start DLS 10.00 TFO 359.48
12018.82	91.00	359.48	11670.87	382.91	88.71	10.00	359.48	382.91	Start 9793.80 hold at 12018.82 MD
21812.62	91.00	359.48	11500.40	10174.82	-0.15	0.00	0.00	10174.82	TD at 21812.62



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

Plan: Plan #2 (Zia Fed Com 604H/OH)
Santa Fe Fed/Zia Fed
Created By: Dustin Ault
Date: 23:43, June 21 2020
Approved: _____
Date: _____



Franklin Mountain Energy

Lea County, NM (NAD83)

Santa Fe Fed/Zia Fed

Zia Fed Com 604H

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 Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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	Zia Fed Com 604H					
Well Position	+N/-S	0.41 usft	Northing:	404,988.91 usft	Latitude:	32.109300
	+E/-W	70.06 usft	Easting:	856,600.73 usft	Longitude:	-103.315130
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,078.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/10/2020	6.57	59.88	47,586.43053515

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	0.00

Plan Survey Tool Program	Date	6/21/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,812.62 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	
4,500.00	0.00	0.01	4,500.00	0.00	0.00	0.00	0.00	0.00	0.01	
4,899.98	6.00	154.83	4,899.25	-18.94	8.90	1.50	1.50	0.00	154.83	
6,613.87	6.00	154.83	6,603.75	-181.06	85.10	0.00	0.00	0.00	0.00	
7,013.85	0.00	0.01	7,003.00	-200.00	94.00	1.50	-1.50	0.00	180.00	
11,108.85	0.00	0.01	11,098.00	-200.00	94.00	0.00	0.00	0.00	0.01	
12,018.82	91.00	359.48	11,670.87	382.91	88.71	10.00	10.00	-0.06	359.48	
21,812.62	91.00	359.48	11,500.40	10,174.82	-0.15	0.00	0.00	0.00	0.00	PBHL (Zia Fed Com 604H)



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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 (Zia Fed Com 604H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
4,600.00	1.50	154.83	4,599.99	-1.18	0.56	-1.18	1.50	1.50	0.00
4,700.00	3.00	154.83	4,699.91	-4.74	2.23	-4.74	1.50	1.50	0.00
4,800.00	4.50	154.83	4,799.69	-10.66	5.01	-10.66	1.50	1.50	0.00
4,899.98	6.00	154.83	4,899.25	-18.94	8.90	-18.94	1.50	1.50	0.00
Start 1713.88 hold at 4899.98 MD									



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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)
5,000.00	6.00	154.83	4,998.72	-28.40	13.35	-28.40	0.00	0.00	0.00
5,100.00	6.00	154.83	5,098.17	-37.86	17.79	-37.86	0.00	0.00	0.00
5,200.00	6.00	154.83	5,197.63	-47.32	22.24	-47.31	0.00	0.00	0.00
5,300.00	6.00	154.83	5,297.08	-56.78	26.68	-56.77	0.00	0.00	0.00
5,400.00	6.00	154.83	5,396.53	-66.24	31.13	-66.23	0.00	0.00	0.00
5,500.00	6.00	154.83	5,495.98	-75.70	35.58	-75.69	0.00	0.00	0.00
5,600.00	6.00	154.83	5,595.44	-85.16	40.02	-85.15	0.00	0.00	0.00
5,700.00	6.00	154.83	5,694.89	-94.62	44.47	-94.61	0.00	0.00	0.00
5,800.00	6.00	154.83	5,794.34	-104.07	48.92	-104.07	0.00	0.00	0.00
5,900.00	6.00	154.83	5,893.79	-113.53	53.36	-113.53	0.00	0.00	0.00
6,000.00	6.00	154.83	5,993.24	-122.99	57.81	-122.99	0.00	0.00	0.00
6,100.00	6.00	154.83	6,092.70	-132.45	62.25	-132.45	0.00	0.00	0.00
6,200.00	6.00	154.83	6,192.15	-141.91	66.70	-141.91	0.00	0.00	0.00
6,300.00	6.00	154.83	6,291.60	-151.37	71.15	-151.37	0.00	0.00	0.00
6,400.00	6.00	154.83	6,391.05	-160.83	75.59	-160.83	0.00	0.00	0.00
6,500.00	6.00	154.83	6,490.51	-170.29	80.04	-170.29	0.00	0.00	0.00
6,600.00	6.00	154.83	6,589.96	-179.75	84.48	-179.75	0.00	0.00	0.00
6,613.87	6.00	154.83	6,603.75	-181.06	85.10	-181.06	0.00	0.00	0.00
Start Drop -1.50									
6,700.00	4.71	154.83	6,689.50	-188.34	88.52	-188.33	1.50	-1.50	0.00
6,800.00	3.21	154.83	6,789.26	-194.58	91.45	-194.58	1.50	-1.50	0.00
6,900.00	1.71	154.83	6,889.17	-198.46	93.28	-198.46	1.50	-1.50	0.00
7,000.00	0.21	154.83	6,989.15	-199.98	93.99	-199.97	1.50	-1.50	0.00
7,013.85	0.00	0.01	7,003.00	-200.00	94.00	-199.99	1.50	-1.50	0.00
Start 4095.00 hold at 7013.85 MD									
7,100.00	0.00	0.00	7,089.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,200.00	0.00	0.00	7,189.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,300.00	0.00	0.00	7,289.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,400.00	0.00	0.00	7,389.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,500.00	0.00	0.00	7,489.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,600.00	0.00	0.00	7,589.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,700.00	0.00	0.00	7,689.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,800.00	0.00	0.00	7,789.15	-200.00	94.00	-199.99	0.00	0.00	0.00
7,900.00	0.00	0.00	7,889.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,000.00	0.00	0.00	7,989.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,100.00	0.00	0.00	8,089.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,200.00	0.00	0.00	8,189.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,300.00	0.00	0.00	8,289.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,400.00	0.00	0.00	8,389.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,500.00	0.00	0.00	8,489.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,600.00	0.00	0.00	8,589.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,700.00	0.00	0.00	8,689.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,800.00	0.00	0.00	8,789.15	-200.00	94.00	-199.99	0.00	0.00	0.00
8,900.00	0.00	0.00	8,889.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,000.00	0.00	0.00	8,989.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,100.00	0.00	0.00	9,089.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,200.00	0.00	0.00	9,189.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,300.00	0.00	0.00	9,289.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,400.00	0.00	0.00	9,389.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,500.00	0.00	0.00	9,489.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,600.00	0.00	0.00	9,589.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,700.00	0.00	0.00	9,689.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,800.00	0.00	0.00	9,789.15	-200.00	94.00	-199.99	0.00	0.00	0.00
9,900.00	0.00	0.00	9,889.15	-200.00	94.00	-199.99	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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)
10,000.00	0.00	0.00	9,989.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,100.00	0.00	0.00	10,089.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,200.00	0.00	0.00	10,189.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,300.00	0.00	0.00	10,289.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,400.00	0.00	0.00	10,389.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,500.00	0.00	0.00	10,489.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,600.00	0.00	0.00	10,589.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,700.00	0.00	0.00	10,689.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,800.00	0.00	0.00	10,789.15	-200.00	94.00	-199.99	0.00	0.00	0.00
10,900.00	0.00	0.00	10,889.15	-200.00	94.00	-199.99	0.00	0.00	0.00
11,000.00	0.00	0.00	10,989.15	-200.00	94.00	-199.99	0.00	0.00	0.00
11,108.85	0.00	0.00	11,098.00	-200.00	94.00	-199.99	0.00	0.00	0.00
Start DLS 10.00 TFO 359.48									
11,150.00	4.12	359.48	11,139.12	-198.52	93.99	-198.52	10.00	10.00	0.00
11,200.00	9.12	359.48	11,188.77	-192.77	93.93	-192.76	10.00	10.00	0.00
11,250.00	14.12	359.48	11,237.73	-182.70	93.84	-182.70	10.00	10.00	0.00
11,300.00	19.12	359.48	11,285.62	-168.41	93.71	-168.40	10.00	10.00	0.00
11,350.00	24.12	359.48	11,332.09	-150.00	93.55	-149.99	10.00	10.00	0.00
11,400.00	29.12	359.48	11,376.78	-127.61	93.34	-127.60	10.00	10.00	0.00
11,450.00	34.12	359.48	11,419.35	-101.41	93.11	-101.40	10.00	10.00	0.00
11,500.00	39.12	359.48	11,459.47	-71.59	92.83	-71.59	10.00	10.00	0.00
11,550.00	44.12	359.48	11,496.84	-38.40	92.53	-38.39	10.00	10.00	0.00
11,600.00	49.12	359.48	11,531.17	-2.08	92.20	-2.07	10.00	10.00	0.00
11,650.00	54.12	359.48	11,562.21	37.10	91.85	37.11	10.00	10.00	0.00
11,700.00	59.12	359.48	11,589.71	78.84	91.47	78.84	10.00	10.00	0.00
11,750.00	64.12	359.48	11,613.47	122.81	91.07	122.82	10.00	10.00	0.00
11,800.00	69.12	359.48	11,633.31	168.69	90.65	168.69	10.00	10.00	0.00
11,850.00	74.12	359.48	11,649.08	216.12	90.22	216.13	10.00	10.00	0.00
11,900.00	79.12	359.48	11,660.65	264.74	89.78	264.75	10.00	10.00	0.00
11,950.00	84.12	359.48	11,667.94	314.19	89.33	314.20	10.00	10.00	0.00
12,000.00	89.12	359.48	11,670.89	364.09	88.88	364.09	10.00	10.00	0.00
12,018.83	91.00	359.48	11,670.87	382.91	88.71	382.92	10.00	10.00	0.00
Start 9793.80 hold at 12018.82 MD - LP (Zia Fed Com 604H)									
12,100.00	91.00	359.48	11,669.46	464.07	87.97	464.07	0.00	0.00	0.00
12,200.00	91.00	359.48	11,667.72	564.05	87.07	564.06	0.00	0.00	0.00
12,300.00	91.00	359.48	11,665.98	664.03	86.16	664.04	0.00	0.00	0.00
12,400.00	91.00	359.48	11,664.24	764.01	85.25	764.02	0.00	0.00	0.00
12,500.00	91.00	359.48	11,662.50	863.99	84.34	864.00	0.00	0.00	0.00
12,600.00	91.00	359.48	11,660.76	963.97	83.44	963.98	0.00	0.00	0.00
12,700.00	91.00	359.48	11,659.01	1,063.95	82.53	1,063.96	0.00	0.00	0.00
12,800.00	91.00	359.48	11,657.27	1,163.93	81.62	1,163.94	0.00	0.00	0.00
12,900.00	91.00	359.48	11,655.53	1,263.91	80.72	1,263.92	0.00	0.00	0.00
13,000.00	91.00	359.48	11,653.79	1,363.89	79.81	1,363.90	0.00	0.00	0.00
13,100.00	91.00	359.48	11,652.05	1,463.88	78.90	1,463.88	0.00	0.00	0.00
13,200.00	91.00	359.48	11,650.31	1,563.86	77.99	1,563.86	0.00	0.00	0.00
13,300.00	91.00	359.48	11,648.57	1,663.84	77.09	1,663.84	0.00	0.00	0.00
13,400.00	91.00	359.48	11,646.83	1,763.82	76.18	1,763.82	0.00	0.00	0.00
13,500.00	91.00	359.48	11,645.09	1,863.80	75.27	1,863.80	0.00	0.00	0.00
13,600.00	91.00	359.48	11,643.35	1,963.78	74.36	1,963.78	0.00	0.00	0.00
13,700.00	91.00	359.48	11,641.61	2,063.76	73.46	2,063.77	0.00	0.00	0.00
13,800.00	91.00	359.48	11,639.87	2,163.74	72.55	2,163.75	0.00	0.00	0.00
13,900.00	91.00	359.48	11,638.13	2,263.72	71.64	2,263.73	0.00	0.00	0.00
14,000.00	91.00	359.48	11,636.39	2,363.70	70.73	2,363.71	0.00	0.00	0.00
14,100.00	91.00	359.48	11,634.65	2,463.68	69.83	2,463.69	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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)
14,200.00	91.00	359.48	11,632.91	2,563.66	68.92	2,563.67	0.00	0.00	0.00
14,300.00	91.00	359.48	11,631.17	2,663.64	68.01	2,663.65	0.00	0.00	0.00
14,400.00	91.00	359.48	11,629.42	2,763.63	67.11	2,763.63	0.00	0.00	0.00
14,500.00	91.00	359.48	11,627.68	2,863.61	66.20	2,863.61	0.00	0.00	0.00
14,600.00	91.00	359.48	11,625.94	2,963.59	65.29	2,963.59	0.00	0.00	0.00
14,700.00	91.00	359.48	11,624.20	3,063.57	64.38	3,063.57	0.00	0.00	0.00
14,800.00	91.00	359.48	11,622.46	3,163.55	63.48	3,163.55	0.00	0.00	0.00
14,900.00	91.00	359.48	11,620.72	3,263.53	62.57	3,263.53	0.00	0.00	0.00
15,000.00	91.00	359.48	11,618.98	3,363.51	61.66	3,363.51	0.00	0.00	0.00
15,100.00	91.00	359.48	11,617.24	3,463.49	60.75	3,463.49	0.00	0.00	0.00
15,200.00	91.00	359.48	11,615.50	3,563.47	59.85	3,563.48	0.00	0.00	0.00
15,300.00	91.00	359.48	11,613.76	3,663.45	58.94	3,663.46	0.00	0.00	0.00
15,400.00	91.00	359.48	11,612.02	3,763.43	58.03	3,763.44	0.00	0.00	0.00
15,500.00	91.00	359.48	11,610.28	3,863.41	57.13	3,863.42	0.00	0.00	0.00
15,600.00	91.00	359.48	11,608.54	3,963.39	56.22	3,963.40	0.00	0.00	0.00
15,700.00	91.00	359.48	11,606.80	4,063.37	55.31	4,063.38	0.00	0.00	0.00
15,800.00	91.00	359.48	11,605.06	4,163.36	54.40	4,163.36	0.00	0.00	0.00
15,900.00	91.00	359.48	11,603.32	4,263.34	53.50	4,263.34	0.00	0.00	0.00
16,000.00	91.00	359.48	11,601.57	4,363.32	52.59	4,363.32	0.00	0.00	0.00
16,100.00	91.00	359.48	11,599.83	4,463.30	51.68	4,463.30	0.00	0.00	0.00
16,200.00	91.00	359.48	11,598.09	4,563.28	50.77	4,563.28	0.00	0.00	0.00
16,300.00	91.00	359.48	11,596.35	4,663.26	49.87	4,663.26	0.00	0.00	0.00
16,400.00	91.00	359.48	11,594.61	4,763.24	48.96	4,763.24	0.00	0.00	0.00
16,500.00	91.00	359.48	11,592.87	4,863.22	48.05	4,863.22	0.00	0.00	0.00
16,600.00	91.00	359.48	11,591.13	4,963.20	47.14	4,963.20	0.00	0.00	0.00
16,700.00	91.00	359.48	11,589.39	5,063.18	46.24	5,063.19	0.00	0.00	0.00
16,800.00	91.00	359.48	11,587.65	5,163.16	45.33	5,163.17	0.00	0.00	0.00
16,900.00	91.00	359.48	11,585.91	5,263.14	44.42	5,263.15	0.00	0.00	0.00
17,000.00	91.00	359.48	11,584.17	5,363.12	43.52	5,363.13	0.00	0.00	0.00
17,100.00	91.00	359.48	11,582.43	5,463.11	42.61	5,463.11	0.00	0.00	0.00
17,200.00	91.00	359.48	11,580.69	5,563.09	41.70	5,563.09	0.00	0.00	0.00
17,300.00	91.00	359.48	11,578.95	5,663.07	40.79	5,663.07	0.00	0.00	0.00
17,400.00	91.00	359.48	11,577.21	5,763.05	39.89	5,763.05	0.00	0.00	0.00
17,500.00	91.00	359.48	11,575.47	5,863.03	38.98	5,863.03	0.00	0.00	0.00
17,600.00	91.00	359.48	11,573.73	5,963.01	38.07	5,963.01	0.00	0.00	0.00
17,700.00	91.00	359.48	11,571.98	6,062.99	37.16	6,062.99	0.00	0.00	0.00
17,800.00	91.00	359.48	11,570.24	6,162.97	36.26	6,162.97	0.00	0.00	0.00
17,900.00	91.00	359.48	11,568.50	6,262.95	35.35	6,262.95	0.00	0.00	0.00
18,000.00	91.00	359.48	11,566.76	6,362.93	34.44	6,362.93	0.00	0.00	0.00
18,100.00	91.00	359.48	11,565.02	6,462.91	33.54	6,462.91	0.00	0.00	0.00
18,200.00	91.00	359.48	11,563.28	6,562.89	32.63	6,562.90	0.00	0.00	0.00
18,300.00	91.00	359.48	11,561.54	6,662.87	31.72	6,662.88	0.00	0.00	0.00
18,400.00	91.00	359.48	11,559.80	6,762.85	30.81	6,762.86	0.00	0.00	0.00
18,500.00	91.00	359.48	11,558.06	6,862.84	29.91	6,862.84	0.00	0.00	0.00
18,600.00	91.00	359.48	11,556.32	6,962.82	29.00	6,962.82	0.00	0.00	0.00
18,700.00	91.00	359.48	11,554.58	7,062.80	28.09	7,062.80	0.00	0.00	0.00
18,800.00	91.00	359.48	11,552.84	7,162.78	27.18	7,162.78	0.00	0.00	0.00
18,900.00	91.00	359.48	11,551.10	7,262.76	26.28	7,262.76	0.00	0.00	0.00
19,000.00	91.00	359.48	11,549.36	7,362.74	25.37	7,362.74	0.00	0.00	0.00
19,100.00	91.00	359.48	11,547.62	7,462.72	24.46	7,462.72	0.00	0.00	0.00
19,200.00	91.00	359.48	11,545.88	7,562.70	23.55	7,562.70	0.00	0.00	0.00
19,300.00	91.00	359.48	11,544.14	7,662.68	22.65	7,662.68	0.00	0.00	0.00
19,400.00	91.00	359.48	11,542.39	7,762.66	21.74	7,762.66	0.00	0.00	0.00
19,500.00	91.00	359.48	11,540.65	7,862.64	20.83	7,862.64	0.00	0.00	0.00



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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)	
19,600.00	91.00	359.48	11,538.91	7,962.62	19.93	7,962.62	0.00	0.00	0.00	
19,700.00	91.00	359.48	11,537.17	8,062.60	19.02	8,062.61	0.00	0.00	0.00	
19,800.00	91.00	359.48	11,535.43	8,162.58	18.11	8,162.59	0.00	0.00	0.00	
19,900.00	91.00	359.48	11,533.69	8,262.57	17.20	8,262.57	0.00	0.00	0.00	
20,000.00	91.00	359.48	11,531.95	8,362.55	16.30	8,362.55	0.00	0.00	0.00	
20,100.00	91.00	359.48	11,530.21	8,462.53	15.39	8,462.53	0.00	0.00	0.00	
20,200.00	91.00	359.48	11,528.47	8,562.51	14.48	8,562.51	0.00	0.00	0.00	
20,300.00	91.00	359.48	11,526.73	8,662.49	13.57	8,662.49	0.00	0.00	0.00	
20,400.00	91.00	359.48	11,524.99	8,762.47	12.67	8,762.47	0.00	0.00	0.00	
20,500.00	91.00	359.48	11,523.25	8,862.45	11.76	8,862.45	0.00	0.00	0.00	
20,600.00	91.00	359.48	11,521.51	8,962.43	10.85	8,962.43	0.00	0.00	0.00	
20,700.00	91.00	359.48	11,519.77	9,062.41	9.94	9,062.41	0.00	0.00	0.00	
20,800.00	91.00	359.48	11,518.03	9,162.39	9.04	9,162.39	0.00	0.00	0.00	
20,900.00	91.00	359.48	11,516.29	9,262.37	8.13	9,262.37	0.00	0.00	0.00	
21,000.00	91.00	359.48	11,514.54	9,362.35	7.22	9,362.35	0.00	0.00	0.00	
21,100.00	91.00	359.48	11,512.80	9,462.33	6.32	9,462.33	0.00	0.00	0.00	
21,200.00	91.00	359.48	11,511.06	9,562.32	5.41	9,562.32	0.00	0.00	0.00	
21,300.00	91.00	359.48	11,509.32	9,662.30	4.50	9,662.30	0.00	0.00	0.00	
21,400.00	91.00	359.48	11,507.58	9,762.28	3.59	9,762.28	0.00	0.00	0.00	
21,500.00	91.00	359.48	11,505.84	9,862.26	2.69	9,862.26	0.00	0.00	0.00	
21,600.00	91.00	359.48	11,504.10	9,962.24	1.78	9,962.24	0.00	0.00	0.00	
21,700.00	91.00	359.48	11,502.36	10,062.22	0.87	10,062.22	0.00	0.00	0.00	
21,800.00	91.00	359.48	11,500.62	10,162.20	-0.04	10,162.20	0.00	0.00	0.00	
21,812.62	91.00	359.48	11,500.40	10,174.82	-0.15	10,174.82	0.00	0.00	0.00	
TD at 21812.62 - PBHL (Zia Fed Com 604H)										

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 (Zia Fed Com 604H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	404,988.91	856,600.73	32.109300	-103.315130	
PBHL (Zia Fed Com 604) - plan hits target center - Point	0.00	0.00	11,500.40	10,174.82	-0.15	415,163.73	856,600.58	32.137266	-103.314820	
LP (Zia Fed Com 604H) - plan hits target center - Point	0.00	0.00	11,670.87	382.91	88.71	405,371.82	856,689.44	32.110351	-103.314832	



Total Directional Services

Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Company:	Franklin Mountain Energy	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Project:	Lea County, NM (NAD83)	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site:	Santa Fe Fed/Zia Fed	North Reference:	Grid
Well:	Zia Fed Com 604H	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)	
4,500.00	4,500.00	0.00	0.00	Start Build 1.50
4,899.98	4,899.25	-18.94	8.90	Start 1713.88 hold at 4899.98 MD
6,613.87	6,603.75	-181.06	85.10	Start Drop -1.50
7,013.85	7,003.00	-200.00	94.00	Start 4095.00 hold at 7013.85 MD
11,108.85	11,098.00	-200.00	94.00	Start DLS 10.00 TFO 359.48
12,018.82	11,670.87	382.91	88.71	Start 9793.80 hold at 12018.82 MD
21,812.62	11,500.40	10,174.82	-0.15	TD at 21812.62



Franklin Mountain Energy

Lea County, NM (NAD83)

Santa Fe Fed/Zia Fed

Zia Fed Com 604H

OH

Plan #2

Anticollision Report

21 June, 2020





Total Directional Services



Company:	Franklin Mountain Energy	Local Co-ordinate Reference:	Well Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	21,812.62	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	3,400.62	3,433.12	3,807.07	3,790.08	224.042	CC
1912 Fed Com 601H - OH - Plan #2	21,812.62	21,929.37	4,026.07	3,781.00	16.428	ES, SF
1912 Fed Com 701H - OH - Plan #2	3,108.48	3,143.78	3,842.06	3,826.54	247.574	CC
1912 Fed Com 701H - OH - Plan #2	3,200.00	3,200.00	3,842.22	3,826.33	241.763	ES
1912 Fed Com 701H - OH - Plan #2	21,812.62	22,238.31	4,301.20	4,057.36	17.639	SF
1912 Fed Com 702H - OH - Plan #2	11,108.85	11,156.05	3,454.27	3,398.98	62.481	CC
1912 Fed Com 702H - OH - Plan #2	21,812.62	22,099.37	3,464.15	3,219.83	14.179	ES, SF
Santa Fe Fed/Zia Fed						
Santa Fe Fed Com 603H - OH - Plan #2	3,116.33	3,117.33	69.98	54.51	4.523	CC
Santa Fe Fed Com 603H - OH - Plan #2	3,200.00	3,200.98	69.98	54.09	4.403	ES
Santa Fe Fed Com 603H - OH - Plan #2	21,812.62	21,874.54	1,039.13	793.83	4.236	SF
Santa Fe Fed Com 705H - OH - Plan #2	3,416.43	3,417.13	34.99	18.00	2.059	CC
Santa Fe Fed Com 705H - OH - Plan #2	3,500.00	3,500.69	34.99	17.58	2.009	ES, SF
Zia Fed Com 706H - OH - Plan #2	3,200.00	3,199.70	35.00	19.11	2.202	CC, ES
Zia Fed Com 706H - OH - Plan #2	21,812.62	21,973.00	335.45	126.61	1.606	SF
Trinity Fed/Santa Fe Fed						
Santa Fe Fed Com 704H - OH - Plan #1	11,108.85	11,147.03	1,607.84	1,552.18	28.887	CC
Santa Fe Fed Com 704H - OH - Plan #1	21,812.62	22,023.56	1,612.42	1,369.94	6.650	ES, SF
Trinity Fed Com 602H - OH - Plan #1	2,415.88	2,418.18	2,182.10	2,170.16	182.829	CC
Trinity Fed Com 602H - OH - Plan #1	2,500.00	2,500.00	2,182.10	2,169.74	176.606	ES
Trinity Fed Com 602H - OH - Plan #1	21,812.62	21,898.12	2,825.57	2,582.22	11.611	SF
Trinity Fed Com 703H - OH - Plan #1	2,915.10	2,919.60	2,147.34	2,132.87	148.384	CC
Trinity Fed Com 703H - OH - Plan #1	3,000.00	3,000.00	2,147.34	2,132.45	144.209	ES
Trinity Fed Com 703H - OH - Plan #1	21,812.62	22,158.34	2,546.06	2,304.17	10.526	SF

Offset Design													Offset Site Error:	
1912 Fed Com - 1912 Fed Com 601H - OH - Plan #2													0.00 usf	
Survey Program: 0-OWSG (Rev2) MWD													Offset Well Error: 0.00 usf	
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)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	32.50	32.50	0.00	0.04	-90.02	-1.22	-3,807.07	3,807.07					
100.00	100.00	132.50	132.50	0.13	0.24	-90.02	-1.22	-3,807.07	3,807.07	3,806.80	0.27	N/A		
200.00	200.00	232.50	232.50	0.48	0.60	-90.02	-1.22	-3,807.07	3,807.07	3,806.30	0.77	4,936.663		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
300.00	300.00	332.50	332.50	0.84	0.96	-90.02	-1.22	-3,807.07	3,807.07	3,805.79	1.28	2,982.693		
400.00	400.00	432.50	432.50	1.20	1.32	-90.02	-1.22	-3,807.07	3,807.07	3,805.29	1.78	2,135.701		
500.00	500.00	532.50	532.50	1.56	1.68	-90.02	-1.22	-3,807.07	3,807.07	3,804.78	2.29	1,663.116		
600.00	600.00	632.50	632.50	1.92	2.03	-90.02	-1.22	-3,807.07	3,807.07	3,804.27	2.80	1,361.708		
700.00	700.00	732.50	732.50	2.28	2.39	-90.02	-1.22	-3,807.07	3,807.07	3,803.77	3.30	1,152.758		
800.00	800.00	832.50	832.50	2.63	2.75	-90.02	-1.22	-3,807.07	3,807.07	3,803.26	3.81	999.390		
900.00	900.00	932.50	932.50	2.99	3.11	-90.02	-1.22	-3,807.07	3,807.07	3,802.75	4.32	882.033		
1,000.00	1,000.00	1,032.50	1,032.50	3.35	3.47	-90.02	-1.22	-3,807.07	3,807.07	3,802.25	4.82	789.338		
1,100.00	1,100.00	1,132.50	1,132.50	3.71	3.83	-90.02	-1.22	-3,807.07	3,807.07	3,801.74	5.33	714.271		
1,200.00	1,200.00	1,232.50	1,232.50	4.07	4.19	-90.02	-1.22	-3,807.07	3,807.07	3,801.23	5.84	652.241		
1,300.00	1,300.00	1,332.50	1,332.50	4.43	4.54	-90.02	-1.22	-3,807.07	3,807.07	3,800.73	6.34	600.123		
1,400.00	1,400.00	1,432.50	1,432.50	4.79	4.90	-90.02	-1.22	-3,807.07	3,807.07	3,800.22	6.85	555.718		
1,500.00	1,500.00	1,532.50	1,532.50	5.14	5.26	-90.02	-1.22	-3,807.07	3,807.07	3,799.71	7.36	517.430		
1,600.00	1,600.00	1,632.50	1,632.50	5.50	5.62	-90.02	-1.22	-3,807.07	3,807.07	3,799.21	7.86	484.078		
1,700.00	1,700.00	1,732.50	1,732.50	5.86	5.98	-90.02	-1.22	-3,807.07	3,807.07	3,798.70	8.37	454.765		
1,800.00	1,800.00	1,832.50	1,832.50	6.22	6.34	-90.02	-1.22	-3,807.07	3,807.07	3,798.19	8.88	428.800		
1,900.00	1,900.00	1,932.50	1,932.50	6.58	6.69	-90.02	-1.22	-3,807.07	3,807.07	3,797.68	9.39	405.639		
2,000.00	2,000.00	2,032.50	2,032.50	6.94	7.05	-90.02	-1.22	-3,807.07	3,807.07	3,797.18	9.89	384.852		
2,100.00	2,100.00	2,132.50	2,132.50	7.29	7.41	-90.02	-1.22	-3,807.07	3,807.07	3,796.67	10.40	366.091		
2,200.00	2,200.00	2,232.50	2,232.50	7.65	7.77	-90.02	-1.22	-3,807.07	3,807.07	3,796.16	10.91	349.074		
2,300.00	2,300.00	2,332.50	2,332.50	8.01	8.13	-90.02	-1.22	-3,807.07	3,807.07	3,795.66	11.41	333.569		
2,400.00	2,400.00	2,432.50	2,432.50	8.37	8.49	-90.02	-1.22	-3,807.07	3,807.07	3,795.15	11.92	319.383		
2,500.00	2,500.00	2,532.50	2,532.50	8.73	8.85	-90.02	-1.22	-3,807.07	3,807.07	3,794.64	12.43	306.354		
2,600.00	2,600.00	2,632.50	2,632.50	9.09	9.20	-90.02	-1.22	-3,807.07	3,807.07	3,794.14	12.93	294.347		
2,700.00	2,700.00	2,732.50	2,732.50	9.45	9.56	-90.02	-1.22	-3,807.07	3,807.07	3,793.63	13.44	283.245		
2,800.00	2,800.00	2,832.50	2,832.50	9.80	9.92	-90.02	-1.22	-3,807.07	3,807.07	3,793.12	13.95	272.950		
2,900.00	2,900.00	2,932.50	2,932.50	10.16	10.28	-90.02	-1.22	-3,807.07	3,807.07	3,792.62	14.45	263.378		
3,000.00	3,000.00	3,032.50	3,032.50	10.52	10.64	-90.02	-1.22	-3,807.07	3,807.07	3,792.11	14.96	254.454		
3,100.00	3,100.00	3,132.50	3,132.50	10.88	11.00	-90.02	-1.22	-3,807.07	3,807.07	3,791.60	15.47	246.115		
3,200.00	3,200.00	3,232.50	3,232.50	11.24	11.35	-90.02	-1.22	-3,807.07	3,807.07	3,791.09	15.98	238.305		
3,300.00	3,300.00	3,332.50	3,332.50	11.60	11.71	-90.02	-1.22	-3,807.07	3,807.07	3,790.59	16.48	230.975		
3,400.00	3,400.00	3,432.50	3,432.50	11.96	12.07	-90.02	-1.22	-3,807.07	3,807.07	3,790.08	16.99	224.083		
3,400.62	3,400.62	3,433.12	3,433.12	11.96	12.07	-90.02	-1.22	-3,807.07	3,807.07	3,790.08	16.99	224.042 CC		
3,500.00	3,500.00	3,522.00	3,522.00	12.31	12.39	-90.02	-1.28	-3,807.10	3,807.12	3,789.65	17.47	217.961		
3,600.00	3,600.00	3,600.00	3,599.99	12.67	12.65	-90.04	-2.37	-3,807.70	3,807.84	3,789.93	17.91	212.634		
3,700.00	3,700.00	3,657.32	3,657.28	13.03	12.84	-90.06	-4.06	-3,808.62	3,809.36	3,791.07	18.29	208.265		
3,800.00	3,800.00	3,724.85	3,724.72	13.39	13.06	-90.11	-7.03	-3,810.23	3,811.77	3,793.07	18.70	203.867		
3,900.00	3,900.00	3,800.00	3,799.69	13.75	13.31	-90.17	-11.56	-3,812.70	3,815.03	3,795.91	19.12	199.513		
4,000.00	4,000.00	3,871.96	3,871.39	14.11	13.54	-90.25	-16.94	-3,815.63	3,819.07	3,799.53	19.54	195.462		
4,100.00	4,100.00	3,971.58	3,970.63	14.46	13.87	-90.37	-24.57	-3,819.79	3,823.30	3,803.27	20.02	190.929		
4,200.00	4,200.00	4,071.20	4,069.87	14.82	14.21	-90.48	-32.20	-3,823.95	3,827.54	3,807.03	20.51	186.596		
4,300.00	4,300.00	4,170.82	4,169.11	15.18	14.54	-90.60	-39.84	-3,828.10	3,831.80	3,810.79	21.00	182.451		
4,400.00	4,400.00	4,270.44	4,268.35	15.54	14.88	-90.71	-47.47	-3,832.26	3,836.07	3,814.57	21.49	178.482		
4,500.00	4,500.00	4,370.05	4,367.59	15.90	15.22	-90.82	-55.10	-3,836.42	3,840.35	3,818.37	21.99	174.680		
4,600.00	4,599.99	4,469.73	4,466.88	16.24	15.56	114.19	-62.73	-3,840.57	3,845.19	3,822.73	22.47	171.156		
4,700.00	4,699.91	4,569.47	4,566.24	16.56	15.91	114.05	-70.37	-3,844.74	3,851.11	3,828.17	22.94	167.906		
4,800.00	4,799.69	4,669.21	4,665.60	16.89	16.25	113.93	-78.01	-3,848.90	3,858.09	3,834.69	23.41	164.820		
4,899.98	4,899.25	4,768.87	4,764.88	17.22	16.60	113.83	-85.65	-3,853.06	3,866.13	3,842.25	23.88	161.886		
5,000.00	4,998.72	4,868.49	4,864.12	17.55	16.95	113.86	-93.28	-3,857.21	3,874.71	3,850.35	24.36	159.072		
5,100.00	5,098.17	4,968.11	4,963.36	17.88	17.30	113.89	-100.91	-3,861.37	3,883.28	3,858.44	24.84	156.349		
5,200.00	5,197.63	5,067.72	5,062.59	18.21	17.65	113.92	-108.54	-3,865.52	3,891.85	3,866.53	25.32	153.713		
5,300.00	5,297.08	5,167.33	5,161.82	18.55	18.00	113.95	-116.17	-3,869.68	3,900.43	3,874.62	25.80	151.160		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
5,400.00	5,396.53	5,266.94	5,261.06	18.89	18.36	113.98	-123.80	-3,873.84	3,909.00	3,882.71	26.29	148.687		
5,500.00	5,495.98	5,366.55	5,360.29	19.23	18.71	114.00	-131.43	-3,877.99	3,917.58	3,890.80	26.78	146.292		
5,600.00	5,595.44	5,466.17	5,459.52	19.58	19.07	114.03	-139.06	-3,882.15	3,926.16	3,898.89	27.27	143.971		
5,700.00	5,694.89	5,565.78	5,558.75	19.92	19.43	114.06	-146.69	-3,886.30	3,934.73	3,906.97	27.76	141.722		
5,800.00	5,794.34	5,665.39	5,657.99	20.27	19.79	114.09	-154.32	-3,890.46	3,943.31	3,915.05	28.26	139.542		
5,900.00	5,893.79	5,765.00	5,757.22	20.62	20.15	114.12	-161.95	-3,894.62	3,951.89	3,923.14	28.76	137.428		
6,000.00	5,993.24	5,864.62	5,856.45	20.97	20.51	114.15	-169.58	-3,898.77	3,960.47	3,931.22	29.25	135.378		
6,100.00	6,092.70	5,964.23	5,956.68	21.32	20.87	114.17	-177.21	-3,902.93	3,969.06	3,939.30	29.76	133.389		
6,200.00	6,192.15	6,063.84	6,054.92	21.68	21.23	114.20	-184.84	-3,907.09	3,977.64	3,947.38	30.26	131.459		
6,300.00	6,291.60	6,163.45	6,154.15	22.03	21.60	114.23	-192.47	-3,911.24	3,986.22	3,955.46	30.76	129.586		
6,400.00	6,391.05	6,263.07	6,253.38	22.39	21.96	114.26	-200.10	-3,915.40	3,994.81	3,963.54	31.27	127.768		
6,500.00	6,490.51	6,362.68	6,352.61	22.75	22.33	114.29	-207.73	-3,919.55	4,003.39	3,971.62	31.77	126.001		
6,600.00	6,589.96	6,462.29	6,451.85	23.11	22.69	114.31	-215.36	-3,923.71	4,011.98	3,979.70	32.28	124.286		
6,613.87	6,603.75	6,476.10	6,465.61	23.16	22.74	114.32	-216.42	-3,924.29	4,013.17	3,980.82	32.35	124.052		
6,700.00	6,689.50	6,561.95	6,551.12	23.47	23.06	114.42	-223.00	-3,927.87	4,020.17	3,987.38	32.79	122.610		
6,800.00	6,789.26	6,760.98	6,749.75	23.82	23.78	114.53	-233.96	-3,933.84	4,026.13	3,992.57	33.56	119.972		
6,900.00	6,889.17	6,932.94	6,921.67	24.17	24.38	114.63	-236.22	-3,935.07	4,028.53	3,994.29	34.23	117.680		
7,000.00	6,989.15	7,032.92	7,021.65	24.52	24.72	114.66	-236.22	-3,935.07	4,029.22	3,994.50	34.72	116.049		
7,013.85	7,003.00	7,046.77	7,035.50	24.57	24.77	-90.52	-236.22	-3,935.07	4,029.23	3,994.45	34.79	115.823		
7,100.00	7,089.15	7,132.92	7,121.65	24.87	25.07	-90.52	-236.22	-3,935.07	4,029.23	3,994.02	35.21	114.429		
7,200.00	7,189.15	7,232.92	7,221.65	25.22	25.41	-90.52	-236.22	-3,935.07	4,029.23	3,993.53	35.70	112.852		
7,300.00	7,289.15	7,332.92	7,321.65	25.57	25.76	-90.52	-236.22	-3,935.07	4,029.23	3,993.04	36.20	111.316		
7,400.00	7,389.15	7,432.92	7,421.65	25.92	26.10	-90.52	-236.22	-3,935.07	4,029.23	3,992.54	36.69	109.821		
7,500.00	7,489.15	7,532.92	7,521.65	26.27	26.45	-90.52	-236.22	-3,935.07	4,029.23	3,992.05	37.18	108.363		
7,600.00	7,589.15	7,632.92	7,621.65	26.62	26.79	-90.52	-236.22	-3,935.07	4,029.23	3,991.56	37.68	106.943		
7,700.00	7,689.15	7,732.92	7,721.65	26.97	27.14	-90.52	-236.22	-3,935.07	4,029.23	3,991.06	38.17	105.559		
7,800.00	7,789.15	7,832.92	7,821.65	27.32	27.49	-90.52	-236.22	-3,935.07	4,029.23	3,990.57	38.66	104.210		
7,900.00	7,889.15	7,932.92	7,921.65	27.67	27.83	-90.52	-236.22	-3,935.07	4,029.23	3,990.07	39.16	102.893		
8,000.00	7,989.15	8,032.92	8,021.65	28.03	28.18	-90.52	-236.22	-3,935.07	4,029.23	3,989.58	39.65	101.609		
8,100.00	8,089.15	8,132.92	8,121.65	28.38	28.53	-90.52	-236.22	-3,935.07	4,029.23	3,989.08	40.15	100.355		
8,200.00	8,189.15	8,232.92	8,221.65	28.73	28.88	-90.52	-236.22	-3,935.07	4,029.23	3,988.59	40.65	99.131		
8,300.00	8,289.15	8,332.92	8,321.65	29.08	29.23	-90.52	-236.22	-3,935.07	4,029.23	3,988.09	41.14	97.937		
8,400.00	8,389.15	8,432.92	8,421.65	29.43	29.57	-90.52	-236.22	-3,935.07	4,029.23	3,987.60	41.64	96.770		
8,500.00	8,489.15	8,532.92	8,521.65	29.79	29.92	-90.52	-236.22	-3,935.07	4,029.23	3,987.10	42.13	95.629		
8,600.00	8,589.15	8,632.92	8,621.65	30.14	30.27	-90.52	-236.22	-3,935.07	4,029.23	3,986.60	42.63	94.515		
8,700.00	8,689.15	8,732.92	8,721.65	30.49	30.62	-90.52	-236.22	-3,935.07	4,029.23	3,986.11	43.13	93.426		
8,800.00	8,789.15	8,832.92	8,821.65	30.85	30.97	-90.52	-236.22	-3,935.07	4,029.23	3,985.61	43.62	92.362		
8,900.00	8,889.15	8,932.92	8,921.65	31.20	31.32	-90.52	-236.22	-3,935.07	4,029.23	3,985.11	44.12	91.321		
9,000.00	8,989.15	9,032.92	9,021.65	31.55	31.67	-90.52	-236.22	-3,935.07	4,029.23	3,984.61	44.62	90.302		
9,100.00	9,089.15	9,132.92	9,121.65	31.91	32.02	-90.52	-236.22	-3,935.07	4,029.23	3,984.12	45.12	89.306		
9,200.00	9,189.15	9,232.92	9,221.65	32.26	32.37	-90.52	-236.22	-3,935.07	4,029.23	3,983.62	45.62	88.331		
9,300.00	9,289.15	9,332.92	9,321.65	32.61	32.72	-90.52	-236.22	-3,935.07	4,029.23	3,983.12	46.11	87.377		
9,400.00	9,389.15	9,432.92	9,421.65	32.97	33.07	-90.52	-236.22	-3,935.07	4,029.23	3,982.62	46.61	86.443		
9,500.00	9,489.15	9,532.92	9,521.65	33.32	33.42	-90.52	-236.22	-3,935.07	4,029.23	3,982.12	47.11	85.528		
9,600.00	9,589.15	9,632.92	9,621.65	33.67	33.77	-90.52	-236.22	-3,935.07	4,029.23	3,981.62	47.61	84.632		
9,700.00	9,689.15	9,732.92	9,721.65	34.03	34.12	-90.52	-236.22	-3,935.07	4,029.23	3,981.13	48.11	83.754		
9,800.00	9,789.15	9,832.92	9,821.65	34.38	34.47	-90.52	-236.22	-3,935.07	4,029.23	3,980.63	48.61	82.894		
9,900.00	9,889.15	9,932.92	9,921.65	34.74	34.83	-90.52	-236.22	-3,935.07	4,029.23	3,980.13	49.11	82.051		
10,000.00	9,989.15	10,032.92	10,021.65	35.09	35.18	-90.52	-236.22	-3,935.07	4,029.23	3,979.63	49.61	81.225		
10,100.00	10,089.15	10,132.92	10,121.65	35.44	35.53	-90.52	-236.22	-3,935.07	4,029.23	3,979.13	50.11	80.416		
10,200.00	10,189.15	10,232.92	10,221.65	35.80	35.88	-90.52	-236.22	-3,935.07	4,029.23	3,978.63	50.60	79.622		
10,300.00	10,289.15	10,332.92	10,321.65	36.15	36.23	-90.52	-236.22	-3,935.07	4,029.23	3,978.13	51.10	78.843		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
10,400.00	10,389.15	10,432.92	10,421.65	36.51	36.58	-90.52	-236.22	-3,935.07	4,029.23	3,977.63	51.60	78.079		
10,500.00	10,489.15	10,532.92	10,521.65	36.86	36.94	-90.52	-236.22	-3,935.07	4,029.23	3,977.13	52.10	77.330		
10,600.00	10,589.15	10,632.92	10,621.65	37.22	37.29	-90.52	-236.22	-3,935.07	4,029.23	3,976.63	52.60	76.594		
10,700.00	10,689.15	10,732.92	10,721.65	37.57	37.64	-90.52	-236.22	-3,935.07	4,029.23	3,976.13	53.11	75.873		
10,800.00	10,789.15	10,832.92	10,821.65	37.93	37.99	-90.52	-236.22	-3,935.07	4,029.23	3,975.63	53.61	75.164		
10,900.00	10,889.15	10,932.92	10,921.65	38.28	38.35	-90.52	-236.22	-3,935.07	4,029.23	3,975.13	54.11	74.469		
11,000.00	10,989.15	11,032.92	11,021.65	38.64	38.70	-90.52	-236.22	-3,935.07	4,029.23	3,974.63	54.61	73.786		
11,108.85	11,098.00	11,141.77	11,130.50	39.02	39.08	-90.52	-236.22	-3,935.07	4,029.23	3,974.08	55.15	73.057		
11,128.69	11,117.84	11,161.60	11,150.34	39.09	39.15	-90.00	-236.22	-3,935.07	4,029.23	3,973.98	55.25	72.926		
11,150.00	11,139.12	11,182.88	11,171.62	39.17	39.23	-90.02	-236.22	-3,935.07	4,029.23	3,973.88	55.36	72.787		
11,200.00	11,188.77	11,232.54	11,221.27	39.34	39.40	-90.10	-236.22	-3,935.07	4,029.24	3,973.64	55.60	72.467		
11,250.00	11,237.73	11,282.73	11,271.43	39.50	39.58	-90.22	-234.86	-3,935.08	4,029.26	3,973.42	55.84	72.158		
11,300.00	11,285.62	11,333.90	11,322.26	39.66	39.75	-90.34	-229.07	-3,935.13	4,029.30	3,973.23	56.07	71.860		
11,350.00	11,332.09	11,385.93	11,373.19	39.81	39.92	-90.47	-218.55	-3,935.22	4,029.36	3,973.07	56.29	71.576		
11,400.00	11,376.78	11,438.83	11,423.78	39.95	40.08	-90.58	-203.17	-3,935.36	4,029.43	3,972.92	56.51	71.305		
11,450.00	11,419.35	11,492.61	11,473.55	40.08	40.23	-90.70	-182.82	-3,935.53	4,029.52	3,972.80	56.72	71.047		
11,500.00	11,459.47	11,547.29	11,521.95	40.20	40.38	-90.81	-157.44	-3,935.75	4,029.61	3,972.70	56.91	70.801		
11,550.00	11,496.84	11,602.85	11,568.44	40.32	40.52	-90.92	-127.04	-3,936.01	4,029.71	3,972.60	57.11	70.566		
11,600.00	11,531.17	11,659.29	11,612.41	40.44	40.64	-91.02	-91.71	-3,936.32	4,029.81	3,972.52	57.29	70.339		
11,650.00	11,562.21	11,716.55	11,653.27	40.55	40.77	-91.11	-51.62	-3,936.66	4,029.91	3,972.44	57.47	70.117		
11,700.00	11,589.71	11,774.60	11,690.38	40.67	40.89	-91.19	-7.02	-3,937.05	4,030.01	3,972.35	57.65	69.900		
11,750.00	11,613.47	11,833.36	11,723.17	40.79	41.02	-91.26	41.71	-3,937.47	4,030.09	3,972.26	57.83	69.683		
11,800.00	11,633.31	11,892.74	11,751.05	40.91	41.15	-91.33	94.10	-3,937.92	4,030.16	3,972.15	58.02	69.466		
11,850.00	11,649.08	11,952.65	11,773.54	41.04	41.29	-91.37	149.60	-3,938.40	4,030.22	3,972.02	58.20	69.246		
11,900.00	11,660.65	12,012.97	11,790.21	41.16	41.43	-91.41	207.54	-3,938.90	4,030.25	3,971.86	58.39	69.022		
11,950.00	11,667.94	12,073.57	11,800.72	41.29	41.58	-91.43	267.19	-3,939.41	4,030.27	3,971.68	58.58	68.794		
12,000.00	11,670.89	12,134.31	11,804.89	41.42	41.73	-91.44	327.76	-3,939.93	4,030.26	3,971.47	58.78	68.561		
12,018.82	11,670.87	12,157.18	11,804.79	41.47	41.79	-91.44	350.63	-3,940.13	4,030.25	3,971.39	58.86	68.472		
12,100.00	11,669.46	12,237.59	11,803.47	41.72	42.03	-91.44	431.02	-3,940.82	4,030.21	3,971.01	59.20	68.075		
12,200.00	11,667.72	12,337.59	11,801.80	42.08	42.38	-91.45	531.00	-3,941.69	4,030.17	3,970.47	59.70	67.506		
12,300.00	11,665.98	12,437.59	11,800.14	42.50	42.79	-91.45	630.98	-3,942.55	4,030.12	3,969.84	60.29	66.851		
12,400.00	11,664.24	12,537.59	11,798.47	42.98	43.26	-91.45	730.97	-3,943.41	4,030.08	3,969.13	60.95	66.117		
12,500.00	11,662.50	12,637.59	11,796.81	43.51	43.78	-91.45	830.95	-3,944.27	4,030.04	3,968.33	61.70	65.312		
12,600.00	11,660.76	12,737.59	11,795.14	44.11	44.37	-91.45	930.93	-3,945.13	4,030.00	3,967.46	62.53	64.447		
12,700.00	11,659.01	12,837.59	11,793.48	44.75	45.00	-91.45	1,030.91	-3,946.00	4,029.95	3,966.52	63.44	63.528		
12,800.00	11,657.27	12,937.59	11,791.81	45.45	45.68	-91.45	1,130.90	-3,946.86	4,029.91	3,965.50	64.41	62.566		
12,900.00	11,655.53	13,037.59	11,790.15	46.19	46.42	-91.45	1,230.88	-3,947.72	4,029.87	3,964.41	65.45	61.567		
13,000.00	11,653.79	13,137.59	11,788.48	46.98	47.20	-91.45	1,330.86	-3,948.58	4,029.82	3,963.26	66.56	60.540		
13,100.00	11,652.05	13,237.59	11,786.82	47.82	48.02	-91.45	1,430.84	-3,949.44	4,029.78	3,962.04	67.74	59.492		
13,200.00	11,650.31	13,337.59	11,785.15	48.70	48.88	-91.46	1,530.82	-3,950.31	4,029.74	3,960.77	68.97	58.429		
13,300.00	11,648.57	13,437.59	11,783.49	49.61	49.79	-91.46	1,630.81	-3,951.17	4,029.69	3,959.44	70.26	57.358		
13,400.00	11,646.83	13,537.59	11,781.82	50.57	50.73	-91.46	1,730.79	-3,952.03	4,029.65	3,958.05	71.60	56.283		
13,500.00	11,645.09	13,637.59	11,780.16	51.55	51.71	-91.46	1,830.77	-3,952.89	4,029.61	3,956.62	72.99	55.210		
13,600.00	11,643.35	13,737.59	11,778.49	52.58	52.72	-91.46	1,930.75	-3,953.76	4,029.56	3,955.14	74.42	54.143		
13,700.00	11,641.61	13,837.59	11,776.83	53.63	53.77	-91.46	2,030.74	-3,954.62	4,029.52	3,953.61	75.91	53.085		
13,800.00	11,639.87	13,937.59	11,775.16	54.71	54.84	-91.46	2,130.72	-3,955.48	4,029.48	3,952.04	77.43	52.039		
13,900.00	11,638.13	14,037.59	11,773.50	55.82	55.94	-91.46	2,230.70	-3,956.34	4,029.43	3,950.44	79.00	51.008		
14,000.00	11,636.39	14,137.59	11,771.83	56.96	57.07	-91.46	2,330.68	-3,957.20	4,029.39	3,948.79	80.60	49.994		
14,100.00	11,634.65	14,237.59	11,770.17	58.12	58.22	-91.47	2,430.67	-3,958.07	4,029.35	3,947.11	82.23	48.999		
14,200.00	11,632.91	14,337.59	11,768.50	59.31	59.40	-91.47	2,530.65	-3,958.93	4,029.30	3,945.40	83.90	48.023		
14,300.00	11,631.17	14,437.59	11,766.84	60.52	60.60	-91.47	2,630.63	-3,959.79	4,029.26	3,943.66	85.60	47.068		
14,400.00	11,629.42	14,537.59	11,765.17	61.74	61.82	-91.47	2,730.61	-3,960.65	4,029.22	3,941.88	87.33	46.135		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
14,500.00	11,627.68	14,637.59	11,763.51	62.99	63.06	-91.47	2,830.60	-3,961.51	4,029.17	3,940.08	89.09	45.225		
14,600.00	11,625.94	14,737.59	11,761.85	64.26	64.31	-91.47	2,930.58	-3,962.38	4,029.13	3,938.25	90.88	44.336		
14,700.00	11,624.20	14,837.59	11,760.18	65.54	65.59	-91.47	3,030.56	-3,963.24	4,029.09	3,936.40	92.68	43.471		
14,800.00	11,622.46	14,937.59	11,758.52	66.84	66.88	-91.47	3,130.54	-3,964.10	4,029.04	3,934.53	94.52	42.628		
14,900.00	11,620.72	15,037.59	11,756.85	68.15	68.19	-91.47	3,230.53	-3,964.96	4,029.00	3,932.63	96.37	41.808		
15,000.00	11,618.98	15,137.59	11,755.19	69.48	69.51	-91.48	3,330.51	-3,965.83	4,028.96	3,930.71	98.24	41.010		
15,100.00	11,617.24	15,237.59	11,753.52	70.82	70.85	-91.48	3,430.49	-3,966.69	4,028.91	3,928.78	100.14	40.234		
15,200.00	11,615.50	15,337.59	11,751.86	72.18	72.20	-91.48	3,530.47	-3,967.55	4,028.87	3,926.82	102.05	39.480		
15,300.00	11,613.76	15,437.59	11,750.19	73.54	73.56	-91.48	3,630.46	-3,968.41	4,028.83	3,924.85	103.98	38.747		
15,400.00	11,612.02	15,537.59	11,748.53	74.92	74.93	-91.48	3,730.44	-3,969.27	4,028.78	3,922.86	105.92	38.035		
15,500.00	11,610.28	15,637.59	11,746.86	76.31	76.31	-91.48	3,830.42	-3,970.14	4,028.74	3,920.86	107.88	37.344		
15,600.00	11,608.54	15,737.59	11,745.20	77.71	77.71	-91.48	3,930.40	-3,971.00	4,028.70	3,918.84	109.86	36.672		
15,700.00	11,606.80	15,837.59	11,743.53	79.12	79.11	-91.48	4,030.38	-3,971.86	4,028.65	3,916.81	111.85	36.019		
15,800.00	11,605.06	15,937.59	11,741.87	80.54	80.53	-91.48	4,130.37	-3,972.72	4,028.61	3,914.76	113.85	35.385		
15,900.00	11,603.32	16,037.59	11,740.20	81.97	81.95	-91.49	4,230.35	-3,973.58	4,028.57	3,912.70	115.86	34.770		
16,000.00	11,601.57	16,137.59	11,738.54	83.40	83.38	-91.49	4,330.33	-3,974.45	4,028.53	3,910.63	117.89	34.172		
16,100.00	11,599.83	16,237.59	11,736.87	84.84	84.82	-91.49	4,430.31	-3,975.31	4,028.48	3,908.55	119.93	33.591		
16,200.00	11,598.09	16,337.59	11,735.21	86.30	86.27	-91.49	4,530.30	-3,976.17	4,028.44	3,906.46	121.98	33.026		
16,300.00	11,596.35	16,437.59	11,733.54	87.75	87.72	-91.49	4,630.28	-3,977.03	4,028.40	3,904.36	124.04	32.478		
16,400.00	11,594.61	16,537.59	11,731.88	89.22	89.18	-91.49	4,730.26	-3,977.90	4,028.35	3,902.25	126.10	31.945		
16,500.00	11,592.87	16,637.59	11,730.21	90.69	90.65	-91.49	4,830.24	-3,978.76	4,028.31	3,900.13	128.18	31.426		
16,600.00	11,591.13	16,737.59	11,728.55	92.17	92.12	-91.49	4,930.23	-3,979.62	4,028.27	3,898.00	130.27	30.923		
16,700.00	11,589.39	16,837.59	11,726.88	93.65	93.60	-91.49	5,030.21	-3,980.48	4,028.22	3,895.86	132.36	30.433		
16,800.00	11,587.65	16,937.59	11,725.22	95.14	95.09	-91.50	5,130.19	-3,981.34	4,028.18	3,893.71	134.47	29.957		
16,900.00	11,585.91	17,037.59	11,723.55	96.63	96.58	-91.50	5,230.17	-3,982.21	4,028.14	3,891.56	136.58	29.494		
17,000.00	11,584.17	17,137.59	11,721.89	98.13	98.07	-91.50	5,330.16	-3,983.07	4,028.09	3,889.40	138.69	29.043		
17,100.00	11,582.43	17,237.59	11,720.22	99.64	99.57	-91.50	5,430.14	-3,983.93	4,028.05	3,887.23	140.82	28.605		
17,200.00	11,580.69	17,337.59	11,718.56	101.14	101.08	-91.50	5,530.12	-3,984.79	4,028.01	3,885.06	142.95	28.178		
17,300.00	11,578.95	17,437.58	11,716.89	102.66	102.59	-91.50	5,630.10	-3,985.65	4,027.96	3,882.88	145.08	27.763		
17,400.00	11,577.21	17,537.58	11,715.23	104.17	104.10	-91.50	5,730.09	-3,986.52	4,027.92	3,880.69	147.23	27.358		
17,500.00	11,575.47	17,637.58	11,713.56	105.70	105.62	-91.50	5,830.07	-3,987.38	4,027.88	3,878.50	149.38	26.965		
17,600.00	11,573.73	17,737.58	11,711.90	107.22	107.15	-91.50	5,930.05	-3,988.24	4,027.83	3,876.30	151.53	26.581		
17,700.00	11,571.98	17,837.58	11,710.23	108.75	108.67	-91.51	6,030.03	-3,989.10	4,027.79	3,874.10	153.69	26.207		
17,800.00	11,570.24	17,937.58	11,708.57	110.28	110.20	-91.51	6,130.01	-3,989.97	4,027.75	3,871.89	155.85	25.843		
17,900.00	11,568.50	18,037.58	11,706.90	111.82	111.73	-91.51	6,230.00	-3,990.83	4,027.70	3,869.68	158.02	25.488		
18,000.00	11,566.76	18,137.58	11,705.24	113.36	113.27	-91.51	6,329.98	-3,991.69	4,027.66	3,867.46	160.20	25.142		
18,100.00	11,565.02	18,237.58	11,703.57	114.90	114.81	-91.51	6,429.96	-3,992.55	4,027.62	3,865.24	162.38	24.804		
18,200.00	11,563.28	18,337.58	11,701.91	116.44	116.35	-91.51	6,529.94	-3,993.41	4,027.57	3,863.01	164.56	24.475		
18,300.00	11,561.54	18,437.58	11,700.24	117.99	117.90	-91.51	6,629.93	-3,994.28	4,027.53	3,860.78	166.75	24.153		
18,400.00	11,559.80	18,537.58	11,698.58	119.54	119.45	-91.51	6,729.91	-3,995.14	4,027.49	3,858.55	168.94	23.840		
18,500.00	11,558.06	18,637.58	11,696.91	121.10	121.00	-91.51	6,829.89	-3,996.00	4,027.45	3,856.31	171.13	23.534		
18,600.00	11,556.32	18,737.58	11,695.25	122.65	122.55	-91.51	6,929.87	-3,996.86	4,027.40	3,854.07	173.33	23.235		
18,700.00	11,554.58	18,837.58	11,693.58	124.21	124.11	-91.52	7,029.86	-3,997.72	4,027.36	3,851.83	175.53	22.943		
18,800.00	11,552.84	18,937.58	11,691.92	125.77	125.67	-91.52	7,129.84	-3,998.59	4,027.32	3,849.58	177.74	22.659		
18,900.00	11,551.10	19,037.58	11,690.26	127.33	127.23	-91.52	7,229.82	-3,999.45	4,027.27	3,847.32	179.95	22.380		
19,000.00	11,549.36	19,137.58	11,688.59	128.90	128.79	-91.52	7,329.80	-4,000.31	4,027.23	3,845.07	182.16	22.108		
19,100.00	11,547.62	19,237.58	11,686.93	130.47	130.36	-91.52	7,429.79	-4,001.17	4,027.19	3,842.81	184.37	21.842		
19,200.00	11,545.88	19,337.58	11,685.26	132.04	131.93	-91.52	7,529.77	-4,002.04	4,027.14	3,840.55	186.59	21.583		
19,300.00	11,544.14	19,437.58	11,683.60	133.61	133.50	-91.52	7,629.75	-4,002.90	4,027.10	3,838.29	188.81	21.328		
19,400.00	11,542.39	19,537.58	11,681.93	135.18	135.07	-91.52	7,729.73	-4,003.76	4,027.06	3,836.02	191.04	21.080		
19,500.00	11,540.65	19,637.58	11,680.27	136.76	136.64	-91.52	7,829.72	-4,004.62	4,027.01	3,833.75	193.26	20.837		
19,600.00	11,538.91	19,737.58	11,678.60	138.33	138.22	-91.53	7,929.70	-4,005.48	4,026.97	3,831.48	195.49	20.599		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
19,700.00	11,537.17	19,837.58	11,676.94	139.91	139.79	-91.53	8,029.68	-4,006.35	4,026.93	3,829.20	197.72	20.367		
19,800.00	11,535.43	19,937.58	11,675.27	141.49	141.37	-91.53	8,129.66	-4,007.21	4,026.88	3,826.93	199.96	20.139		
19,900.00	11,533.69	20,037.58	11,673.61	143.08	142.95	-91.53	8,229.64	-4,008.07	4,026.84	3,824.65	202.19	19.916		
20,000.00	11,531.95	20,137.58	11,671.94	144.66	144.54	-91.53	8,329.63	-4,008.93	4,026.80	3,822.37	204.43	19.698		
20,100.00	11,530.21	20,237.58	11,670.28	146.24	146.12	-91.53	8,429.61	-4,009.79	4,026.75	3,820.09	206.67	19.484		
20,200.00	11,528.47	20,337.58	11,668.61	147.83	147.71	-91.53	8,529.59	-4,010.66	4,026.71	3,817.80	208.91	19.275		
20,300.00	11,526.73	20,437.58	11,666.95	149.42	149.29	-91.53	8,629.57	-4,011.52	4,026.67	3,815.51	211.16	19.070		
20,400.00	11,524.99	20,537.58	11,665.28	151.01	150.88	-91.53	8,729.56	-4,012.38	4,026.63	3,813.22	213.40	18.869		
20,500.00	11,523.25	20,637.58	11,663.62	152.60	152.47	-91.54	8,829.54	-4,013.24	4,026.58	3,810.93	215.65	18.672		
20,600.00	11,521.51	20,737.58	11,661.95	154.19	154.06	-91.54	8,929.52	-4,014.11	4,026.54	3,808.64	217.90	18.479		
20,700.00	11,519.77	20,837.58	11,660.29	155.78	155.65	-91.54	9,029.50	-4,014.97	4,026.50	3,806.34	220.15	18.290		
20,800.00	11,518.03	20,937.58	11,658.62	157.38	157.25	-91.54	9,129.49	-4,015.83	4,026.45	3,804.05	222.41	18.104		
20,900.00	11,516.29	21,037.58	11,656.96	158.97	158.84	-91.54	9,229.47	-4,016.69	4,026.41	3,801.75	224.66	17.922		
21,000.00	11,514.54	21,137.58	11,655.29	160.57	160.44	-91.54	9,329.45	-4,017.55	4,026.37	3,799.45	226.92	17.744		
21,100.00	11,512.80	21,237.58	11,653.63	162.17	162.03	-91.54	9,429.43	-4,018.42	4,026.32	3,797.15	229.18	17.569		
21,200.00	11,511.06	21,337.58	11,651.96	163.77	163.63	-91.54	9,529.42	-4,019.28	4,026.28	3,794.85	231.44	17.397		
21,300.00	11,509.32	21,437.58	11,650.30	165.37	165.23	-91.54	9,629.40	-4,020.14	4,026.24	3,792.54	233.70	17.228		
21,400.00	11,507.58	21,537.58	11,648.63	166.97	166.83	-91.55	9,729.38	-4,021.00	4,026.19	3,790.24	235.96	17.063		
21,500.00	11,505.84	21,637.58	11,646.97	168.57	168.43	-91.55	9,829.36	-4,021.86	4,026.15	3,787.93	238.22	16.901		
21,600.00	11,504.10	21,737.58	11,645.30	170.17	170.03	-91.55	9,929.35	-4,022.73	4,026.11	3,785.62	240.49	16.741		
21,700.00	11,502.36	21,837.58	11,643.64	171.78	171.63	-91.55	10,029.33	-4,023.59	4,026.06	3,783.31	242.76	16.585		
21,793.55	11,500.73	21,929.37	11,642.11	173.28	173.11	-91.55	10,121.10	-4,024.38	4,026.02	3,781.17	244.86	16.442		
21,800.00	11,500.62	21,929.37	11,642.11	173.38	173.11	-91.55	10,121.10	-4,024.38	4,026.03	3,781.10	244.93	16.437		
21,812.62	11,500.40	21,929.37	11,642.11	173.58	173.11	-91.55	10,121.10	-4,024.38	4,026.07	3,781.00	245.07	16.428 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	35.30	35.30	0.00	0.04	-90.02	-1.59	-3,842.06	3,842.06					
100.00	100.00	135.30	135.30	0.13	0.25	-90.02	-1.59	-3,842.06	3,842.06	3,841.78	0.28	N/A		
200.00	200.00	235.30	235.30	0.48	0.61	-90.02	-1.59	-3,842.06	3,842.06	3,841.28	0.78	4,931.894		
300.00	300.00	335.30	335.30	0.84	0.97	-90.02	-1.59	-3,842.06	3,842.06	3,840.78	1.28	2,992.388		
400.00	400.00	435.30	435.30	1.20	1.33	-90.02	-1.59	-3,842.06	3,842.06	3,840.27	1.79	2,146.383		
500.00	500.00	535.30	535.30	1.56	1.69	-90.02	-1.59	-3,842.06	3,842.06	3,839.76	2.30	1,673.023		
600.00	600.00	635.30	635.30	1.92	2.04	-90.02	-1.59	-3,842.06	3,842.06	3,839.26	2.80	1,370.638		
700.00	700.00	735.30	735.30	2.28	2.40	-90.02	-1.59	-3,842.06	3,842.06	3,838.75	3.31	1,160.795		
800.00	800.00	835.30	835.30	2.63	2.76	-90.02	-1.59	-3,842.06	3,842.06	3,838.24	3.82	1,006.658		
900.00	900.00	935.30	935.30	2.99	3.12	-90.02	-1.59	-3,842.06	3,842.06	3,837.74	4.32	888.650		
1,000.00	1,000.00	1,035.30	1,035.30	3.35	3.48	-90.02	-1.59	-3,842.06	3,842.06	3,837.23	4.83	795.402		
1,100.00	1,100.00	1,135.30	1,135.30	3.71	3.84	-90.02	-1.59	-3,842.06	3,842.06	3,836.72	5.34	719.862		
1,200.00	1,200.00	1,235.30	1,235.30	4.07	4.20	-90.02	-1.59	-3,842.06	3,842.06	3,836.22	5.84	657.425		
1,300.00	1,300.00	1,335.30	1,335.30	4.43	4.55	-90.02	-1.59	-3,842.06	3,842.06	3,835.71	6.35	604.953		
1,400.00	1,400.00	1,435.30	1,435.30	4.79	4.91	-90.02	-1.59	-3,842.06	3,842.06	3,835.20	6.86	560.237		
1,500.00	1,500.00	1,535.30	1,535.30	5.14	5.27	-90.02	-1.59	-3,842.06	3,842.06	3,834.70	7.36	521.677		
1,600.00	1,600.00	1,635.30	1,635.30	5.50	5.63	-90.02	-1.59	-3,842.06	3,842.06	3,834.19	7.87	488.082		
1,700.00	1,700.00	1,735.30	1,735.30	5.86	5.99	-90.02	-1.59	-3,842.06	3,842.06	3,833.68	8.38	458.552		
1,800.00	1,800.00	1,835.30	1,835.30	6.22	6.35	-90.02	-1.59	-3,842.06	3,842.06	3,833.17	8.89	432.392		
1,900.00	1,900.00	1,935.30	1,935.30	6.58	6.70	-90.02	-1.59	-3,842.06	3,842.06	3,832.67	9.39	409.055		
2,000.00	2,000.00	2,035.30	2,035.30	6.94	7.06	-90.02	-1.59	-3,842.06	3,842.06	3,832.16	9.90	388.108		
2,100.00	2,100.00	2,135.30	2,135.30	7.29	7.42	-90.02	-1.59	-3,842.06	3,842.06	3,831.65	10.41	369.202		
2,200.00	2,200.00	2,235.30	2,235.30	7.65	7.78	-90.02	-1.59	-3,842.06	3,842.06	3,831.15	10.91	352.052		
2,300.00	2,300.00	2,335.30	2,335.30	8.01	8.14	-90.02	-1.59	-3,842.06	3,842.06	3,830.64	11.42	336.424		
2,400.00	2,400.00	2,435.30	2,435.30	8.37	8.50	-90.02	-1.59	-3,842.06	3,842.06	3,830.13	11.93	322.125		
2,500.00	2,500.00	2,535.30	2,535.30	8.73	8.86	-90.02	-1.59	-3,842.06	3,842.06	3,829.63	12.43	308.992		
2,600.00	2,600.00	2,635.30	2,635.30	9.09	9.21	-90.02	-1.59	-3,842.06	3,842.06	3,829.12	12.94	296.888		
2,700.00	2,700.00	2,735.30	2,735.30	9.45	9.57	-90.02	-1.59	-3,842.06	3,842.06	3,828.61	13.45	285.697		
2,800.00	2,800.00	2,835.30	2,835.30	9.80	9.93	-90.02	-1.59	-3,842.06	3,842.06	3,828.11	13.95	275.318		
2,900.00	2,900.00	2,935.30	2,935.30	10.16	10.29	-90.02	-1.59	-3,842.06	3,842.06	3,827.60	14.46	265.667		
3,000.00	3,000.00	3,035.30	3,035.30	10.52	10.65	-90.02	-1.59	-3,842.06	3,842.06	3,827.09	14.97	256.670		
3,100.00	3,100.00	3,135.30	3,135.30	10.88	11.01	-90.02	-1.59	-3,842.06	3,842.06	3,826.58	15.48	248.262		
3,108.48	3,108.48	3,143.78	3,143.78	10.91	11.04	-90.02	-1.59	-3,842.06	3,842.06	3,826.54	15.52	247.574 CC		
3,200.00	3,200.00	3,200.00	3,200.00	11.24	11.24	-90.02	-1.59	-3,842.06	3,842.22	3,826.33	15.89	241.763 ES		
3,300.00	3,300.00	3,273.92	3,273.92	11.60	11.49	-90.03	-1.99	-3,842.65	3,843.14	3,826.82	16.32	235.418		
3,400.00	3,400.00	3,328.53	3,328.51	11.96	11.68	-90.04	-2.81	-3,843.84	3,845.33	3,828.62	16.71	230.181		
3,500.00	3,500.00	3,400.00	3,399.91	12.31	11.91	-90.07	-4.55	-3,846.38	3,848.76	3,831.64	17.12	224.760		
3,600.00	3,600.00	3,437.56	3,437.41	12.67	12.04	-90.09	-5.76	-3,848.15	3,853.24	3,835.78	17.46	220.708		
3,700.00	3,700.00	3,500.00	3,499.69	13.03	12.25	-90.12	-8.25	-3,851.77	3,858.98	3,841.13	17.85	216.154		
3,800.00	3,800.00	3,546.20	3,545.73	13.39	12.40	-90.16	-10.45	-3,854.99	3,865.87	3,847.66	18.21	212.349		
3,900.00	3,900.00	3,600.49	3,599.75	13.75	12.59	-90.20	-13.45	-3,859.36	3,873.95	3,855.37	18.58	208.543		
4,000.00	4,000.00	3,699.94	3,698.66	14.11	12.93	-90.29	-19.32	-3,867.94	3,882.61	3,863.55	19.06	203.652		
4,100.00	4,100.00	3,799.39	3,797.57	14.46	13.27	-90.37	-25.20	-3,876.52	3,891.29	3,871.73	19.56	198.991		
4,200.00	4,200.00	3,898.84	3,896.47	14.82	13.61	-90.46	-31.08	-3,885.10	3,899.97	3,879.92	20.05	194.544		
4,300.00	4,300.00	3,998.29	3,995.38	15.18	13.96	-90.54	-36.96	-3,893.68	3,908.66	3,888.12	20.54	190.300		
4,400.00	4,400.00	4,097.74	4,094.29	15.54	14.31	-90.63	-42.83	-3,902.26	3,917.36	3,896.33	21.03	186.244		
4,500.00	4,500.00	4,197.20	4,193.19	15.90	14.66	-90.71	-48.71	-3,910.84	3,926.07	3,904.55	21.53	182.365		
4,600.00	4,599.99	4,296.66	4,292.11	16.24	15.01	114.27	-54.59	-3,919.42	3,935.33	3,913.32	22.01	178.782		
4,700.00	4,699.91	4,396.10	4,391.00	16.56	15.37	114.09	-60.47	-3,927.99	3,945.66	3,923.18	22.48	175.491		
4,800.00	4,799.69	4,495.44	4,489.80	16.89	15.73	113.94	-66.34	-3,936.56	3,957.05	3,934.09	22.96	172.372		
4,899.98	4,899.25	4,594.61	4,588.43	17.22	16.09	113.80	-72.20	-3,945.12	3,969.50	3,946.07	23.43	169.414		
5,000.00	4,998.72	4,693.71	4,686.98	17.55	16.45	113.86	-78.06	-3,953.67	3,982.47	3,958.57	23.91	166.580		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
5,100.00	5,098.17	4,792.79	4,785.52	17.88	16.81	113.91	-83.91	-3,962.21	3,995.45	3,971.07	24.39	163.841		
5,200.00	5,197.63	4,891.88	4,884.06	18.21	17.17	113.97	-89.77	-3,970.76	4,008.44	3,983.57	24.87	161.191		
5,300.00	5,297.08	4,990.96	4,982.60	18.55	17.53	114.02	-95.62	-3,979.31	4,021.42	3,996.07	25.35	158.626		
5,400.00	5,396.53	5,090.04	5,081.14	18.89	17.90	114.07	-101.48	-3,987.85	4,034.41	4,008.57	25.84	156.144		
5,500.00	5,495.98	5,189.12	5,179.68	19.23	18.27	114.13	-107.33	-3,996.40	4,047.40	4,021.08	26.33	153.741		
5,600.00	5,595.44	5,288.21	5,278.22	19.58	18.63	114.18	-113.19	-4,004.95	4,060.40	4,033.58	26.82	151.415		
5,700.00	5,694.89	5,387.29	5,376.76	19.92	19.00	114.23	-119.05	-4,013.50	4,073.40	4,046.09	27.31	149.161		
5,800.00	5,794.34	5,486.37	5,475.30	20.27	19.37	114.28	-124.90	-4,022.04	4,086.40	4,058.60	27.80	146.978		
5,900.00	5,893.79	5,585.45	5,573.84	20.62	19.74	114.34	-130.76	-4,030.59	4,099.41	4,071.11	28.30	144.863		
6,000.00	5,993.24	5,684.54	5,672.38	20.97	20.11	114.39	-136.61	-4,039.14	4,112.42	4,083.62	28.80	142.812		
6,100.00	6,092.70	5,783.62	5,770.92	21.32	20.49	114.44	-142.47	-4,047.68	4,125.43	4,096.14	29.30	140.824		
6,200.00	6,192.15	5,882.70	5,869.46	21.68	20.86	114.49	-148.33	-4,056.23	4,138.45	4,108.65	29.80	138.895		
6,300.00	6,291.60	5,981.78	5,968.00	22.03	21.23	114.54	-154.18	-4,064.78	4,151.47	4,121.17	30.30	137.024		
6,400.00	6,391.05	6,080.87	6,066.54	22.39	21.61	114.59	-160.04	-4,073.32	4,164.49	4,133.69	30.80	135.208		
6,500.00	6,490.51	6,179.95	6,165.08	22.75	21.98	114.64	-165.89	-4,081.87	4,177.52	4,146.21	31.31	133.445		
6,600.00	6,589.96	6,279.03	6,263.62	23.11	22.36	114.69	-171.75	-4,090.42	4,190.54	4,158.73	31.81	131.733		
6,613.87	6,603.75	6,292.77	6,277.28	23.16	22.41	114.70	-172.56	-4,091.60	4,192.35	4,160.47	31.88	131.500		
6,700.00	6,689.50	6,378.19	6,362.23	23.47	22.73	114.88	-177.61	-4,098.97	4,203.17	4,170.86	32.32	130.062		
6,800.00	6,789.26	6,477.52	6,461.02	23.82	23.11	115.04	-183.48	-4,107.54	4,214.72	4,181.90	32.82	128.416		
6,900.00	6,889.17	6,576.95	6,559.90	24.17	23.49	115.15	-189.36	-4,116.12	4,225.16	4,191.84	33.32	126.796		
7,000.00	6,989.15	6,676.41	6,658.82	24.52	23.87	115.22	-195.23	-4,124.70	4,234.50	4,200.68	33.82	125.201		
7,013.85	7,003.00	6,690.19	6,672.52	24.57	23.92	-89.95	-196.05	-4,125.89	4,235.71	4,201.82	33.89	124.981		
7,100.00	7,089.15	6,775.87	6,757.72	24.87	24.25	-90.02	-201.11	-4,133.28	4,243.15	4,208.83	34.32	123.618		
7,200.00	7,189.15	6,875.32	6,856.63	25.22	24.63	-90.09	-206.99	-4,141.86	4,251.80	4,216.97	34.83	122.078		
7,300.00	7,289.15	6,974.77	6,955.54	25.57	25.01	-90.17	-212.87	-4,150.43	4,260.46	4,225.12	35.33	120.580		
7,400.00	7,389.15	7,074.22	7,054.44	25.92	25.39	-90.25	-218.74	-4,159.01	4,269.12	4,233.28	35.84	119.124		
7,500.00	7,489.15	7,173.67	7,153.35	26.27	25.77	-90.33	-224.62	-4,167.59	4,277.79	4,241.45	36.34	117.707		
7,600.00	7,589.15	7,273.12	7,252.45	26.62	26.17	-90.49	-230.59	-4,176.06	4,286.46	4,250.12	36.84	116.289		
7,700.00	7,689.15	7,372.57	7,351.45	26.97	26.52	-90.49	-236.59	-4,184.53	4,295.13	4,258.79	37.34	114.871		
7,800.00	7,789.15	7,472.02	7,450.45	27.32	26.87	-90.49	-242.56	-4,193.00	4,303.80	4,267.46	37.84	113.453		
7,900.00	7,889.15	7,571.47	7,549.45	27.67	27.22	-90.49	-248.59	-4,201.47	4,312.47	4,276.13	38.34	112.035		
8,000.00	7,989.15	7,670.92	7,648.45	28.03	27.57	-90.49	-254.62	-4,210.04	4,321.14	4,284.80	38.84	110.617		
8,100.00	8,089.15	7,770.37	7,747.45	28.38	27.92	-90.49	-260.65	-4,218.61	4,329.81	4,293.47	39.34	109.199		
8,200.00	8,189.15	7,869.82	7,846.45	28.73	28.27	-90.49	-266.68	-4,227.18	4,338.48	4,302.14	39.84	107.781		
8,300.00	8,289.15	7,969.27	7,945.45	29.08	28.62	-90.49	-272.71	-4,235.75	4,347.15	4,310.81	40.34	106.363		
8,400.00	8,389.15	8,068.72	8,044.45	29.43	28.97	-90.49	-278.74	-4,244.32	4,355.82	4,319.48	40.84	104.945		
8,500.00	8,489.15	8,168.17	8,143.45	29.79	29.32	-90.49	-284.77	-4,252.89	4,364.49	4,328.15	41.34	103.527		
8,600.00	8,589.15	8,267.62	8,242.45	30.14	29.67	-90.49	-290.80	-4,261.46	4,373.16	4,336.82	41.84	102.109		
8,700.00	8,689.15	8,367.07	8,341.45	30.49	29.92	-90.49	-296.83	-4,270.03	4,381.83	4,345.49	42.34	100.691		
8,800.00	8,789.15	8,466.52	8,440.45	30.85	30.17	-90.49	-302.86	-4,278.60	4,390.50	4,354.16	42.84	99.273		
8,900.00	8,889.15	8,565.97	8,539.45	31.20	30.52	-90.49	-308.89	-4,287.17	4,399.17	4,362.83	43.34	97.855		
9,000.00	8,989.15	8,665.42	8,638.45	31.55	30.87	-90.49	-314.92	-4,295.74	4,407.84	4,371.50	43.84	96.437		
9,100.00	9,089.15	8,764.87	8,737.45	31.91	31.22	-90.49	-320.95	-4,304.31	4,416.41	4,380.17	44.34	95.019		
9,200.00	9,189.15	8,864.32	8,836.45	32.26	31.57	-90.49	-326.98	-4,312.88	4,425.08	4,388.84	44.84	93.601		
9,300.00	9,289.15	8,963.77	8,935.45	32.61	31.92	-90.49	-333.01	-4,321.45	4,433.75	4,397.51	45.34	92.183		
9,400.00	9,389.15	9,063.22	9,034.45	32.97	32.27	-90.49	-339.04	-4,330.02	4,442.32	4,406.18	45.84	90.765		
9,500.00	9,489.15	9,162.67	9,133.45	33.32	32.62	-90.49	-345.07	-4,338.59	4,450.89	4,414.85	46.34	89.347		
9,600.00	9,589.15	9,262.12	9,232.45	33.67	32.97	-90.49	-351.10	-4,347.16	4,459.46	4,423.52	46.84	87.929		
9,700.00	9,689.15	9,361.57	9,331.45	34.03	33.32	-90.49	-357.13	-4,355.73	4,468.03	4,432.19	47.34	86.511		
9,800.00	9,789.15	9,461.02	9,430.45	34.38	33.67	-90.49	-363.16	-4,364.30	4,476.60	4,440.86	47.84	85.093		
9,900.00	9,889.15	9,560.47	9,529.45	34.74	34.02	-90.49	-369.19	-4,372.87	4,485.17	4,449.53	48.34	83.675		
10,000.00	9,989.15	9,659.92	9,628.45	35.09	34.37	-90.49	-375.22	-4,381.44	4,493.74	4,458.20	48.84	82.257		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
10,100.00	10,089.15	10,145.52	10,124.45	35.44	36.04	-90.49	-236.59	-4,185.06	4,279.22	4,229.01	50.21	85.227		
10,200.00	10,189.15	10,245.52	10,224.45	35.80	36.39	-90.49	-236.59	-4,185.06	4,279.22	4,228.51	50.71	84.390		
10,300.00	10,289.15	10,345.52	10,324.45	36.15	36.74	-90.49	-236.59	-4,185.06	4,279.22	4,228.01	51.21	83.570		
10,400.00	10,389.15	10,445.52	10,424.45	36.51	37.08	-90.49	-236.59	-4,185.06	4,279.22	4,227.51	51.70	82.764		
10,500.00	10,489.15	10,545.52	10,524.45	36.86	37.43	-90.49	-236.59	-4,185.06	4,279.22	4,227.01	52.20	81.974		
10,600.00	10,589.15	10,645.52	10,624.45	37.22	37.78	-90.49	-236.59	-4,185.06	4,279.22	4,226.52	52.70	81.198		
10,700.00	10,689.15	10,745.52	10,724.45	37.57	38.13	-90.49	-236.59	-4,185.06	4,279.22	4,226.02	53.20	80.437		
10,800.00	10,789.15	10,845.52	10,824.45	37.93	38.47	-90.49	-236.59	-4,185.06	4,279.22	4,225.52	53.70	79.690		
10,900.00	10,889.15	10,945.52	10,924.45	38.28	38.82	-90.49	-236.59	-4,185.06	4,279.22	4,225.02	54.20	78.956		
11,000.00	10,989.15	11,045.52	11,024.45	38.64	39.17	-90.49	-236.59	-4,185.06	4,279.22	4,224.52	54.70	78.235		
11,108.85	11,098.00	11,154.37	11,133.30	39.02	39.55	-90.49	-236.59	-4,185.06	4,279.22	4,223.98	55.24	77.465		
11,150.00	11,139.12	11,195.48	11,174.42	39.17	39.69	-89.99	-236.59	-4,185.06	4,279.22	4,223.77	55.44	77.180		
11,159.55	11,148.64	11,205.00	11,183.94	39.20	39.73	-90.00	-236.59	-4,185.06	4,279.22	4,223.73	55.49	77.116		
11,200.00	11,188.77	11,245.13	11,224.07	39.34	39.87	-90.07	-236.59	-4,185.06	4,279.22	4,223.53	55.69	76.844		
11,250.00	11,237.73	11,294.09	11,273.03	39.50	40.04	-90.20	-236.59	-4,185.06	4,279.24	4,223.32	55.92	76.519		
11,300.00	11,285.62	11,341.99	11,320.92	39.66	40.20	-90.37	-236.59	-4,185.06	4,279.32	4,223.16	56.15	76.209		
11,350.00	11,332.09	11,388.46	11,367.39	39.81	40.37	-90.58	-236.59	-4,185.06	4,279.48	4,223.11	56.37	75.915		
11,400.00	11,376.78	11,433.15	11,412.08	39.95	40.52	-90.82	-236.59	-4,185.06	4,279.79	4,223.21	56.58	75.639		
11,450.00	11,419.35	11,475.71	11,454.65	40.08	40.67	-91.07	-236.59	-4,185.06	4,280.30	4,223.52	56.78	75.381		
11,500.00	11,459.47	11,515.83	11,494.77	40.20	40.81	-91.31	-236.59	-4,185.06	4,281.08	4,224.10	56.97	75.142		
11,550.00	11,496.84	11,553.20	11,532.14	40.32	40.94	-91.53	-236.59	-4,185.06	4,282.18	4,225.03	57.15	74.924		
11,600.00	11,531.17	11,604.00	11,582.87	40.44	41.12	-91.86	-234.59	-4,185.08	4,283.63	4,226.27	57.36	74.678		
11,650.00	11,562.21	11,661.41	11,639.75	40.55	41.31	-92.22	-226.93	-4,185.14	4,285.34	4,227.77	57.58	74.430		
11,700.00	11,589.71	11,726.07	11,702.52	40.67	41.51	-92.62	-211.55	-4,185.28	4,287.29	4,229.50	57.79	74.181		
11,750.00	11,613.47	11,800.40	11,771.99	40.79	41.72	-93.06	-185.28	-4,185.50	4,289.43	4,231.41	58.02	73.929		
11,800.00	11,633.31	11,887.59	11,848.33	40.91	41.93	-93.55	-143.33	-4,185.86	4,291.65	4,233.40	58.25	73.676		
11,850.00	11,649.08	11,991.60	11,929.78	41.04	42.13	-94.09	-78.88	-4,186.42	4,293.82	4,235.34	58.49	73.414		
11,900.00	11,660.65	12,088.96	11,994.02	41.16	42.27	-94.50	-5.91	-4,187.05	4,295.74	4,237.04	58.70	73.177		
11,950.00	11,667.94	12,236.72	12,066.09	41.29	42.39	-95.03	122.49	-4,188.16	4,297.13	4,238.15	58.98	72.855		
12,000.00	11,670.89	12,425.48	12,107.14	41.42	42.83	-95.36	305.78	-4,189.74	4,297.76	4,238.41	59.35	72.420		
12,018.82	11,670.87	12,469.61	12,107.85	41.47	42.94	-95.36	349.89	-4,190.12	4,297.77	4,238.31	59.45	72.289		
12,100.00	11,669.46	12,550.78	12,107.07	41.72	43.19	-95.37	431.06	-4,190.82	4,297.79	4,238.01	59.78	71.890		
12,200.00	11,667.72	12,650.78	12,106.11	42.08	43.53	-95.38	531.05	-4,191.68	4,297.82	4,237.55	60.26	71.316		
12,300.00	11,665.98	12,750.78	12,105.15	42.50	43.93	-95.39	631.04	-4,192.54	4,297.84	4,237.01	60.83	70.653		
12,400.00	11,664.24	12,850.78	12,104.18	42.98	44.39	-95.40	731.02	-4,193.40	4,297.87	4,236.39	61.48	69.907		
12,500.00	11,662.50	12,950.77	12,103.22	43.51	44.90	-95.41	831.01	-4,194.26	4,297.90	4,235.69	62.21	69.088		
12,600.00	11,660.76	13,050.77	12,102.26	44.11	45.46	-95.42	931.00	-4,195.13	4,297.93	4,234.91	63.02	68.204		
12,700.00	11,659.01	13,150.77	12,101.29	44.75	46.08	-95.43	1,030.99	-4,195.99	4,297.96	4,234.06	63.90	67.263		
12,800.00	11,657.27	13,250.76	12,100.33	45.45	46.74	-95.44	1,130.98	-4,196.85	4,297.98	4,233.13	64.85	66.275		
12,900.00	11,655.53	13,350.76	12,099.37	46.19	47.45	-95.45	1,230.97	-4,197.71	4,298.01	4,232.14	65.87	65.247		
13,000.00	11,653.79	13,450.76	12,098.40	46.98	48.21	-95.47	1,330.96	-4,198.57	4,298.04	4,231.08	66.96	64.189		
13,100.00	11,652.05	13,550.75	12,097.44	47.82	49.01	-95.48	1,430.94	-4,199.44	4,298.07	4,229.96	68.11	63.106		
13,200.00	11,650.31	13,650.75	12,096.48	48.70	49.85	-95.49	1,530.93	-4,200.30	4,298.10	4,228.78	69.32	62.006		
13,300.00	11,648.57	13,750.75	12,095.52	49.61	50.73	-95.50	1,630.92	-4,201.16	4,298.13	4,227.55	70.58	60.896		
13,400.00	11,646.83	13,850.75	12,094.55	50.57	51.65	-95.51	1,730.91	-4,202.02	4,298.16	4,226.26	71.90	59.781		
13,500.00	11,645.09	13,950.74	12,093.59	51.55	52.61	-95.52	1,830.90	-4,202.88	4,298.19	4,224.92	73.27	58.666		
13,600.00	11,643.35	14,050.74	12,092.63	52.58	53.60	-95.53	1,930.89	-4,203.74	4,298.22	4,223.54	74.68	57.554		
13,700.00	11,641.61	14,150.74	12,091.66	53.63	54.62	-95.54	2,030.88	-4,204.61	4,298.25	4,222.11	76.14	56.451		
13,800.00	11,639.87	14,250.73	12,090.70	54.71	55.67	-95.55	2,130.86	-4,205.47	4,298.28	4,220.63	77.64	55.360		
13,900.00	11,638.13	14,350.73	12,089.74	55.82	56.75	-95.56	2,230.85	-4,206.33	4,298.31	4,219.12	79.18	54.282		
14,000.00	11,636.39	14,450.73	12,088.77	56.96	57.85	-95.57	2,330.84	-4,207.19	4,298.34	4,217.57	80.76	53.221		
14,100.00	11,634.65	14,550.72	12,087.81	58.12	58.99	-95.58	2,430.83	-4,208.05	4,298.37	4,215.99	82.38	52.178		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
14,200.00	11,632.91	14,650.72	12,086.85	59.31	60.14	-95.59	2,530.82	-4,208.92	4,298.40	4,214.37	84.03	51.155		
14,300.00	11,631.17	14,750.72	12,085.88	60.52	61.32	-95.60	2,630.81	-4,209.78	4,298.43	4,212.72	85.71	50.153		
14,400.00	11,629.42	14,850.71	12,084.92	61.74	62.52	-95.61	2,730.80	-4,210.64	4,298.46	4,211.04	87.42	49.173		
14,500.00	11,627.68	14,950.71	12,083.96	62.99	63.74	-95.62	2,830.78	-4,211.50	4,298.49	4,209.34	89.15	48.215		
14,600.00	11,625.94	15,050.71	12,083.00	64.26	64.98	-95.63	2,930.77	-4,212.36	4,298.52	4,207.61	90.92	47.280		
14,700.00	11,624.20	15,150.71	12,082.03	65.54	66.23	-95.64	3,030.76	-4,213.23	4,298.55	4,205.85	92.70	46.369		
14,800.00	11,622.46	15,250.70	12,081.07	66.84	67.51	-95.65	3,130.75	-4,214.09	4,298.58	4,204.07	94.52	45.480		
14,900.00	11,620.72	15,350.70	12,080.11	68.15	68.80	-95.66	3,230.74	-4,214.95	4,298.62	4,202.27	96.35	44.615		
15,000.00	11,618.98	15,450.70	12,079.14	69.48	70.10	-95.67	3,330.73	-4,215.81	4,298.65	4,200.44	98.20	43.773		
15,100.00	11,617.24	15,550.69	12,078.18	70.82	71.42	-95.68	3,430.72	-4,216.67	4,298.68	4,198.60	100.08	42.954		
15,200.00	11,615.50	15,650.69	12,077.22	72.18	72.76	-95.69	3,530.71	-4,217.54	4,298.71	4,196.74	101.97	42.157		
15,300.00	11,613.76	15,750.69	12,076.25	73.54	74.10	-95.70	3,630.69	-4,218.40	4,298.74	4,194.86	103.88	41.382		
15,400.00	11,612.02	15,850.68	12,075.29	74.92	75.46	-95.71	3,730.68	-4,219.26	4,298.77	4,192.97	105.81	40.629		
15,500.00	11,610.28	15,950.68	12,074.33	76.31	76.83	-95.72	3,830.67	-4,220.12	4,298.81	4,191.06	107.75	39.897		
15,600.00	11,608.54	16,050.68	12,073.36	77.71	78.21	-95.73	3,930.66	-4,220.98	4,298.84	4,189.13	109.70	39.185		
15,700.00	11,606.80	16,150.68	12,072.40	79.12	79.60	-95.75	4,030.65	-4,221.85	4,298.87	4,187.20	111.68	38.494		
15,800.00	11,605.06	16,250.67	12,071.44	80.54	81.00	-95.76	4,130.64	-4,222.71	4,298.90	4,185.24	113.66	37.823		
15,900.00	11,603.32	16,350.67	12,070.48	81.97	82.41	-95.77	4,230.63	-4,223.57	4,298.94	4,183.28	115.66	37.170		
16,000.00	11,601.57	16,450.67	12,069.51	83.40	83.83	-95.78	4,330.61	-4,224.43	4,298.97	4,181.31	117.67	36.536		
16,100.00	11,599.83	16,550.66	12,068.55	84.84	85.26	-95.79	4,430.60	-4,225.29	4,299.00	4,179.32	119.69	35.919		
16,200.00	11,598.09	16,650.66	12,067.59	86.30	86.69	-95.80	4,530.59	-4,226.16	4,299.04	4,177.32	121.72	35.320		
16,300.00	11,596.35	16,750.66	12,066.62	87.75	88.13	-95.81	4,630.58	-4,227.02	4,299.07	4,175.31	123.76	34.738		
16,400.00	11,594.61	16,850.65	12,065.66	89.22	89.58	-95.82	4,730.57	-4,227.88	4,299.10	4,173.29	125.81	34.172		
16,500.00	11,592.87	16,950.65	12,064.70	90.69	91.04	-95.83	4,830.56	-4,228.74	4,299.14	4,171.27	127.87	33.621		
16,600.00	11,591.13	17,050.65	12,063.73	92.17	92.50	-95.84	4,930.55	-4,229.60	4,299.17	4,169.23	129.94	33.086		
16,700.00	11,589.39	17,150.65	12,062.77	93.65	93.97	-95.85	5,030.53	-4,230.47	4,299.21	4,167.19	132.02	32.566		
16,800.00	11,587.65	17,250.64	12,061.81	95.14	95.45	-95.86	5,130.52	-4,231.33	4,299.24	4,165.14	134.10	32.060		
16,900.00	11,585.91	17,350.64	12,060.84	96.63	96.93	-95.87	5,230.51	-4,232.19	4,299.27	4,163.08	136.19	31.567		
17,000.00	11,584.17	17,450.64	12,059.88	98.13	98.41	-95.88	5,330.50	-4,233.05	4,299.31	4,161.01	138.29	31.088		
17,100.00	11,582.43	17,550.63	12,058.92	99.64	99.91	-95.89	5,430.49	-4,233.91	4,299.34	4,158.94	140.40	30.622		
17,200.00	11,580.69	17,650.63	12,057.95	101.14	101.40	-95.90	5,530.48	-4,234.78	4,299.38	4,156.86	142.52	30.168		
17,300.00	11,578.95	17,750.63	12,056.99	102.66	102.90	-95.91	5,630.47	-4,235.64	4,299.41	4,154.78	144.64	29.726		
17,400.00	11,577.21	17,850.62	12,056.03	104.17	104.41	-95.92	5,730.45	-4,236.50	4,299.45	4,152.69	146.76	29.295		
17,500.00	11,575.47	17,950.62	12,055.07	105.70	105.92	-95.93	5,830.44	-4,237.36	4,299.48	4,150.59	148.89	28.876		
17,600.00	11,573.73	18,050.62	12,054.10	107.22	107.43	-95.94	5,930.43	-4,238.22	4,299.52	4,148.49	151.03	28.468		
17,700.00	11,571.98	18,150.61	12,053.14	108.75	108.95	-95.95	6,030.42	-4,239.09	4,299.55	4,146.38	153.18	28.070		
17,800.00	11,570.24	18,250.61	12,052.18	110.28	110.47	-95.96	6,130.41	-4,239.95	4,299.59	4,144.27	155.32	27.682		
17,900.00	11,568.50	18,350.61	12,051.21	111.82	112.00	-95.97	6,230.40	-4,240.81	4,299.62	4,142.15	157.48	27.303		
18,000.00	11,566.76	18,450.61	12,050.25	113.36	113.53	-95.98	6,330.39	-4,241.67	4,299.66	4,140.03	159.63	26.934		
18,100.00	11,565.02	18,550.60	12,049.29	114.90	115.06	-95.99	6,430.37	-4,242.53	4,299.70	4,137.90	161.80	26.575		
18,200.00	11,563.28	18,650.60	12,048.32	116.44	116.60	-96.00	6,530.36	-4,243.39	4,299.73	4,135.77	163.96	26.224		
18,300.00	11,561.54	18,750.60	12,047.36	117.99	118.14	-96.01	6,630.35	-4,244.26	4,299.77	4,133.63	166.13	25.881		
18,400.00	11,559.80	18,850.59	12,046.40	119.54	119.68	-96.03	6,730.34	-4,245.12	4,299.80	4,131.50	168.31	25.547		
18,500.00	11,558.06	18,950.59	12,045.43	121.10	121.22	-96.04	6,830.33	-4,245.98	4,299.84	4,129.35	170.49	25.221		
18,600.00	11,556.32	19,050.59	12,044.47	122.65	122.77	-96.05	6,930.32	-4,246.84	4,299.88	4,127.21	172.67	24.902		
18,700.00	11,554.58	19,150.58	12,043.51	124.21	124.32	-96.06	7,030.31	-4,247.70	4,299.91	4,125.06	174.86	24.591		
18,800.00	11,552.84	19,250.58	12,042.55	125.77	125.87	-96.07	7,130.30	-4,248.57	4,299.95	4,122.91	177.04	24.287		
18,900.00	11,551.10	19,350.58	12,041.58	127.33	127.43	-96.08	7,230.28	-4,249.43	4,299.99	4,120.75	179.24	23.991		
19,000.00	11,549.36	19,450.58	12,040.62	128.90	128.99	-96.09	7,330.27	-4,250.29	4,300.03	4,118.59	181.43	23.700		
19,100.00	11,547.62	19,550.57	12,039.66	130.47	130.55	-96.10	7,430.26	-4,251.15	4,300.06	4,116.43	183.63	23.417		
19,200.00	11,545.88	19,650.57	12,038.69	132.04	132.11	-96.11	7,530.25	-4,252.01	4,300.10	4,114.27	185.83	23.140		
19,300.00	11,544.14	19,750.57	12,037.73	133.61	133.67	-96.12	7,630.24	-4,252.88	4,300.14	4,112.10	188.04	22.869		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
19,400.00	11,542.39	19,850.56	12,036.77	135.18	135.24	-96.13	7,730.23	-4,253.74	4,300.18	4,109.93	190.24	22.603		
19,500.00	11,540.65	19,950.56	12,035.80	136.76	136.81	-96.14	7,830.22	-4,254.60	4,300.21	4,107.76	192.45	22.344		
19,600.00	11,538.91	20,050.56	12,034.84	138.33	138.38	-96.15	7,930.20	-4,255.46	4,300.25	4,105.59	194.67	22.090		
19,700.00	11,537.17	20,150.55	12,033.88	139.91	139.95	-96.16	8,030.19	-4,256.32	4,300.29	4,103.41	196.88	21.842		
19,800.00	11,535.43	20,250.55	12,032.91	141.49	141.53	-96.17	8,130.18	-4,257.19	4,300.33	4,101.23	199.10	21.599		
19,900.00	11,533.69	20,350.55	12,031.95	143.08	143.10	-96.18	8,230.17	-4,258.05	4,300.37	4,099.05	201.32	21.361		
20,000.00	11,531.95	20,450.55	12,030.99	144.66	144.68	-96.19	8,330.16	-4,258.91	4,300.41	4,096.87	203.54	21.128		
20,100.00	11,530.21	20,550.54	12,030.03	146.24	146.26	-96.20	8,430.15	-4,259.77	4,300.44	4,094.68	205.76	20.900		
20,200.00	11,528.47	20,650.54	12,029.06	147.83	147.84	-96.21	8,530.14	-4,260.63	4,300.48	4,092.49	207.99	20.676		
20,300.00	11,526.73	20,750.54	12,028.10	149.42	149.42	-96.22	8,630.12	-4,261.50	4,300.52	4,090.31	210.22	20.458		
20,400.00	11,524.99	20,850.53	12,027.14	151.01	151.01	-96.23	8,730.11	-4,262.36	4,300.56	4,088.11	212.45	20.243		
20,500.00	11,523.25	20,950.53	12,026.17	152.60	152.59	-96.24	8,830.10	-4,263.22	4,300.60	4,085.92	214.68	20.033		
20,600.00	11,521.51	21,050.53	12,025.21	154.19	154.18	-96.25	8,930.09	-4,264.08	4,300.64	4,083.73	216.91	19.827		
20,700.00	11,519.77	21,150.52	12,024.25	155.78	155.77	-96.26	9,030.08	-4,264.94	4,300.68	4,081.53	219.15	19.625		
20,800.00	11,518.03	21,250.52	12,023.28	157.38	157.36	-96.27	9,130.07	-4,265.81	4,300.72	4,079.34	221.38	19.427		
20,900.00	11,516.29	21,350.52	12,022.32	158.97	158.95	-96.28	9,230.06	-4,266.67	4,300.76	4,077.14	223.62	19.232		
21,000.00	11,514.54	21,450.51	12,021.36	160.57	160.54	-96.29	9,330.04	-4,267.53	4,300.80	4,074.94	225.86	19.042		
21,100.00	11,512.80	21,550.51	12,020.39	162.17	162.13	-96.31	9,430.03	-4,268.39	4,300.84	4,072.74	228.10	18.855		
21,200.00	11,511.06	21,650.51	12,019.43	163.77	163.73	-96.32	9,530.02	-4,269.25	4,300.88	4,070.53	230.35	18.671		
21,300.00	11,509.32	21,750.51	12,018.47	165.37	165.32	-96.33	9,630.01	-4,270.12	4,300.92	4,068.33	232.59	18.491		
21,400.00	11,507.58	21,850.50	12,017.51	166.97	166.92	-96.34	9,730.00	-4,270.98	4,300.96	4,066.12	234.84	18.315		
21,500.00	11,505.84	21,950.50	12,016.54	168.57	168.51	-96.35	9,829.99	-4,271.84	4,301.00	4,063.92	237.08	18.141		
21,600.00	11,504.10	22,050.50	12,015.58	170.17	170.11	-96.36	9,929.98	-4,272.70	4,301.04	4,061.71	239.33	17.971		
21,700.00	11,502.36	22,150.49	12,014.62	171.78	171.71	-96.37	10,029.97	-4,273.56	4,301.08	4,059.50	241.58	17.804		
21,700.04	11,502.36	22,150.53	12,014.62	171.78	171.71	-96.37	10,030.00	-4,273.56	4,301.08	4,059.50	241.58	17.804		
21,800.00	11,500.62	22,238.31	12,013.77	173.38	173.12	-96.38	10,117.77	-4,274.32	4,301.14	4,057.44	243.70	17.649		
21,812.62	11,500.40	22,238.31	12,013.77	173.58	173.12	-96.38	10,117.77	-4,274.32	4,301.20	4,057.36	243.84	17.639 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	30.20	30.20	0.00	0.04	-90.01	-0.86	-3,772.08	3,772.08					
100.00	100.00	130.20	130.20	0.13	0.23	-90.01	-0.86	-3,772.08	3,772.08	3,771.81	0.27	N/A		
200.00	200.00	230.20	230.20	0.48	0.59	-90.01	-0.86	-3,772.08	3,772.08	3,771.32	0.76	4,932.236		
300.00	300.00	330.20	330.20	0.84	0.95	-90.01	-0.86	-3,772.08	3,772.08	3,770.81	1.27	2,969.664		
400.00	400.00	430.20	430.20	1.20	1.31	-90.01	-0.86	-3,772.08	3,772.08	3,770.30	1.78	2,123.320		
500.00	500.00	530.20	530.20	1.56	1.67	-90.01	-0.86	-3,772.08	3,772.08	3,769.80	2.28	1,652.182		
600.00	600.00	630.20	630.20	1.92	2.03	-90.01	-0.86	-3,772.08	3,772.08	3,769.29	2.79	1,352.091		
700.00	700.00	730.20	730.20	2.28	2.38	-90.01	-0.86	-3,772.08	3,772.08	3,768.78	3.30	1,144.232		
800.00	800.00	830.20	830.20	2.63	2.74	-90.01	-0.86	-3,772.08	3,772.08	3,768.28	3.80	991.754		
900.00	900.00	930.20	930.20	2.99	3.10	-90.01	-0.86	-3,772.08	3,772.08	3,767.77	4.31	875.130		
1,000.00	1,000.00	1,030.20	1,030.20	3.35	3.46	-90.01	-0.86	-3,772.08	3,772.08	3,767.26	4.82	783.046		
1,100.00	1,100.00	1,130.20	1,130.20	3.71	3.82	-90.01	-0.86	-3,772.08	3,772.08	3,766.76	5.32	708.493		
1,200.00	1,200.00	1,230.20	1,230.20	4.07	4.18	-90.01	-0.86	-3,772.08	3,772.08	3,766.25	5.83	646.902		
1,300.00	1,300.00	1,330.20	1,330.20	4.43	4.54	-90.01	-0.86	-3,772.08	3,772.08	3,765.74	6.34	595.161		
1,400.00	1,400.00	1,430.20	1,430.20	4.79	4.89	-90.01	-0.86	-3,772.08	3,772.08	3,765.24	6.84	551.084		
1,500.00	1,500.00	1,530.20	1,530.20	5.14	5.25	-90.01	-0.86	-3,772.08	3,772.08	3,764.73	7.35	513.085		
1,600.00	1,600.00	1,630.20	1,630.20	5.50	5.61	-90.01	-0.86	-3,772.08	3,772.08	3,764.22	7.86	479.989		
1,700.00	1,700.00	1,730.20	1,730.20	5.86	5.97	-90.01	-0.86	-3,772.08	3,772.08	3,763.71	8.37	450.903		
1,800.00	1,800.00	1,830.20	1,830.20	6.22	6.33	-90.01	-0.86	-3,772.08	3,772.08	3,763.21	8.87	425.140		
1,900.00	1,900.00	1,930.20	1,930.20	6.58	6.69	-90.01	-0.86	-3,772.08	3,772.08	3,762.70	9.38	402.162		
2,000.00	2,000.00	2,030.20	2,030.20	6.94	7.04	-90.01	-0.86	-3,772.08	3,772.08	3,762.19	9.89	381.541		
2,100.00	2,100.00	2,130.20	2,130.20	7.29	7.40	-90.01	-0.86	-3,772.08	3,772.08	3,761.69	10.39	362.931		
2,200.00	2,200.00	2,230.20	2,230.20	7.65	7.76	-90.01	-0.86	-3,772.08	3,772.08	3,761.18	10.90	346.052		
2,300.00	2,300.00	2,330.20	2,330.20	8.01	8.12	-90.01	-0.86	-3,772.08	3,772.08	3,760.67	11.41	330.674		
2,400.00	2,400.00	2,430.20	2,430.20	8.37	8.48	-90.01	-0.86	-3,772.08	3,772.08	3,760.17	11.91	316.604		
2,500.00	2,500.00	2,530.20	2,530.20	8.73	8.84	-90.01	-0.86	-3,772.08	3,772.08	3,759.66	12.42	303.682		
2,600.00	2,600.00	2,630.20	2,630.20	9.09	9.20	-90.01	-0.86	-3,772.08	3,772.08	3,759.15	12.93	291.774		
2,700.00	2,700.00	2,730.20	2,730.20	9.45	9.55	-90.01	-0.86	-3,772.08	3,772.08	3,758.65	13.44	280.764		
2,800.00	2,800.00	2,830.20	2,830.20	9.80	9.91	-90.01	-0.86	-3,772.08	3,772.08	3,758.14	13.94	270.555		
2,900.00	2,900.00	2,930.20	2,930.20	10.16	10.27	-90.01	-0.86	-3,772.08	3,772.08	3,757.63	14.45	261.063		
3,000.00	3,000.00	3,030.20	3,030.20	10.52	10.63	-90.01	-0.86	-3,772.08	3,772.08	3,757.12	14.96	252.214		
3,100.00	3,100.00	3,130.20	3,130.20	10.88	10.99	-90.01	-0.86	-3,772.08	3,772.08	3,756.62	15.46	243.945		
3,200.00	3,200.00	3,230.20	3,230.20	11.24	11.35	-90.06	-3.77	-3,766.97	3,771.35	3,754.96	16.39	230.077		
3,300.00	3,300.00	3,329.67	3,329.67	11.60	13.04	-90.29	-18.77	-3,740.68	3,761.82	3,744.47	17.36	216.744		
3,400.00	3,400.00	3,428.92	3,428.92	11.96	13.38	-90.38	-24.76	-3,730.17	3,751.25	3,733.41	17.85	210.213		
3,500.00	3,500.00	3,528.18	3,528.18	12.31	13.73	-90.47	-30.76	-3,719.66	3,740.69	3,722.35	18.34	204.011		
3,600.00	3,600.00	4,027.43	4,027.58	12.67	14.08	-90.57	-36.75	-3,709.16	3,730.14	3,711.31	18.83	198.116		
3,700.00	3,700.00	4,126.69	4,122.10	13.03	14.44	-90.66	-42.74	-3,698.65	3,719.60	3,700.28	19.32	192.508		
3,800.00	3,800.00	4,225.94	4,220.61	13.39	14.79	-90.76	-48.74	-3,688.14	3,709.07	3,689.25	19.82	187.166		
3,900.00	3,900.00	4,325.20	4,319.13	13.75	15.15	-90.85	-54.73	-3,677.63	3,698.55	3,678.23	20.31	182.074		
4,000.00	4,000.00	4,424.45	4,417.64	14.11	15.51	-90.95	-60.72	-3,667.13	3,688.04	3,667.22	20.81	177.215		
4,100.00	4,100.00	4,523.71	4,516.16	14.46	15.88	-91.05	-66.72	-3,656.62	3,677.54	3,656.23	21.31	172.574		
4,200.00	4,200.00	4,622.96	4,614.67	14.82	16.24	-91.14	-72.71	-3,646.11	3,667.05	3,645.24	21.81	168.137		
4,300.00	4,300.00	4,722.22	4,713.19	15.18	16.61	-91.24	-78.71	-3,635.60	3,656.57	3,634.26	22.31	163.893		
4,400.00	4,400.00	4,821.47	4,811.70	15.54	16.98	-91.34	-84.70	-3,625.10	3,646.10	3,623.29	22.81	159.829		
4,500.00	4,500.00	4,920.72	4,910.22	15.90	17.35	-91.44	-90.69	-3,614.59	3,635.64	3,612.33	23.32	155.934		
4,600.00	4,599.99	5,020.10	5,008.85	16.24	17.72	113.79	-96.69	-3,604.07	3,625.72	3,601.91	23.81	152.296		
4,700.00	4,699.91	5,119.66	5,107.67	16.56	18.10	113.87	-102.70	-3,593.53	3,616.85	3,592.56	24.29	148.913		
4,800.00	4,799.69	5,219.36	5,206.62	16.89	18.48	113.97	-108.72	-3,582.97	3,609.04	3,584.27	24.77	145.693		
4,899.98	4,899.25	5,319.09	5,305.61	17.22	18.86	114.10	-114.75	-3,572.41	3,602.29	3,577.03	25.26	142.629		
5,000.00	4,998.72	5,418.86	5,404.63	17.55	19.24	114.15	-120.77	-3,561.85	3,596.07	3,570.33	25.74	139.689		
5,100.00	5,098.17	5,518.61	5,503.64	17.88	19.62	114.20	-126.79	-3,551.29	3,589.86	3,563.63	26.23	136.846		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
5,200.00	5,197.63	5,618.36	5,602.65	18.21	20.00	114.26	-132.82	-3,540.73	3,583.65	3,556.93	26.72	134.097		
5,300.00	5,297.08	5,718.11	5,701.66	18.55	20.38	114.31	-138.84	-3,530.17	3,577.45	3,550.23	27.22	131.437		
5,400.00	5,396.53	5,817.87	5,800.67	18.89	20.77	114.36	-144.87	-3,519.61	3,571.24	3,543.53	27.71	128.863		
5,500.00	5,495.98	5,917.62	5,899.68	19.23	21.15	114.42	-150.89	-3,509.05	3,565.04	3,536.83	28.21	126.371		
5,600.00	5,595.44	6,017.37	5,998.69	19.58	21.54	114.47	-156.91	-3,498.49	3,558.85	3,530.14	28.71	123.958		
5,700.00	5,694.89	6,117.13	6,097.70	19.92	21.92	114.52	-162.94	-3,487.93	3,552.65	3,523.44	29.21	121.621		
5,800.00	5,794.34	6,216.88	6,196.71	20.27	22.31	114.58	-168.96	-3,477.37	3,546.46	3,516.75	29.71	119.357		
5,900.00	5,893.79	6,316.63	6,295.72	20.62	22.70	114.63	-174.98	-3,466.81	3,540.28	3,510.06	30.22	117.162		
6,000.00	5,993.24	6,416.38	6,394.73	20.97	23.09	114.69	-181.01	-3,456.25	3,534.09	3,503.37	30.72	115.034		
6,100.00	6,092.70	6,516.14	6,493.73	21.32	23.48	114.74	-187.03	-3,445.69	3,527.91	3,496.68	31.23	112.971		
6,200.00	6,192.15	6,615.89	6,592.74	21.68	23.87	114.79	-193.05	-3,435.13	3,521.73	3,490.00	31.74	110.969		
6,300.00	6,291.60	6,715.64	6,691.75	22.03	24.26	114.85	-199.08	-3,424.57	3,515.56	3,483.31	32.25	109.026		
6,400.00	6,391.05	6,815.39	6,790.76	22.39	24.65	114.90	-205.10	-3,414.01	3,509.39	3,476.63	32.76	107.140		
6,500.00	6,490.51	6,915.15	6,889.77	22.75	25.04	114.96	-211.12	-3,403.45	3,503.22	3,469.95	33.27	105.308		
6,600.00	6,589.96	7,014.90	6,988.78	23.11	25.43	115.01	-217.15	-3,392.89	3,497.05	3,463.28	33.78	103.529		
6,613.87	6,603.75	7,028.73	7,002.51	23.16	25.49	115.02	-217.98	-3,391.42	3,496.20	3,462.35	33.85	103.287		
6,700.00	6,689.50	7,100.00	7,073.25	23.47	25.77	114.97	-222.28	-3,383.89	3,490.52	3,456.26	34.26	101.887		
6,800.00	6,789.26	7,160.01	7,132.88	23.82	26.00	114.89	-225.60	-3,378.06	3,483.78	3,449.10	34.68	100.456		
6,900.00	6,889.17	7,200.00	7,172.67	24.17	26.16	114.80	-227.56	-3,374.63	3,477.27	3,442.22	35.05	99.215		
7,000.00	6,989.15	7,271.64	7,244.06	24.52	26.43	114.68	-230.55	-3,369.39	3,470.80	3,435.31	35.48	97.820		
7,013.85	7,003.00	7,300.00	7,272.35	24.57	26.53	-90.52	-231.55	-3,367.64	3,470.03	3,434.45	35.59	97.513		
7,100.00	7,089.15	7,327.53	7,299.83	24.87	26.63	-90.54	-232.42	-3,366.11	3,464.96	3,429.09	35.88	96.577		
7,200.00	7,189.15	7,400.00	7,372.20	25.22	26.90	-90.57	-234.24	-3,362.91	3,460.46	3,424.15	36.31	95.301		
7,300.00	7,289.15	7,439.60	7,411.77	25.57	27.04	-90.58	-234.95	-3,361.67	3,457.08	3,420.43	36.66	94.312		
7,400.00	7,389.15	7,500.00	7,472.15	25.92	27.25	-90.59	-235.64	-3,360.46	3,455.05	3,418.00	37.05	93.255		
7,500.00	7,489.15	7,557.85	7,530.00	26.27	27.44	-90.59	-235.86	-3,360.08	3,454.28	3,416.85	37.43	92.288		
7,537.31	7,526.46	7,584.51	7,556.66	26.40	27.53	-90.59	-235.86	-3,360.08	3,454.27	3,416.68	37.58	91.909		
7,600.00	7,589.15	7,647.20	7,619.35	26.62	27.74	-90.59	-235.86	-3,360.08	3,454.27	3,416.38	37.89	91.163		
7,700.00	7,689.15	7,747.20	7,719.35	26.97	28.08	-90.59	-235.86	-3,360.08	3,454.27	3,415.88	38.38	89.998		
7,800.00	7,789.15	7,847.20	7,819.35	27.32	28.42	-90.59	-235.86	-3,360.08	3,454.27	3,415.39	38.87	88.861		
7,900.00	7,889.15	7,947.20	7,919.35	27.67	28.75	-90.59	-235.86	-3,360.08	3,454.27	3,414.90	39.36	87.751		
8,000.00	7,989.15	8,047.20	8,019.35	28.03	29.09	-90.59	-235.86	-3,360.08	3,454.27	3,414.41	39.86	86.668		
8,100.00	8,089.15	8,147.20	8,119.35	28.38	29.43	-90.59	-235.86	-3,360.08	3,454.27	3,413.92	40.35	85.611		
8,200.00	8,189.15	8,247.20	8,219.35	28.73	29.77	-90.59	-235.86	-3,360.08	3,454.27	3,413.43	40.84	84.578		
8,300.00	8,289.15	8,347.20	8,319.35	29.08	30.11	-90.59	-235.86	-3,360.08	3,454.27	3,412.93	41.33	83.569		
8,400.00	8,389.15	8,447.20	8,419.35	29.43	30.45	-90.59	-235.86	-3,360.08	3,454.27	3,412.44	41.83	82.584		
8,500.00	8,489.15	8,547.20	8,519.35	29.79	30.79	-90.59	-235.86	-3,360.08	3,454.27	3,411.95	42.32	81.620		
8,600.00	8,589.15	8,647.20	8,619.35	30.14	31.13	-90.59	-235.86	-3,360.08	3,454.27	3,411.45	42.82	80.679		
8,700.00	8,689.15	8,747.20	8,719.35	30.49	31.47	-90.59	-235.86	-3,360.08	3,454.27	3,410.96	43.31	79.758		
8,800.00	8,789.15	8,847.20	8,819.35	30.85	31.81	-90.59	-235.86	-3,360.08	3,454.27	3,410.46	43.80	78.858		
8,900.00	8,889.15	8,947.20	8,919.35	31.20	32.15	-90.59	-235.86	-3,360.08	3,454.27	3,409.97	44.30	77.977		
9,000.00	8,989.15	9,047.20	9,019.35	31.55	32.49	-90.59	-235.86	-3,360.08	3,454.27	3,409.47	44.79	77.115		
9,100.00	9,089.15	9,147.20	9,119.35	31.91	32.84	-90.59	-235.86	-3,360.08	3,454.27	3,408.98	45.29	76.271		
9,200.00	9,189.15	9,247.20	9,219.35	32.26	33.18	-90.59	-235.86	-3,360.08	3,454.27	3,408.48	45.78	75.446		
9,300.00	9,289.15	9,347.20	9,319.35	32.61	33.52	-90.59	-235.86	-3,360.08	3,454.27	3,407.99	46.28	74.637		
9,400.00	9,389.15	9,447.20	9,419.35	32.97	33.86	-90.59	-235.86	-3,360.08	3,454.27	3,407.49	46.78	73.846		
9,500.00	9,489.15	9,547.20	9,519.35	33.32	34.21	-90.59	-235.86	-3,360.08	3,454.27	3,406.99	47.27	73.071		
9,600.00	9,589.15	9,647.20	9,619.35	33.67	34.55	-90.59	-235.86	-3,360.08	3,454.27	3,406.50	47.77	72.311		
9,700.00	9,689.15	9,747.20	9,719.35	34.03	34.90	-90.59	-235.86	-3,360.08	3,454.27	3,406.00	48.27	71.567		
9,800.00	9,789.15	9,847.20	9,819.35	34.38	35.24	-90.59	-235.86	-3,360.08	3,454.27	3,405.50	48.76	70.837		
9,900.00	9,889.15	9,947.20	9,919.35	34.74	35.58	-90.59	-235.86	-3,360.08	3,454.27	3,405.01	49.26	70.122		
10,000.00	9,989.15	10,047.20	10,019.35	35.09	35.93	-90.59	-235.86	-3,360.08	3,454.27	3,404.51	49.76	69.422		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
10,100.00	10,089.15	10,147.20	10,119.35	35.44	36.28	-90.59	-235.86	-3,360.08	3,454.27	3,404.01	50.26	68.734		
10,200.00	10,189.15	10,247.20	10,219.35	35.80	36.62	-90.59	-235.86	-3,360.08	3,454.27	3,403.51	50.75	68.060		
10,300.00	10,289.15	10,347.20	10,319.35	36.15	36.97	-90.59	-235.86	-3,360.08	3,454.27	3,403.02	51.25	67.399		
10,400.00	10,389.15	10,447.20	10,419.35	36.51	37.31	-90.59	-235.86	-3,360.08	3,454.27	3,402.52	51.75	66.750		
10,500.00	10,489.15	10,547.20	10,519.35	36.86	37.66	-90.59	-235.86	-3,360.08	3,454.27	3,402.02	52.25	66.114		
10,600.00	10,589.15	10,647.20	10,619.35	37.22	38.01	-90.59	-235.86	-3,360.08	3,454.27	3,401.52	52.75	65.489		
10,700.00	10,689.15	10,747.20	10,719.35	37.57	38.35	-90.59	-235.86	-3,360.08	3,454.27	3,401.02	53.24	64.876		
10,800.00	10,789.15	10,847.20	10,819.35	37.93	38.70	-90.59	-235.86	-3,360.08	3,454.27	3,400.52	53.74	64.273		
10,900.00	10,889.15	10,947.20	10,919.35	38.28	39.05	-90.59	-235.86	-3,360.08	3,454.27	3,400.02	54.24	63.682		
11,000.00	10,989.15	11,047.20	11,019.35	38.64	39.39	-90.59	-235.86	-3,360.08	3,454.27	3,399.52	54.74	63.102		
11,108.85	11,098.00	11,156.05	11,128.20	39.02	39.77	-90.59	-235.86	-3,360.08	3,454.27	3,398.98	55.28	62.481 CC		
11,150.00	11,139.12	11,197.16	11,169.32	39.17	39.91	-90.10	-235.86	-3,360.08	3,454.27	3,398.78	55.49	62.252		
11,200.00	11,188.77	11,246.82	11,218.97	39.34	40.09	-90.19	-235.86	-3,360.08	3,454.28	3,398.55	55.73	61.979		
11,250.00	11,237.73	11,295.78	11,267.93	39.50	40.26	-90.35	-235.86	-3,360.08	3,454.33	3,398.36	55.97	61.716		
11,300.00	11,285.62	11,343.67	11,315.82	39.66	40.42	-90.57	-235.86	-3,360.08	3,454.45	3,398.25	56.20	61.464		
11,350.00	11,332.09	11,390.14	11,362.29	39.81	40.59	-90.83	-235.86	-3,360.08	3,454.69	3,398.27	56.43	61.224		
11,400.00	11,376.78	11,439.26	11,411.39	39.95	40.76	-91.14	-234.94	-3,360.09	3,455.10	3,398.45	56.65	60.988		
11,450.00	11,419.35	11,492.58	11,464.41	40.08	40.93	-91.47	-229.46	-3,360.13	3,455.65	3,398.76	56.88	60.753		
11,500.00	11,459.47	11,548.60	11,519.31	40.20	41.11	-91.80	-218.42	-3,360.23	3,456.31	3,399.21	57.11	60.525		
11,550.00	11,496.84	11,607.65	11,575.72	40.32	41.29	-92.12	-201.03	-3,360.38	3,457.08	3,399.76	57.33	60.306		
11,600.00	11,531.17	11,670.07	11,638.06	40.44	41.45	-92.45	-176.45	-3,360.59	3,457.93	3,400.40	57.54	60.097		
11,650.00	11,562.21	11,736.19	11,690.50	40.55	41.61	-92.77	-143.79	-3,360.87	3,458.84	3,401.09	57.75	59.895		
11,700.00	11,589.71	11,806.25	11,746.83	40.67	41.75	-93.08	-102.20	-3,361.22	3,459.76	3,401.81	57.95	59.699		
11,750.00	11,613.47	11,880.42	11,800.46	40.79	41.87	-93.37	-51.04	-3,361.66	3,460.66	3,402.50	58.15	59.508		
11,800.00	11,633.31	11,958.68	11,849.39	40.91	41.96	-93.63	9.96	-3,362.18	3,461.47	3,403.12	58.36	59.317		
11,850.00	11,649.08	12,040.75	11,891.27	41.04	42.02	-93.85	80.45	-3,362.78	3,462.16	3,403.60	58.56	59.121		
11,900.00	11,660.65	12,126.05	11,923.67	41.16	42.05	-94.02	159.27	-3,363.45	3,462.68	3,403.91	58.77	58.915		
11,950.00	11,667.94	12,213.68	11,944.40	41.29	42.20	-94.12	244.32	-3,364.18	3,462.98	3,403.98	59.00	58.694		
12,000.00	11,670.89	12,302.47	11,951.94	41.42	42.43	-94.15	332.70	-3,364.93	3,463.05	3,403.81	59.24	58.459		
12,018.66	11,670.87	12,325.46	11,951.81	41.47	42.50	-94.15	355.69	-3,365.13	3,463.03	3,403.72	59.32	58.382		
12,018.82	11,670.87	12,325.63	11,951.80	41.47	42.50	-94.15	355.85	-3,365.13	3,463.03	3,403.72	59.32	58.381		
12,100.00	11,669.46	12,406.80	11,951.02	41.72	42.74	-94.16	437.02	-3,365.82	3,463.04	3,403.39	59.65	58.058		
12,200.00	11,667.72	12,506.80	11,950.06	42.08	43.09	-94.18	537.01	-3,366.67	3,463.04	3,402.90	60.14	57.586		
12,300.00	11,665.98	12,606.80	11,949.10	42.50	43.50	-94.19	637.00	-3,367.53	3,463.04	3,402.33	60.71	57.041		
12,400.00	11,664.24	12,706.79	11,948.13	42.98	43.96	-94.20	736.99	-3,368.38	3,463.04	3,401.67	61.37	56.430		
12,500.00	11,662.50	12,806.79	11,947.17	43.51	44.48	-94.21	836.98	-3,369.23	3,463.05	3,400.94	62.11	55.759		
12,600.00	11,660.76	12,906.79	11,946.21	44.11	45.05	-94.23	936.96	-3,370.09	3,463.05	3,400.13	62.92	55.036		
12,700.00	11,659.01	13,006.78	11,945.25	44.75	45.67	-94.24	1,036.95	-3,370.94	3,463.05	3,399.24	63.81	54.268		
12,800.00	11,657.27	13,106.78	11,944.28	45.45	46.34	-94.25	1,136.94	-3,371.79	3,463.06	3,398.28	64.78	53.462		
12,900.00	11,655.53	13,206.78	11,943.32	46.19	47.06	-94.27	1,236.93	-3,372.65	3,463.06	3,397.25	65.81	52.625		
13,000.00	11,653.79	13,306.77	11,942.36	46.98	47.83	-94.28	1,336.92	-3,373.50	3,463.06	3,396.16	66.90	51.763		
13,100.00	11,652.05	13,406.77	11,941.40	47.82	48.63	-94.29	1,436.91	-3,374.35	3,463.07	3,395.01	68.06	50.882		
13,200.00	11,650.31	13,506.77	11,940.43	48.70	49.48	-94.31	1,536.90	-3,375.21	3,463.07	3,393.79	69.28	49.988		
13,300.00	11,648.57	13,606.76	11,939.47	49.61	50.37	-94.32	1,636.89	-3,376.06	3,463.08	3,392.52	70.55	49.086		
13,400.00	11,646.83	13,706.76	11,938.51	50.57	51.29	-94.33	1,736.87	-3,376.91	3,463.08	3,391.20	71.88	48.180		
13,500.00	11,645.09	13,806.76	11,937.54	51.55	52.26	-94.34	1,836.86	-3,377.76	3,463.09	3,389.83	73.25	47.275		
13,600.00	11,643.35	13,906.76	11,936.58	52.58	53.25	-94.36	1,936.85	-3,378.62	3,463.09	3,388.41	74.68	46.374		
13,700.00	11,641.61	14,006.75	11,935.62	53.63	54.28	-94.37	2,036.84	-3,379.47	3,463.09	3,386.95	76.15	45.480		
13,800.00	11,639.87	14,106.75	11,934.66	54.71	55.33	-94.38	2,136.83	-3,380.32	3,463.10	3,385.44	77.66	44.595		
13,900.00	11,638.13	14,206.75	11,933.69	55.82	56.42	-94.40	2,236.82	-3,381.18	3,463.11	3,383.90	79.21	43.722		
14,000.00	11,636.39	14,306.74	11,932.73	56.96	57.53	-94.41	2,336.81	-3,382.03	3,463.11	3,382.32	80.79	42.863		
14,100.00	11,634.65	14,406.74	11,931.77	58.12	58.67	-94.42	2,436.79	-3,382.88	3,463.12	3,380.70	82.42	42.019		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
14,200.00	11,632.91	14,506.74	11,930.81	59.31	59.83	-94.43	2,536.78	-3,383.74	3,463.12	3,379.05	84.07	41.192		
14,300.00	11,631.17	14,606.73	11,929.84	60.52	61.01	-94.45	2,636.77	-3,384.59	3,463.13	3,377.37	85.76	40.381		
14,400.00	11,629.42	14,706.73	11,928.88	61.74	62.22	-94.46	2,736.76	-3,385.44	3,463.14	3,375.66	87.48	39.589		
14,500.00	11,627.68	14,806.73	11,927.92	62.99	63.44	-94.47	2,836.75	-3,386.30	3,463.14	3,373.92	89.22	38.815		
14,600.00	11,625.94	14,906.73	11,926.96	64.26	64.68	-94.49	2,936.74	-3,387.15	3,463.15	3,372.16	90.99	38.060		
14,700.00	11,624.20	15,006.72	11,925.99	65.54	65.95	-94.50	3,036.73	-3,388.00	3,463.16	3,370.37	92.79	37.323		
14,800.00	11,622.46	15,106.72	11,925.03	66.84	67.22	-94.51	3,136.72	-3,388.85	3,463.16	3,368.56	94.61	36.606		
14,900.00	11,620.72	15,206.72	11,924.07	68.15	68.52	-94.52	3,236.70	-3,389.71	3,463.17	3,366.72	96.45	35.907		
15,000.00	11,618.98	15,306.71	11,923.10	69.48	69.83	-94.54	3,336.69	-3,390.56	3,463.18	3,364.87	98.31	35.227		
15,100.00	11,617.24	15,406.71	11,922.14	70.82	71.15	-94.55	3,436.68	-3,391.41	3,463.18	3,362.99	100.19	34.566		
15,200.00	11,615.50	15,506.71	11,921.18	72.18	72.49	-94.56	3,536.67	-3,392.27	3,463.19	3,361.10	102.09	33.923		
15,300.00	11,613.76	15,606.70	11,920.22	73.54	73.84	-94.58	3,636.66	-3,393.12	3,463.20	3,359.19	104.01	33.298		
15,400.00	11,612.02	15,706.70	11,919.25	74.92	75.20	-94.59	3,736.65	-3,393.97	3,463.21	3,357.27	105.94	32.691		
15,500.00	11,610.28	15,806.70	11,918.29	76.31	76.57	-94.60	3,836.64	-3,394.83	3,463.22	3,355.33	107.89	32.100		
15,600.00	11,608.54	15,906.69	11,917.33	77.71	77.96	-94.61	3,936.63	-3,395.68	3,463.22	3,353.37	109.85	31.526		
15,700.00	11,606.80	16,006.69	11,916.37	79.12	79.35	-94.63	4,036.61	-3,396.53	3,463.23	3,351.40	111.83	30.969		
15,800.00	11,605.06	16,106.69	11,915.40	80.54	80.76	-94.64	4,136.60	-3,397.39	3,463.24	3,349.42	113.82	30.427		
15,900.00	11,603.32	16,206.69	11,914.44	81.97	82.17	-94.65	4,236.59	-3,398.24	3,463.25	3,347.43	115.82	29.901		
16,000.00	11,601.57	16,306.68	11,913.48	83.40	83.59	-94.67	4,336.58	-3,399.09	3,463.26	3,345.42	117.84	29.390		
16,100.00	11,599.83	16,406.68	11,912.51	84.84	85.02	-94.68	4,436.57	-3,399.94	3,463.27	3,343.40	119.86	28.893		
16,200.00	11,598.09	16,506.68	11,911.55	86.30	86.46	-94.69	4,536.56	-3,400.80	3,463.28	3,341.38	121.90	28.411		
16,300.00	11,596.35	16,606.67	11,910.59	87.75	87.90	-94.70	4,636.55	-3,401.65	3,463.29	3,339.34	123.95	27.942		
16,400.00	11,594.61	16,706.67	11,909.63	89.22	89.36	-94.72	4,736.53	-3,402.50	3,463.30	3,337.29	126.00	27.486		
16,500.00	11,592.87	16,806.67	11,908.66	90.69	90.82	-94.73	4,836.52	-3,403.36	3,463.31	3,335.24	128.07	27.042		
16,600.00	11,591.13	16,906.66	11,907.70	92.17	92.28	-94.74	4,936.51	-3,404.21	3,463.32	3,333.17	130.14	26.611		
16,700.00	11,589.39	17,006.66	11,906.74	93.65	93.75	-94.76	5,036.50	-3,405.06	3,463.33	3,331.10	132.23	26.192		
16,800.00	11,587.65	17,106.66	11,905.78	95.14	95.23	-94.77	5,136.49	-3,405.92	3,463.34	3,329.02	134.32	25.785		
16,900.00	11,585.91	17,206.66	11,904.81	96.63	96.71	-94.78	5,236.48	-3,406.77	3,463.35	3,326.93	136.42	25.388		
17,000.00	11,584.17	17,306.65	11,903.85	98.13	98.20	-94.80	5,336.47	-3,407.62	3,463.36	3,324.84	138.52	25.002		
17,100.00	11,582.43	17,406.65	11,902.89	99.64	99.70	-94.81	5,436.46	-3,408.48	3,463.37	3,322.74	140.64	24.627		
17,200.00	11,580.69	17,506.65	11,901.93	101.14	101.20	-94.82	5,536.44	-3,409.33	3,463.38	3,320.63	142.75	24.261		
17,300.00	11,578.95	17,606.64	11,900.96	102.66	102.70	-94.83	5,636.43	-3,410.18	3,463.39	3,318.51	144.88	23.905		
17,400.00	11,577.21	17,706.64	11,900.00	104.17	104.21	-94.85	5,736.42	-3,411.03	3,463.41	3,316.39	147.01	23.559		
17,500.00	11,575.47	17,806.64	11,899.04	105.70	105.72	-94.86	5,836.41	-3,411.89	3,463.42	3,314.27	149.15	23.221		
17,600.00	11,573.73	17,906.63	11,898.07	107.22	107.24	-94.87	5,936.40	-3,412.74	3,463.43	3,312.13	151.29	22.892		
17,700.00	11,571.98	18,006.63	11,897.11	108.75	108.76	-94.89	6,036.39	-3,413.59	3,463.44	3,310.00	153.44	22.572		
17,800.00	11,570.24	18,106.63	11,896.15	110.28	110.28	-94.90	6,136.38	-3,414.45	3,463.45	3,307.86	155.60	22.259		
17,900.00	11,568.50	18,206.62	11,895.19	111.82	111.81	-94.91	6,236.36	-3,415.30	3,463.47	3,305.71	157.76	21.955		
18,000.00	11,566.76	18,306.62	11,894.22	113.36	113.34	-94.92	6,336.35	-3,416.15	3,463.48	3,303.56	159.92	21.658		
18,100.00	11,565.02	18,406.62	11,893.26	114.90	114.87	-94.94	6,436.34	-3,417.01	3,463.49	3,301.40	162.09	21.368		
18,200.00	11,563.28	18,506.62	11,892.30	116.44	116.41	-94.95	6,536.33	-3,417.86	3,463.50	3,299.25	164.26	21.086		
18,300.00	11,561.54	18,606.61	11,891.34	117.99	117.95	-94.96	6,636.32	-3,418.71	3,463.52	3,297.08	166.43	20.810		
18,400.00	11,559.80	18,706.61	11,890.37	119.54	119.50	-94.98	6,736.31	-3,419.57	3,463.53	3,294.92	168.61	20.541		
18,500.00	11,558.06	18,806.61	11,889.41	121.10	121.04	-94.99	6,836.30	-3,420.42	3,463.54	3,292.75	170.80	20.279		
18,600.00	11,556.32	18,906.60	11,888.45	122.65	122.59	-95.00	6,936.29	-3,421.27	3,463.56	3,290.57	172.99	20.022		
18,700.00	11,554.58	19,006.60	11,887.48	124.21	124.14	-95.01	7,036.27	-3,422.13	3,463.57	3,288.40	175.18	19.772		
18,800.00	11,552.84	19,106.60	11,886.52	125.77	125.70	-95.03	7,136.26	-3,422.98	3,463.59	3,286.22	177.37	19.528		
18,900.00	11,551.10	19,206.59	11,885.56	127.33	127.26	-95.04	7,236.25	-3,423.83	3,463.60	3,284.03	179.57	19.289		
19,000.00	11,549.36	19,306.59	11,884.60	128.90	128.82	-95.05	7,336.24	-3,424.68	3,463.61	3,281.85	181.77	19.055		
19,100.00	11,547.62	19,406.59	11,883.63	130.47	130.38	-95.07	7,436.23	-3,425.54	3,463.63	3,279.66	183.97	18.827		
19,200.00	11,545.88	19,506.59	11,882.67	132.04	131.94	-95.08	7,536.22	-3,426.39	3,463.64	3,277.47	186.18	18.604		
19,300.00	11,544.14	19,606.58	11,881.71	133.61	133.51	-95.09	7,636.21	-3,427.24	3,463.66	3,275.27	188.39	18.386		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
19,400.00	11,542.39	19,706.58	11,880.75	135.18	135.07	-95.10	7,736.20	-3,428.10	3,463.67	3,273.08	190.60	18.173		
19,500.00	11,540.65	19,806.58	11,879.78	136.76	136.64	-95.12	7,836.18	-3,428.95	3,463.69	3,270.88	192.81	17.964		
19,600.00	11,538.91	19,906.57	11,878.82	138.33	138.22	-95.13	7,936.17	-3,429.80	3,463.70	3,268.68	195.03	17.760		
19,700.00	11,537.17	20,006.57	11,877.86	139.91	139.79	-95.14	8,036.16	-3,430.66	3,463.72	3,266.47	197.25	17.560		
19,800.00	11,535.43	20,106.57	11,876.90	141.49	141.36	-95.16	8,136.15	-3,431.51	3,463.74	3,264.27	199.47	17.365		
19,900.00	11,533.69	20,206.56	11,875.93	143.08	142.94	-95.17	8,236.14	-3,432.36	3,463.75	3,262.06	201.69	17.173		
20,000.00	11,531.95	20,306.56	11,874.97	144.66	144.52	-95.18	8,336.13	-3,433.22	3,463.77	3,259.85	203.92	16.986		
20,100.00	11,530.21	20,406.56	11,874.01	146.24	146.10	-95.20	8,436.12	-3,434.07	3,463.78	3,257.64	206.15	16.803		
20,200.00	11,528.47	20,506.56	11,873.04	147.83	147.68	-95.21	8,536.10	-3,434.92	3,463.80	3,255.42	208.38	16.623		
20,300.00	11,526.73	20,606.55	11,872.08	149.42	149.27	-95.22	8,636.09	-3,435.77	3,463.82	3,253.21	210.61	16.447		
20,400.00	11,524.99	20,706.55	11,871.12	151.01	150.85	-95.23	8,736.08	-3,436.63	3,463.83	3,250.99	212.84	16.274		
20,500.00	11,523.25	20,806.55	11,870.16	152.60	152.44	-95.25	8,836.07	-3,437.48	3,463.85	3,248.77	215.08	16.105		
20,600.00	11,521.51	20,906.54	11,869.19	154.19	154.03	-95.26	8,936.06	-3,438.33	3,463.87	3,246.55	217.32	15.939		
20,700.00	11,519.77	21,006.54	11,868.23	155.78	155.61	-95.27	9,036.05	-3,439.19	3,463.88	3,244.33	219.55	15.777		
20,800.00	11,518.03	21,106.54	11,867.27	157.38	157.20	-95.29	9,136.04	-3,440.04	3,463.90	3,242.11	221.80	15.618		
20,900.00	11,516.29	21,206.53	11,866.31	158.97	158.80	-95.30	9,236.03	-3,440.89	3,463.92	3,239.88	224.04	15.461		
21,000.00	11,514.54	21,306.53	11,865.34	160.57	160.39	-95.31	9,336.01	-3,441.75	3,463.94	3,237.66	226.28	15.308		
21,100.00	11,512.80	21,406.53	11,864.38	162.17	161.98	-95.32	9,436.00	-3,442.60	3,463.96	3,235.43	228.53	15.158		
21,200.00	11,511.06	21,506.52	11,863.42	163.77	163.58	-95.34	9,535.99	-3,443.45	3,463.97	3,233.20	230.78	15.010		
21,300.00	11,509.32	21,606.52	11,862.46	165.37	165.17	-95.35	9,635.98	-3,444.31	3,463.99	3,230.97	233.02	14.865		
21,400.00	11,507.58	21,706.52	11,861.49	166.97	166.77	-95.36	9,735.97	-3,445.16	3,464.01	3,228.74	235.27	14.723		
21,500.00	11,505.84	21,806.52	11,860.53	168.57	168.37	-95.38	9,835.96	-3,446.01	3,464.03	3,226.50	237.53	14.584		
21,600.00	11,504.10	21,906.51	11,859.57	170.17	169.97	-95.39	9,935.95	-3,446.86	3,464.05	3,224.27	239.78	14.447		
21,700.00	11,502.36	22,006.51	11,858.60	171.78	171.57	-95.40	10,035.94	-3,447.72	3,464.07	3,222.04	242.03	14.312		
21,702.80	11,502.31	22,009.30	11,858.58	171.82	171.61	-95.40	10,038.73	-3,447.74	3,464.07	3,221.97	242.09	14.309		
21,800.00	11,500.62	22,099.37	11,857.71	173.38	173.06	-95.41	10,128.79	-3,448.51	3,464.09	3,219.90	244.20	14.186		
21,812.62	11,500.40	22,099.37	11,857.71	173.58	173.06	-95.41	10,128.79	-3,448.51	3,464.15	3,219.83	244.32	14.179 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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
0.00	0.00	1.00	1.00	0.00	0.00	-90.47	-0.58	-69.98	69.98				
100.00	100.00	101.00	101.00	0.13	0.13	-90.47	-0.58	-69.98	69.98	69.80	0.18	388.819	
200.00	200.00	201.00	201.00	0.48	0.49	-90.47	-0.58	-69.98	69.98	69.30	0.69	101.877	
300.00	300.00	301.00	301.00	0.84	0.85	-90.47	-0.58	-69.98	69.98	68.79	1.19	58.617	
400.00	400.00	401.00	401.00	1.20	1.20	-90.47	-0.58	-69.98	69.98	68.28	1.70	41.146	
500.00	500.00	501.00	501.00	1.56	1.56	-90.47	-0.58	-69.98	69.98	67.77	2.21	31.698	
600.00	600.00	601.00	601.00	1.92	1.92	-90.47	-0.58	-69.98	69.98	67.27	2.71	25.779	
700.00	700.00	701.00	701.00	2.28	2.28	-90.47	-0.58	-69.98	69.98	66.76	3.22	21.722	
800.00	800.00	801.00	801.00	2.63	2.64	-90.47	-0.58	-69.98	69.98	66.25	3.73	18.769	
900.00	900.00	901.00	901.00	2.99	3.00	-90.47	-0.58	-69.98	69.98	65.75	4.24	16.522	
1,000.00	1,000.00	1,001.00	1,001.00	3.35	3.36	-90.47	-0.58	-69.98	69.98	65.24	4.74	14.756	
1,100.00	1,100.00	1,101.00	1,101.00	3.71	3.71	-90.47	-0.58	-69.98	69.98	64.73	5.25	13.331	
1,200.00	1,200.00	1,201.00	1,201.00	4.07	4.07	-90.47	-0.58	-69.98	69.98	64.23	5.76	12.157	
1,300.00	1,300.00	1,301.00	1,301.00	4.43	4.43	-90.47	-0.58	-69.98	69.98	63.72	6.26	11.173	
1,400.00	1,400.00	1,401.00	1,401.00	4.79	4.79	-90.47	-0.58	-69.98	69.98	63.21	6.77	10.337	
1,500.00	1,500.00	1,501.00	1,501.00	5.14	5.15	-90.47	-0.58	-69.98	69.98	62.71	7.28	9.616	
1,600.00	1,600.00	1,601.00	1,601.00	5.50	5.51	-90.47	-0.58	-69.98	69.98	62.20	7.78	8.990	
1,700.00	1,700.00	1,701.00	1,701.00	5.86	5.86	-90.47	-0.58	-69.98	69.98	61.69	8.29	8.441	
1,800.00	1,800.00	1,801.00	1,801.00	6.22	6.22	-90.47	-0.58	-69.98	69.98	61.18	8.80	7.954	
1,900.00	1,900.00	1,901.00	1,901.00	6.58	6.58	-90.47	-0.58	-69.98	69.98	60.68	9.31	7.521	
2,000.00	2,000.00	2,001.00	2,001.00	6.94	6.94	-90.47	-0.58	-69.98	69.98	60.17	9.81	7.132	
2,100.00	2,100.00	2,101.00	2,101.00	7.29	7.30	-90.47	-0.58	-69.98	69.98	59.66	10.32	6.782	
2,200.00	2,200.00	2,201.00	2,201.00	7.65	7.66	-90.47	-0.58	-69.98	69.98	59.16	10.83	6.464	
2,300.00	2,300.00	2,301.00	2,301.00	8.01	8.02	-90.47	-0.58	-69.98	69.98	58.65	11.33	6.175	
2,400.00	2,400.00	2,401.00	2,401.00	8.37	8.37	-90.47	-0.58	-69.98	69.98	58.14	11.84	5.911	
2,500.00	2,500.00	2,501.00	2,501.00	8.73	8.73	-90.47	-0.58	-69.98	69.98	57.64	12.35	5.668	
2,600.00	2,600.00	2,601.00	2,601.00	9.09	9.09	-90.47	-0.58	-69.98	69.98	57.13	12.85	5.444	
2,700.00	2,700.00	2,701.00	2,701.00	9.45	9.45	-90.47	-0.58	-69.98	69.98	56.62	13.36	5.238	
2,800.00	2,800.00	2,801.00	2,801.00	9.80	9.81	-90.47	-0.58	-69.98	69.98	56.11	13.87	5.046	
2,900.00	2,900.00	2,901.00	2,901.00	10.16	10.17	-90.47	-0.58	-69.98	69.98	55.61	14.37	4.868	
3,000.00	3,000.00	3,001.00	3,001.00	10.52	10.52	-90.47	-0.58	-69.98	69.98	55.10	14.88	4.703	
3,100.00	3,100.00	3,101.00	3,101.00	10.88	10.88	-90.47	-0.58	-69.98	69.98	54.59	15.39	4.548	
3,116.33	3,116.33	3,117.33	3,117.33	10.94	10.94	-90.47	-0.58	-69.98	69.98	54.51	15.47	4.523 CC	
3,200.00	3,200.00	3,200.98	3,200.98	11.24	11.24	-90.47	-0.58	-69.98	69.98	54.09	15.90	4.403 ES	
3,300.00	3,300.00	3,300.00	3,299.99	11.60	11.59	-90.70	-0.87	-71.26	71.27	54.88	16.39	4.348	
3,400.00	3,400.00	3,397.29	3,397.20	11.96	11.91	-91.31	-1.72	-74.95	75.06	58.21	16.85	4.453	
3,500.00	3,500.00	3,495.12	3,494.83	12.31	12.25	-92.20	-3.12	-81.09	81.38	64.07	17.31	4.700	
3,600.00	3,600.00	3,592.56	3,591.87	12.67	12.58	-93.24	-5.07	-89.63	90.23	72.47	17.76	5.081	
3,700.00	3,700.00	3,689.50	3,688.16	13.03	12.92	-94.30	-7.56	-100.51	101.61	83.42	18.20	5.584	
3,800.00	3,800.00	3,787.37	3,785.11	13.39	13.26	-95.30	-10.54	-113.55	115.14	96.48	18.66	6.171	
3,900.00	3,900.00	3,886.39	3,883.17	13.75	13.62	-96.12	-13.61	-126.99	128.95	109.80	19.15	6.734	
4,000.00	4,000.00	3,985.42	3,981.24	14.11	13.97	-96.77	-16.68	-140.42	142.79	123.14	19.64	7.269	
4,100.00	4,100.00	4,084.45	4,079.30	14.46	14.33	-97.32	-19.75	-153.86	156.63	136.50	20.14	7.778	
4,200.00	4,200.00	4,183.47	4,177.36	14.82	14.69	-97.77	-22.82	-167.30	170.49	149.86	20.63	8.264	
4,300.00	4,300.00	4,282.50	4,275.42	15.18	15.06	-98.15	-25.90	-180.74	184.36	163.24	21.13	8.726	
4,400.00	4,400.00	4,381.53	4,373.49	15.54	15.43	-98.48	-28.97	-194.17	198.24	176.62	21.62	9.168	
4,500.00	4,500.00	4,480.55	4,471.55	15.90	15.80	-98.77	-32.04	-207.61	212.12	190.00	22.12	9.589	
4,600.00	4,599.99	4,579.53	4,569.56	16.24	16.17	106.26	-35.11	-221.04	226.37	203.76	22.61	10.014	
4,700.00	4,699.91	4,678.36	4,667.43	16.56	16.55	106.71	-38.17	-234.45	241.36	218.28	23.08	10.458	
4,800.00	4,799.69	4,776.98	4,765.09	16.89	16.92	107.63	-41.23	-247.83	257.16	233.60	23.56	10.917	
4,899.98	4,899.25	4,875.30	4,862.45	17.22	17.30	108.92	-44.28	-261.17	273.88	249.85	24.03	11.396	
5,000.00	4,998.72	4,973.49	4,959.69	17.55	17.68	110.53	-47.33	-274.50	291.23	266.72	24.51	11.881	

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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 - Santa Fe Fed Com 603H - 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	5,098.17	5,071.66	5,056.91	17.88	18.06	111.95	-50.37	-287.82	308.77	283.78	24.99	12.354		
5,200.00	5,197.63	5,169.84	5,154.12	18.21	18.44	113.22	-53.42	-301.14	326.48	301.00	25.48	12.815		
5,300.00	5,297.08	5,268.01	5,251.34	18.55	18.82	114.36	-56.46	-314.46	344.33	318.37	25.96	13.262		
5,400.00	5,396.53	5,366.19	5,348.56	18.89	19.20	115.38	-59.51	-327.78	362.30	335.85	26.45	13.696		
5,500.00	5,495.98	5,464.36	5,445.78	19.23	19.59	116.31	-62.55	-341.10	380.37	353.43	26.94	14.118		
5,600.00	5,595.44	5,562.54	5,543.00	19.58	19.98	117.16	-65.60	-354.42	398.53	371.09	27.44	14.526		
5,700.00	5,694.89	5,660.71	5,640.22	19.92	20.36	117.93	-68.64	-367.75	416.77	388.84	27.93	14.922		
5,800.00	5,794.34	5,758.88	5,737.44	20.27	20.75	118.64	-71.69	-381.07	435.07	406.64	28.43	15.305		
5,900.00	5,893.79	5,857.06	5,834.65	20.62	21.14	119.29	-74.73	-394.39	453.43	424.51	28.92	15.677		
6,000.00	5,993.24	5,955.23	5,931.87	20.97	21.53	119.89	-77.78	-407.71	471.85	442.43	29.42	16.037		
6,100.00	6,092.70	6,053.41	6,029.09	21.32	21.93	120.45	-80.82	-421.03	490.31	460.39	29.92	16.386		
6,200.00	6,192.15	6,151.58	6,126.31	21.68	22.32	120.96	-83.86	-434.35	508.81	478.39	30.42	16.724		
6,300.00	6,291.60	6,249.76	6,223.53	22.03	22.71	121.44	-86.91	-447.67	527.35	496.42	30.93	17.052		
6,400.00	6,391.05	6,347.93	6,320.75	22.39	23.11	121.88	-89.95	-460.99	545.92	514.49	31.43	17.369		
6,500.00	6,490.51	6,446.10	6,417.97	22.75	23.50	122.30	-93.00	-474.32	564.53	532.59	31.94	17.677		
6,600.00	6,589.96	6,544.28	6,515.18	23.11	23.90	122.69	-96.04	-487.64	583.16	550.71	32.44	17.975		
6,613.87	6,603.75	6,557.89	6,528.66	23.16	23.95	122.74	-96.47	-489.48	585.74	553.23	32.51	18.016		
6,700.00	6,689.50	6,642.57	6,612.52	23.47	24.29	123.18	-99.09	-500.97	601.29	568.34	32.95	18.249		
6,800.00	6,789.26	6,741.16	6,710.15	23.82	24.69	123.46	-102.15	-514.35	618.03	584.58	33.45	18.475		
6,900.00	6,889.17	6,839.96	6,807.99	24.17	25.09	123.51	-105.22	-527.76	633.35	599.40	33.95	18.654		
7,000.00	6,989.15	6,938.92	6,905.99	24.52	25.49	123.36	-108.28	-541.19	647.26	612.80	34.45	18.788		
7,013.85	7,003.00	6,952.64	6,919.57	24.57	25.55	-81.84	-108.71	-543.05	649.07	614.55	34.52	18.803		
7,100.00	7,089.15	7,037.95	7,004.05	24.87	25.90	-82.22	-111.36	-554.62	660.29	625.34	34.95	18.891		
7,200.00	7,189.15	7,136.98	7,102.11	25.22	26.30	-82.64	-114.43	-568.06	673.35	637.89	35.45	18.992		
7,300.00	7,289.15	7,236.00	7,200.18	25.57	26.70	-83.04	-117.50	-581.50	686.44	650.48	35.96	19.091		
7,400.00	7,389.15	7,335.03	7,298.24	25.92	27.11	-83.42	-120.57	-594.93	699.56	663.10	36.46	19.187		
7,500.00	7,489.15	7,434.06	7,396.30	26.27	27.51	-83.80	-123.64	-608.37	712.72	675.75	36.96	19.282		
7,600.00	7,589.15	7,533.08	7,494.36	26.62	27.91	-84.15	-126.71	-621.81	725.90	688.43	37.47	19.375		
7,700.00	7,689.15	7,632.11	7,592.43	26.97	28.32	-84.50	-129.78	-635.24	739.11	701.14	37.97	19.466		
7,800.00	7,789.15	7,731.14	7,690.49	27.32	28.72	-84.83	-132.85	-648.68	752.34	713.87	38.47	19.555		
7,900.00	7,889.15	7,830.16	7,788.55	27.67	29.13	-85.16	-135.93	-662.12	765.60	726.62	38.98	19.643		
8,000.00	7,989.15	7,929.19	7,886.61	28.03	29.54	-85.47	-139.00	-675.56	778.88	739.40	39.48	19.728		
8,100.00	8,089.15	8,028.22	7,984.68	28.38	29.94	-85.77	-142.07	-688.99	792.19	752.20	39.98	19.812		
8,200.00	8,189.15	8,127.24	8,082.74	28.73	30.35	-86.06	-145.14	-702.43	805.51	765.02	40.49	19.895		
8,300.00	8,289.15	8,226.27	8,180.80	29.08	30.76	-86.34	-148.21	-715.87	818.85	777.86	40.99	19.975		
8,400.00	8,389.15	8,325.29	8,278.86	29.43	31.17	-86.61	-151.28	-729.30	832.22	790.72	41.50	20.054		
8,500.00	8,489.15	8,424.32	8,376.93	29.79	31.57	-86.88	-154.35	-742.74	845.60	803.60	42.00	20.132		
8,600.00	8,589.15	8,523.35	8,474.99	30.14	31.98	-87.13	-157.43	-756.18	859.00	816.49	42.51	20.208		
8,700.00	8,689.15	8,622.37	8,573.05	30.49	32.39	-87.38	-160.50	-769.61	872.41	829.40	43.01	20.282		
8,800.00	8,789.15	8,721.40	8,671.11	30.85	32.80	-87.62	-163.57	-783.05	885.84	842.32	43.52	20.355		
8,900.00	8,889.15	8,820.43	8,769.18	31.20	33.21	-87.85	-166.64	-796.49	899.29	855.26	44.02	20.427		
9,000.00	8,989.15	8,919.45	8,867.24	31.55	33.62	-88.08	-169.71	-809.93	912.75	868.22	44.53	20.497		
9,100.00	9,089.15	9,018.48	8,965.30	31.91	34.03	-88.30	-172.78	-823.36	926.22	881.18	45.04	20.566		
9,200.00	9,189.15	9,117.51	9,063.37	32.26	34.44	-88.51	-175.85	-836.80	939.70	894.16	45.54	20.634		
9,300.00	9,289.15	9,216.53	9,161.43	32.61	34.85	-88.72	-178.92	-850.24	953.20	907.15	46.05	20.700		
9,400.00	9,389.15	9,315.56	9,259.49	32.97	35.26	-88.92	-182.00	-863.67	966.71	920.16	46.56	20.765		
9,500.00	9,489.15	9,414.59	9,357.55	33.32	35.67	-89.12	-185.07	-877.11	980.23	933.17	47.06	20.829		
9,600.00	9,589.15	9,513.61	9,455.62	33.67	36.08	-89.31	-188.14	-890.55	993.77	946.20	47.57	20.891		
9,700.00	9,689.15	9,612.64	9,553.68	34.03	36.49	-89.50	-191.21	-903.98	1,007.31	959.24	48.08	20.953		
9,800.00	9,789.15	9,734.19	9,674.17	34.38	36.99	-89.70	-194.76	-919.53	1,020.16	971.45	48.71	20.943		
9,900.00	9,889.15	9,868.93	9,808.24	34.74	37.51	-89.87	-197.74	-932.56	1,029.82	980.44	49.38	20.855		
10,000.00	9,989.15	10,004.45	9,943.48	35.09	38.01	-89.98	-199.67	-941.00	1,036.05	986.05	50.00	20.720		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	10,089.15	10,140.41	10,079.38	35.44	38.48	-90.03	-200.53	-944.77	1,038.83	988.25	50.58	20.539		
10,200.00	10,189.15	10,251.19	10,190.15	35.80	38.84	-90.03	-200.58	-944.98	1,038.98	987.90	51.08	20.338		
10,300.00	10,289.15	10,351.19	10,290.15	36.15	39.16	-90.03	-200.58	-944.98	1,038.98	987.41	51.58	20.145		
10,400.00	10,389.15	10,451.19	10,390.15	36.51	39.49	-90.03	-200.58	-944.98	1,038.98	986.91	52.07	19.955		
10,500.00	10,489.15	10,551.19	10,490.15	36.86	39.81	-90.03	-200.58	-944.98	1,038.98	986.42	52.56	19.769		
10,600.00	10,589.15	10,651.19	10,590.15	37.22	40.14	-90.03	-200.58	-944.98	1,038.98	985.93	53.05	19.585		
10,700.00	10,689.15	10,751.19	10,690.15	37.57	40.46	-90.03	-200.58	-944.98	1,038.98	985.44	53.54	19.405		
10,800.00	10,789.15	10,851.19	10,790.15	37.93	40.79	-90.03	-200.58	-944.98	1,038.98	984.95	54.03	19.229		
10,900.00	10,889.15	10,951.19	10,890.15	38.28	41.12	-90.03	-200.58	-944.98	1,038.98	984.46	54.53	19.055		
11,000.00	10,989.15	11,051.19	10,990.15	38.64	41.44	-90.03	-200.58	-944.98	1,038.98	983.96	55.02	18.884		
11,108.85	11,098.00	11,160.03	11,099.00	39.02	41.80	-90.03	-200.58	-944.98	1,038.98	983.43	55.55	18.702		
11,150.00	11,139.12	11,200.93	11,139.89	39.17	41.93	-89.58	-200.33	-944.98	1,038.97	983.22	55.75	18.635		
11,200.00	11,188.77	11,250.32	11,189.14	39.34	42.09	-89.70	-196.75	-945.01	1,038.96	982.97	55.99	18.556		
11,250.00	11,237.73	11,300.00	11,238.18	39.50	42.24	-89.82	-188.88	-945.09	1,038.95	982.73	56.22	18.481		
11,300.00	11,285.62	11,349.65	11,286.32	39.66	42.39	-89.94	-176.81	-945.20	1,038.94	982.51	56.43	18.410		
11,325.49	11,309.52	11,375.10	11,310.54	39.73	42.46	-90.00	-169.02	-945.27	1,038.94	982.40	56.54	18.376		
11,350.00	11,332.09	11,399.61	11,333.52	39.81	42.52	-90.06	-160.50	-945.34	1,038.94	982.30	56.64	18.343		
11,400.00	11,376.78	11,449.76	11,379.30	39.95	42.65	-90.19	-140.06	-945.53	1,038.95	982.11	56.84	18.279		
11,450.00	11,419.35	11,500.11	11,423.28	40.08	42.76	-90.31	-115.59	-945.75	1,038.96	981.93	57.03	18.219		
11,500.00	11,459.47	11,550.65	11,465.10	40.20	42.86	-90.43	-87.24	-946.01	1,038.97	981.76	57.21	18.161		
11,550.00	11,496.84	11,601.38	11,504.41	40.32	42.95	-90.54	-55.19	-946.30	1,038.99	981.60	57.38	18.106		
11,600.00	11,531.17	11,652.31	11,540.86	40.44	43.03	-90.66	-19.64	-946.62	1,039.01	981.45	57.55	18.053		
11,650.00	11,562.21	11,703.42	11,574.12	40.55	43.09	-90.76	19.14	-946.97	1,039.03	981.31	57.72	18.000		
11,700.00	11,589.71	11,754.71	11,603.89	40.67	43.15	-90.87	60.88	-947.35	1,039.06	981.17	57.89	17.949		
11,750.00	11,613.47	11,806.17	11,629.89	40.79	43.19	-90.96	105.27	-947.75	1,039.09	981.03	58.06	17.898		
11,800.00	11,633.31	11,857.79	11,651.87	40.91	43.23	-91.05	151.95	-948.18	1,039.11	980.89	58.22	17.847		
11,850.00	11,649.08	11,909.55	11,669.60	41.04	43.27	-91.13	200.57	-948.62	1,039.14	980.74	58.40	17.795		
11,900.00	11,660.65	11,961.45	11,682.89	41.16	43.32	-91.20	250.71	-949.07	1,039.17	980.60	58.57	17.742		
11,950.00	11,667.94	12,013.46	11,691.62	41.29	43.37	-91.26	301.96	-949.54	1,039.19	980.44	58.75	17.689		
12,000.00	11,670.89	12,065.58	11,695.66	41.42	43.44	-91.31	353.90	-950.01	1,039.21	980.28	58.93	17.635		
12,018.82	11,670.87	12,085.22	11,695.96	41.47	43.48	-91.33	373.54	-950.19	1,039.22	980.22	59.00	17.614		
12,100.00	11,669.46	12,166.77	11,694.60	41.72	43.64	-91.33	455.07	-950.92	1,039.22	979.88	59.34	17.513		
12,200.00	11,667.72	12,266.77	11,692.85	42.08	43.91	-91.33	555.05	-951.83	1,039.22	979.38	59.84	17.367		
12,300.00	11,665.98	12,366.77	11,691.10	42.50	44.27	-91.33	655.03	-952.74	1,039.22	978.80	60.42	17.200		
12,400.00	11,664.24	12,466.77	11,689.35	42.98	44.70	-91.33	755.01	-953.64	1,039.21	978.13	61.09	17.012		
12,500.00	11,662.50	12,566.77	11,687.60	43.51	45.19	-91.33	854.99	-954.55	1,039.21	977.38	61.83	16.806		
12,600.00	11,660.76	12,666.77	11,685.85	44.11	45.75	-91.33	954.97	-955.46	1,039.21	976.55	62.66	16.585		
12,700.00	11,659.01	12,766.77	11,684.11	44.75	46.37	-91.33	1,054.96	-956.36	1,039.21	975.65	63.56	16.350		
12,800.00	11,657.27	12,866.77	11,682.36	45.45	47.04	-91.33	1,154.94	-957.27	1,039.21	974.68	64.53	16.104		
12,900.00	11,655.53	12,966.77	11,680.61	46.19	47.75	-91.33	1,254.92	-958.18	1,039.21	973.64	65.57	15.848		
13,000.00	11,653.79	13,066.77	11,678.86	46.98	48.52	-91.33	1,354.90	-959.08	1,039.21	972.53	66.68	15.585		
13,100.00	11,652.05	13,166.77	11,677.11	47.82	49.33	-91.33	1,454.88	-959.99	1,039.21	971.36	67.85	15.316		
13,200.00	11,650.31	13,266.77	11,675.36	48.70	50.17	-91.33	1,554.86	-960.90	1,039.21	970.13	69.08	15.044		
13,300.00	11,648.57	13,366.77	11,673.61	49.61	51.06	-91.33	1,654.84	-961.80	1,039.20	968.84	70.36	14.769		
13,400.00	11,646.83	13,466.77	11,671.86	50.57	51.99	-91.33	1,754.82	-962.71	1,039.20	967.50	71.70	14.494		
13,500.00	11,645.09	13,566.77	11,670.11	51.55	52.95	-91.32	1,854.80	-963.61	1,039.20	966.12	73.09	14.219		
13,600.00	11,643.35	13,666.77	11,668.37	52.58	53.95	-91.32	1,954.78	-964.52	1,039.20	964.68	74.52	13.945		
13,700.00	11,641.61	13,766.77	11,666.62	53.63	54.97	-91.32	2,054.76	-965.43	1,039.20	963.20	76.00	13.673		
13,800.00	11,639.87	13,866.77	11,664.87	54.71	56.03	-91.32	2,154.74	-966.33	1,039.20	961.68	77.52	13.405		
13,900.00	11,638.13	13,966.77	11,663.12	55.82	57.11	-91.32	2,254.72	-967.24	1,039.20	960.11	79.08	13.140		
14,000.00	11,636.39	14,066.77	11,661.37	56.96	58.22	-91.32	2,354.70	-968.15	1,039.20	958.51	80.68	12.880		
14,100.00	11,634.65	14,166.77	11,659.62	58.12	59.36	-91.32	2,454.68	-969.05	1,039.20	956.88	82.32	12.624		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,632.91	14,266.77	11,657.87	59.31	60.52	-91.32	2,554.66	-969.96	1,039.20	955.21	83.99	12.374		
14,300.00	11,631.17	14,366.77	11,656.12	60.52	61.70	-91.32	2,654.64	-970.87	1,039.19	953.51	85.68	12.128		
14,400.00	11,629.42	14,466.77	11,654.37	61.74	62.90	-91.32	2,754.63	-971.77	1,039.19	951.78	87.41	11.889		
14,500.00	11,627.68	14,566.77	11,652.63	62.99	64.12	-91.32	2,854.61	-972.68	1,039.19	950.03	89.17	11.655		
14,600.00	11,625.94	14,666.77	11,650.88	64.26	65.36	-91.32	2,954.59	-973.59	1,039.19	948.24	90.95	11.426		
14,700.00	11,624.20	14,766.77	11,649.13	65.54	66.62	-91.32	3,054.57	-974.49	1,039.19	946.44	92.75	11.204		
14,800.00	11,622.46	14,866.77	11,647.38	66.84	67.90	-91.32	3,154.55	-975.40	1,039.19	944.61	94.58	10.987		
14,900.00	11,620.72	14,966.77	11,645.63	68.15	69.19	-91.32	3,254.53	-976.30	1,039.19	942.75	96.43	10.776		
15,000.00	11,618.98	15,066.77	11,643.88	69.48	70.50	-91.32	3,354.51	-977.21	1,039.19	940.88	98.31	10.571		
15,100.00	11,617.24	15,166.77	11,642.13	70.82	71.82	-91.32	3,454.49	-978.12	1,039.19	938.99	100.20	10.371		
15,200.00	11,615.50	15,266.77	11,640.38	72.18	73.15	-91.32	3,554.47	-979.02	1,039.18	937.08	102.11	10.177		
15,300.00	11,613.76	15,366.77	11,638.63	73.54	74.50	-91.32	3,654.45	-979.93	1,039.18	935.15	104.03	9.989		
15,400.00	11,612.02	15,466.77	11,636.89	74.92	75.86	-91.32	3,754.43	-980.84	1,039.18	933.21	105.98	9.806		
15,500.00	11,610.28	15,566.77	11,635.14	76.31	77.23	-91.32	3,854.41	-981.74	1,039.18	931.25	107.94	9.628		
15,600.00	11,608.54	15,666.77	11,633.39	77.71	78.61	-91.32	3,954.39	-982.65	1,039.18	929.27	109.91	9.455		
15,700.00	11,606.80	15,766.77	11,631.64	79.12	80.00	-91.31	4,054.37	-983.56	1,039.18	927.28	111.90	9.287		
15,800.00	11,605.06	15,866.77	11,629.89	80.54	81.40	-91.31	4,154.35	-984.46	1,039.18	925.28	113.90	9.124		
15,900.00	11,603.32	15,966.77	11,628.14	81.97	82.81	-91.31	4,254.33	-985.37	1,039.18	923.27	115.91	8.965		
16,000.00	11,601.57	16,066.77	11,626.39	83.40	84.23	-91.31	4,354.32	-986.28	1,039.18	921.24	117.94	8.811		
16,100.00	11,599.83	16,166.77	11,624.64	84.84	85.66	-91.31	4,454.30	-987.18	1,039.18	919.20	119.97	8.662		
16,200.00	11,598.09	16,266.77	11,622.89	86.30	87.09	-91.31	4,554.28	-988.09	1,039.17	917.15	122.02	8.516		
16,300.00	11,596.35	16,366.77	11,621.15	87.75	88.53	-91.31	4,654.26	-989.00	1,039.17	915.10	124.08	8.375		
16,400.00	11,594.61	16,466.77	11,619.40	89.22	89.98	-91.31	4,754.24	-989.90	1,039.17	913.03	126.14	8.238		
16,500.00	11,592.87	16,566.77	11,617.65	90.69	91.44	-91.31	4,854.22	-990.81	1,039.17	910.95	128.22	8.105		
16,600.00	11,591.13	16,666.77	11,615.90	92.17	92.90	-91.31	4,954.20	-991.71	1,039.17	908.86	130.31	7.975		
16,700.00	11,589.39	16,766.77	11,614.15	93.65	94.37	-91.31	5,054.18	-992.62	1,039.17	906.77	132.40	7.849		
16,800.00	11,587.65	16,866.77	11,612.40	95.14	95.85	-91.31	5,154.16	-993.53	1,039.17	904.67	134.50	7.726		
16,900.00	11,585.91	16,966.77	11,610.65	96.63	97.33	-91.31	5,254.14	-994.43	1,039.17	902.56	136.61	7.607		
17,000.00	11,584.17	17,066.77	11,608.90	98.13	98.81	-91.31	5,354.12	-995.34	1,039.17	900.44	138.73	7.491		
17,100.00	11,582.43	17,166.77	11,607.15	99.64	100.31	-91.31	5,454.10	-996.25	1,039.16	898.32	140.85	7.378		
17,200.00	11,580.69	17,266.77	11,605.41	101.14	101.80	-91.31	5,554.08	-997.15	1,039.16	896.18	142.98	7.268		
17,300.00	11,578.95	17,366.77	11,603.66	102.66	103.30	-91.31	5,654.06	-998.06	1,039.16	894.05	145.11	7.161		
17,400.00	11,577.21	17,466.77	11,601.91	104.17	104.81	-91.31	5,754.04	-998.97	1,039.16	891.90	147.26	7.057		
17,500.00	11,575.47	17,566.77	11,600.16	105.70	106.32	-91.31	5,854.02	-999.87	1,039.16	889.76	149.40	6.955		
17,600.00	11,573.73	17,666.77	11,598.41	107.22	107.83	-91.31	5,954.00	-1,000.78	1,039.16	887.60	151.56	6.857		
17,700.00	11,571.98	17,766.77	11,596.66	108.75	109.35	-91.31	6,053.99	-1,001.69	1,039.16	885.44	153.72	6.760		
17,800.00	11,570.24	17,866.77	11,594.91	110.28	110.87	-91.31	6,153.97	-1,002.59	1,039.16	883.28	155.88	6.666		
17,900.00	11,568.50	17,966.77	11,593.16	111.82	112.40	-91.30	6,253.95	-1,003.50	1,039.16	881.11	158.05	6.575		
18,000.00	11,566.76	18,066.77	11,591.41	113.36	113.93	-91.30	6,353.93	-1,004.40	1,039.16	878.93	160.22	6.486		
18,100.00	11,565.02	18,166.77	11,589.67	114.90	115.46	-91.30	6,453.91	-1,005.31	1,039.15	876.75	162.40	6.399		
18,200.00	11,563.28	18,266.77	11,587.92	116.44	116.99	-91.30	6,553.89	-1,006.22	1,039.15	874.57	164.58	6.314		
18,300.00	11,561.54	18,366.77	11,586.17	117.99	118.53	-91.30	6,653.87	-1,007.12	1,039.15	872.38	166.77	6.231		
18,400.00	11,559.80	18,466.77	11,584.42	119.54	120.07	-91.30	6,753.85	-1,008.03	1,039.15	870.19	168.96	6.150		
18,500.00	11,558.06	18,566.77	11,582.67	121.10	121.62	-91.30	6,853.83	-1,008.94	1,039.15	868.00	171.15	6.071		
18,600.00	11,556.32	18,666.77	11,580.92	122.65	123.17	-91.30	6,953.81	-1,009.84	1,039.15	865.80	173.35	5.994		
18,700.00	11,554.58	18,766.77	11,579.17	124.21	124.72	-91.30	7,053.79	-1,010.75	1,039.15	863.60	175.55	5.919		
18,800.00	11,552.84	18,866.77	11,577.42	125.77	126.27	-91.30	7,153.77	-1,011.66	1,039.15	861.39	177.76	5.846		
18,900.00	11,551.10	18,966.77	11,575.67	127.33	127.82	-91.30	7,253.75	-1,012.56	1,039.15	859.18	179.97	5.774		
19,000.00	11,549.36	19,066.77	11,573.93	128.90	129.38	-91.30	7,353.73	-1,013.47	1,039.14	856.97	182.18	5.704		
19,100.00	11,547.62	19,166.77	11,572.18	130.47	130.94	-91.30	7,453.71	-1,014.38	1,039.14	854.75	184.39	5.636		
19,200.00	11,545.88	19,266.77	11,570.43	132.04	132.50	-91.30	7,553.69	-1,015.28	1,039.14	852.53	186.61	5.569		
19,300.00	11,544.14	19,366.77	11,568.68	133.61	134.07	-91.30	7,653.67	-1,016.19	1,039.14	850.31	188.83	5.503		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,542.39	19,466.77	11,566.93	135.18	135.63	-91.30	7,753.66	-1,017.09	1,039.14	848.09	191.05	5.439			
19,500.00	11,540.65	19,566.77	11,565.18	136.76	137.20	-91.30	7,853.64	-1,018.00	1,039.14	845.86	193.28	5.376			
19,600.00	11,538.91	19,666.77	11,563.43	138.33	138.77	-91.30	7,953.62	-1,018.91	1,039.14	843.63	195.51	5.315			
19,700.00	11,537.17	19,766.77	11,561.68	139.91	140.34	-91.30	8,053.60	-1,019.81	1,039.14	841.40	197.74	5.255			
19,800.00	11,535.43	19,866.77	11,559.93	141.49	141.92	-91.30	8,153.58	-1,020.72	1,039.14	839.17	199.97	5.196			
19,900.00	11,533.69	19,966.77	11,558.19	143.08	143.49	-91.30	8,253.56	-1,021.63	1,039.14	836.93	202.20	5.139			
20,000.00	11,531.95	20,066.77	11,556.44	144.66	145.07	-91.30	8,353.54	-1,022.53	1,039.13	834.69	204.44	5.083			
20,100.00	11,530.21	20,166.77	11,554.69	146.24	146.65	-91.29	8,453.52	-1,023.44	1,039.13	832.45	206.68	5.028			
20,200.00	11,528.47	20,266.77	11,552.94	147.83	148.23	-91.29	8,553.50	-1,024.35	1,039.13	830.21	208.92	4.974			
20,300.00	11,526.73	20,366.77	11,551.19	149.42	149.81	-91.29	8,653.48	-1,025.25	1,039.13	827.96	211.17	4.921			
20,400.00	11,524.99	20,466.77	11,549.44	151.01	151.40	-91.29	8,753.46	-1,026.16	1,039.13	825.72	213.41	4.869			
20,500.00	11,523.25	20,566.77	11,547.69	152.60	152.98	-91.29	8,853.44	-1,027.07	1,039.13	823.47	215.66	4.818			
20,600.00	11,521.51	20,666.77	11,545.94	154.19	154.57	-91.29	8,953.42	-1,027.97	1,039.13	821.22	217.91	4.769			
20,700.00	11,519.77	20,766.77	11,544.19	155.78	156.15	-91.29	9,053.40	-1,028.88	1,039.13	818.97	220.16	4.720			
20,800.00	11,518.03	20,866.77	11,542.45	157.38	157.74	-91.29	9,153.38	-1,029.79	1,039.13	816.71	222.41	4.672			
20,900.00	11,516.29	20,966.77	11,540.70	158.97	159.33	-91.29	9,253.36	-1,030.69	1,039.12	814.46	224.67	4.625			
21,000.00	11,514.54	21,066.77	11,538.95	160.57	160.93	-91.29	9,353.34	-1,031.60	1,039.12	812.20	226.92	4.579			
21,100.00	11,512.80	21,166.77	11,537.20	162.17	162.52	-91.29	9,453.33	-1,032.50	1,039.12	809.94	229.18	4.534			
21,200.00	11,511.06	21,266.77	11,535.45	163.77	164.11	-91.29	9,553.31	-1,033.41	1,039.12	807.68	231.44	4.490			
21,300.00	11,509.32	21,366.77	11,533.70	165.37	165.71	-91.29	9,653.29	-1,034.32	1,039.12	805.42	233.70	4.446			
21,400.00	11,507.58	21,466.77	11,531.95	166.97	167.30	-91.29	9,753.27	-1,035.22	1,039.12	803.16	235.96	4.404			
21,500.00	11,505.84	21,566.77	11,530.20	168.57	168.90	-91.29	9,853.25	-1,036.13	1,039.12	800.89	238.23	4.362			
21,600.00	11,504.10	21,666.77	11,528.45	170.17	170.50	-91.29	9,953.23	-1,037.04	1,039.12	798.62	240.49	4.321			
21,700.00	11,502.36	21,766.77	11,526.71	171.78	172.10	-91.29	10,053.21	-1,037.94	1,039.12	796.36	242.76	4.280			
21,800.00	11,500.62	21,866.77	11,524.96	173.38	173.70	-91.29	10,153.19	-1,038.85	1,039.12	794.09	245.03	4.241			
21,807.59	11,500.49	21,874.36	11,524.82	173.50	173.82	-91.29	10,160.78	-1,038.92	1,039.12	793.92	245.20	4.238			
21,812.62	11,500.40	21,874.54	11,524.82	173.58	173.82	-91.29	10,160.96	-1,038.92	1,039.13	793.83	245.29	4.236 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	0.70	0.70	0.00	0.00	-90.47	-0.29	-34.99	34.99					
100.00	100.00	100.70	100.70	0.13	0.13	-90.47	-0.29	-34.99	34.99	34.81	0.18	195.244		
200.00	200.00	200.70	200.70	0.48	0.49	-90.47	-0.29	-34.99	34.99	34.31	0.69	50.995		
300.00	300.00	300.70	300.70	0.84	0.84	-90.47	-0.29	-34.99	34.99	33.80	1.19	29.327		
400.00	400.00	400.70	400.70	1.20	1.20	-90.47	-0.29	-34.99	34.99	33.29	1.70	20.582		
500.00	500.00	500.70	500.70	1.56	1.56	-90.47	-0.29	-34.99	34.99	32.78	2.21	15.854		
600.00	600.00	600.70	600.70	1.92	1.92	-90.47	-0.29	-34.99	34.99	32.28	2.71	12.893		
700.00	700.00	700.70	700.70	2.28	2.28	-90.47	-0.29	-34.99	34.99	31.77	3.22	10.864		
800.00	800.00	800.70	800.70	2.63	2.64	-90.47	-0.29	-34.99	34.99	31.26	3.73	9.386		
900.00	900.00	900.70	900.70	2.99	3.00	-90.47	-0.29	-34.99	34.99	30.76	4.23	8.263		
1,000.00	1,000.00	1,000.70	1,000.70	3.35	3.35	-90.47	-0.29	-34.99	34.99	30.25	4.74	7.379		
1,100.00	1,100.00	1,100.70	1,100.70	3.71	3.71	-90.47	-0.29	-34.99	34.99	29.74	5.25	6.667		
1,200.00	1,200.00	1,200.70	1,200.70	4.07	4.07	-90.47	-0.29	-34.99	34.99	29.24	5.76	6.079		
1,300.00	1,300.00	1,300.70	1,300.70	4.43	4.43	-90.47	-0.29	-34.99	34.99	28.73	6.26	5.587		
1,400.00	1,400.00	1,400.70	1,400.70	4.79	4.79	-90.47	-0.29	-34.99	34.99	28.22	6.77	5.169		
1,500.00	1,500.00	1,500.70	1,500.70	5.14	5.15	-90.47	-0.29	-34.99	34.99	27.71	7.28	4.809		
1,600.00	1,600.00	1,600.70	1,600.70	5.50	5.51	-90.47	-0.29	-34.99	34.99	27.21	7.78	4.496		
1,700.00	1,700.00	1,700.70	1,700.70	5.86	5.86	-90.47	-0.29	-34.99	34.99	26.70	8.29	4.221		
1,800.00	1,800.00	1,800.70	1,800.70	6.22	6.22	-90.47	-0.29	-34.99	34.99	26.19	8.80	3.977		
1,900.00	1,900.00	1,900.70	1,900.70	6.58	6.58	-90.47	-0.29	-34.99	34.99	25.69	9.30	3.761		
2,000.00	2,000.00	2,000.70	2,000.70	6.94	6.94	-90.47	-0.29	-34.99	34.99	25.18	9.81	3.566		
2,100.00	2,100.00	2,100.70	2,100.70	7.29	7.30	-90.47	-0.29	-34.99	34.99	24.67	10.32	3.391		
2,200.00	2,200.00	2,200.70	2,200.70	7.65	7.66	-90.47	-0.29	-34.99	34.99	24.17	10.83	3.232		
2,300.00	2,300.00	2,300.70	2,300.70	8.01	8.01	-90.47	-0.29	-34.99	34.99	23.66	11.33	3.088		
2,400.00	2,400.00	2,400.70	2,400.70	8.37	8.37	-90.47	-0.29	-34.99	34.99	23.15	11.84	2.956		
2,500.00	2,500.00	2,500.70	2,500.70	8.73	8.73	-90.47	-0.29	-34.99	34.99	22.65	12.35	2.834		
2,600.00	2,600.00	2,600.70	2,600.70	9.09	9.09	-90.47	-0.29	-34.99	34.99	22.14	12.85	2.722		
2,700.00	2,700.00	2,700.70	2,700.70	9.45	9.45	-90.47	-0.29	-34.99	34.99	21.63	13.36	2.619		
2,800.00	2,800.00	2,800.70	2,800.70	9.80	9.81	-90.47	-0.29	-34.99	34.99	21.12	13.87	2.523		
2,900.00	2,900.00	2,900.70	2,900.70	10.16	10.17	-90.47	-0.29	-34.99	34.99	20.62	14.37	2.434		
3,000.00	3,000.00	3,000.70	3,000.70	10.52	10.52	-90.47	-0.29	-34.99	34.99	20.11	14.88	2.351		
3,100.00	3,100.00	3,100.70	3,100.70	10.88	10.88	-90.47	-0.29	-34.99	34.99	19.60	15.39	2.274		
3,200.00	3,200.00	3,200.70	3,200.70	11.24	11.24	-90.47	-0.29	-34.99	34.99	19.10	15.89	2.201		
3,300.00	3,300.00	3,300.70	3,300.70	11.60	11.60	-90.47	-0.29	-34.99	34.99	18.59	16.40	2.133		
3,400.00	3,400.00	3,400.70	3,400.70	11.96	11.96	-90.47	-0.29	-34.99	34.99	18.08	16.91	2.069		
3,416.43	3,416.43	3,417.13	3,417.13	12.01	12.02	-90.47	-0.29	-34.99	34.99	18.00	16.99	2.059 CC		
3,500.00	3,500.00	3,500.69	3,500.69	12.31	12.32	-90.47	-0.29	-34.99	34.99	17.58	17.42	2.009 ES, SF		
3,600.00	3,600.00	3,600.00	3,599.99	12.67	12.66	-91.17	-0.74	-36.22	36.23	18.33	17.91	2.023		
3,700.00	3,700.00	3,698.80	3,698.71	13.03	12.99	-92.97	-2.07	-39.85	39.95	21.58	18.37	2.175		
3,800.00	3,800.00	3,797.52	3,797.22	13.39	13.33	-95.32	-4.27	-45.86	46.19	27.38	18.82	2.455		
3,900.00	3,900.00	3,895.85	3,895.14	13.75	13.66	-97.71	-7.34	-54.23	55.01	35.75	19.26	2.856		
4,000.00	4,000.00	3,994.11	3,992.74	14.11	14.00	-99.83	-11.23	-64.87	66.31	46.61	19.71	3.365		
4,100.00	4,100.00	4,093.36	4,091.25	14.46	14.34	-101.42	-15.40	-76.23	78.34	58.14	20.20	3.878		
4,200.00	4,200.00	4,192.61	4,189.77	14.82	14.69	-102.59	-19.56	-87.60	90.42	69.72	20.69	4.369		
4,300.00	4,300.00	4,291.87	4,288.28	15.18	15.04	-103.48	-23.72	-98.96	102.52	81.33	21.19	4.839		
4,400.00	4,400.00	4,391.12	4,386.79	15.54	15.40	-104.19	-27.89	-110.33	114.65	92.96	21.68	5.287		
4,500.00	4,500.00	4,490.37	4,485.31	15.90	15.75	-104.75	-32.05	-121.70	126.78	104.61	22.18	5.717		
4,600.00	4,599.99	4,489.60	4,483.79	16.24	16.11	-105.30	-36.21	-133.06	139.16	116.50	22.66	6.141		
4,700.00	4,699.91	4,488.73	4,482.18	16.56	16.47	-105.84	-40.37	-144.41	152.03	128.89	23.13	6.572		
4,800.00	4,799.69	4,487.70	4,480.41	16.89	16.83	-106.30	-44.52	-155.74	165.49	141.88	23.61	7.010		
4,899.98	4,899.25	4,486.42	4,478.40	17.22	17.20	-106.80	-48.66	-167.05	179.74	155.66	24.08	7.463		
5,000.00	4,998.72	4,985.04	4,976.27	17.55	17.56	-107.14	-52.80	-178.34	194.62	170.05	24.56	7.924		

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Total Directional Services

Anticollision Report



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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	5,098.17	5,083.63	5,074.14	17.88	17.93	109.15	-56.94	-189.63	209.76	184.72	25.04	8.376		
5,200.00	5,197.63	5,182.23	5,172.00	18.21	18.30	110.88	-61.07	-200.92	225.13	199.60	25.53	8.819		
5,300.00	5,297.08	5,280.83	5,269.86	18.55	18.66	112.39	-65.21	-212.21	240.67	214.66	26.01	9.252		
5,400.00	5,396.53	5,379.43	5,367.72	18.89	19.03	113.72	-69.34	-223.50	256.36	229.86	26.50	9.674		
5,500.00	5,495.98	5,478.02	5,465.58	19.23	19.41	114.90	-73.48	-234.79	272.16	245.17	26.99	10.084		
5,600.00	5,595.44	5,576.62	5,563.44	19.58	19.78	115.94	-77.61	-246.09	288.07	260.59	27.48	10.482		
5,700.00	5,694.89	5,675.22	5,661.31	19.92	20.15	116.88	-81.75	-257.38	304.06	276.08	27.98	10.869		
5,800.00	5,794.34	5,773.82	5,759.17	20.27	20.53	117.72	-85.89	-268.67	320.12	291.65	28.47	11.244		
5,900.00	5,893.79	5,872.41	5,857.03	20.62	20.91	118.48	-90.02	-279.96	336.24	307.27	28.97	11.608		
6,000.00	5,993.24	5,971.01	5,954.89	20.97	21.28	119.18	-94.16	-291.25	352.42	322.95	29.47	11.960		
6,100.00	6,092.70	6,069.61	6,052.75	21.32	21.66	119.81	-98.29	-302.54	368.64	338.67	29.96	12.302		
6,200.00	6,192.15	6,168.21	6,150.61	21.68	22.04	120.39	-102.43	-313.83	384.90	354.43	30.47	12.634		
6,300.00	6,291.60	6,266.80	6,248.48	22.03	22.42	120.92	-106.56	-325.12	401.19	370.22	30.97	12.955		
6,400.00	6,391.05	6,365.40	6,346.34	22.39	22.80	121.41	-110.70	-336.41	417.52	386.05	31.47	13.267		
6,500.00	6,490.51	6,464.00	6,444.20	22.75	23.18	121.86	-114.84	-347.70	433.87	401.90	31.98	13.569		
6,600.00	6,589.96	6,562.60	6,542.06	23.11	23.57	122.28	-118.97	-358.99	450.25	417.77	32.48	13.862		
6,613.87	6,603.75	6,576.27	6,555.63	23.16	23.62	122.34	-119.55	-360.56	452.52	419.97	32.55	13.902		
6,700.00	6,689.50	6,661.30	6,640.03	23.47	23.95	122.75	-123.11	-370.29	466.14	433.15	32.99	14.131		
6,800.00	6,789.26	6,760.24	6,738.23	23.82	24.33	122.94	-127.26	-381.62	480.64	447.15	33.49	14.352		
6,900.00	6,889.17	6,859.35	6,836.60	24.17	24.72	122.86	-131.42	-392.97	493.74	459.75	33.99	14.527		
7,000.00	6,989.15	6,958.57	6,935.08	24.52	25.11	122.52	-135.58	-404.34	505.45	470.96	34.48	14.657		
7,013.85	7,003.00	6,972.32	6,948.72	24.57	25.16	-82.72	-136.16	-405.91	506.96	472.41	34.55	14.672		
7,100.00	7,089.15	7,057.82	7,033.59	24.87	25.50	-83.26	-139.75	-415.70	516.33	481.34	34.98	14.759		
7,200.00	7,189.15	7,157.08	7,132.10	25.22	25.89	-83.86	-143.91	-427.07	527.25	491.77	35.48	14.859		
7,300.00	7,289.15	7,256.33	7,230.62	25.57	26.28	-84.43	-148.07	-438.43	538.23	502.24	35.99	14.957		
7,400.00	7,389.15	7,355.58	7,329.13	25.92	26.67	-84.98	-152.23	-449.80	549.26	512.77	36.49	15.054		
7,500.00	7,489.15	7,454.84	7,427.64	26.27	27.06	-85.51	-156.40	-461.17	560.34	523.35	36.99	15.150		
7,600.00	7,589.15	7,554.09	7,526.15	26.62	27.45	-86.02	-160.56	-472.53	571.46	533.98	37.49	15.244		
7,700.00	7,689.15	7,653.35	7,624.67	26.97	27.84	-86.51	-164.72	-483.90	582.63	544.64	37.99	15.337		
7,800.00	7,789.15	7,752.60	7,723.18	27.32	28.23	-86.98	-168.89	-495.26	593.84	555.35	38.49	15.428		
7,900.00	7,889.15	7,851.85	7,821.69	27.67	28.62	-87.43	-173.05	-506.63	605.08	566.09	38.99	15.518		
8,000.00	7,989.15	7,951.11	7,920.21	28.03	29.01	-87.87	-177.21	-517.99	616.37	576.87	39.50	15.606		
8,100.00	8,089.15	8,050.36	8,018.72	28.38	29.41	-88.29	-181.38	-529.36	627.68	587.68	40.00	15.693		
8,200.00	8,189.15	8,149.61	8,117.23	28.73	29.80	-88.70	-185.54	-540.73	639.03	598.53	40.50	15.779		
8,300.00	8,289.15	8,248.87	8,215.74	29.08	30.19	-89.09	-189.70	-552.09	650.41	609.41	41.00	15.863		
8,400.00	8,389.15	8,363.73	8,329.89	29.43	30.64	-89.49	-194.11	-564.11	660.87	619.26	41.61	15.884		
8,500.00	8,489.15	8,482.82	8,448.58	29.79	31.09	-89.78	-197.44	-573.21	668.49	626.28	42.21	15.838		
8,600.00	8,589.15	8,602.41	8,568.01	30.14	31.53	-89.96	-199.51	-578.85	673.20	630.42	42.78	15.737		
8,700.00	8,689.15	8,722.26	8,687.83	30.49	31.94	-90.02	-200.28	-580.97	674.97	631.66	43.32	15.582		
8,800.00	8,789.15	8,824.28	8,789.85	30.85	32.28	-90.02	-200.29	-580.99	674.99	631.18	43.81	15.406		
8,900.00	8,889.15	8,924.28	8,889.85	31.20	32.62	-90.02	-200.29	-580.99	674.99	630.68	44.31	15.235		
9,000.00	8,989.15	9,024.28	8,989.85	31.55	32.95	-90.02	-200.29	-580.99	674.99	630.19	44.80	15.067		
9,100.00	9,089.15	9,124.28	9,089.85	31.91	33.29	-90.02	-200.29	-580.99	674.99	629.70	45.29	14.903		
9,200.00	9,189.15	9,224.28	9,189.85	32.26	33.63	-90.02	-200.29	-580.99	674.99	629.20	45.79	14.742		
9,300.00	9,289.15	9,324.28	9,289.85	32.61	33.96	-90.02	-200.29	-580.99	674.99	628.71	46.28	14.585		
9,400.00	9,389.15	9,424.28	9,389.85	32.97	34.30	-90.02	-200.29	-580.99	674.99	628.22	46.77	14.431		
9,500.00	9,489.15	9,524.28	9,489.85	33.32	34.64	-90.02	-200.29	-580.99	674.99	627.72	47.27	14.280		
9,600.00	9,589.15	9,624.28	9,589.85	33.67	34.97	-90.02	-200.29	-580.99	674.99	627.23	47.76	14.132		
9,700.00	9,689.15	9,724.28	9,689.85	34.03	35.31	-90.02	-200.29	-580.99	674.99	626.73	48.26	13.987		
9,800.00	9,789.15	9,824.28	9,789.85	34.38	35.65	-90.02	-200.29	-580.99	674.99	626.24	48.75	13.845		
9,900.00	9,889.15	9,924.28	9,889.85	34.74	35.99	-90.02	-200.29	-580.99	674.99	625.74	49.25	13.705		
10,000.00	9,989.15	10,024.28	9,989.85	35.09	36.33	-90.02	-200.29	-580.99	674.99	625.24	49.75	13.569		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	10,089.15	10,124.28	10,089.85	35.44	36.67	-90.02	-200.29	-580.99	674.99	624.75	50.24	13.435		
10,200.00	10,189.15	10,224.28	10,189.85	35.80	37.01	-90.02	-200.29	-580.99	674.99	624.25	50.74	13.304		
10,300.00	10,289.15	10,324.28	10,289.85	36.15	37.35	-90.02	-200.29	-580.99	674.99	623.76	51.23	13.175		
10,400.00	10,389.15	10,424.28	10,389.85	36.51	37.69	-90.02	-200.29	-580.99	674.99	623.26	51.73	13.048		
10,500.00	10,489.15	10,524.28	10,489.85	36.86	38.03	-90.02	-200.29	-580.99	674.99	622.76	52.23	12.924		
10,600.00	10,589.15	10,624.28	10,589.85	37.22	38.37	-90.02	-200.29	-580.99	674.99	622.27	52.72	12.802		
10,700.00	10,689.15	10,724.28	10,689.85	37.57	38.72	-90.02	-200.29	-580.99	674.99	621.77	53.22	12.683		
10,800.00	10,789.15	10,824.28	10,789.85	37.93	39.06	-90.02	-200.29	-580.99	674.99	621.27	53.72	12.565		
10,900.00	10,889.15	10,924.28	10,889.85	38.28	39.40	-90.02	-200.29	-580.99	674.99	620.77	54.22	12.450		
11,000.00	10,989.15	11,024.28	10,989.85	38.64	39.74	-90.02	-200.29	-580.99	674.99	620.28	54.71	12.337		
11,108.85	11,098.00	11,133.12	11,098.70	39.02	40.12	-90.02	-200.29	-580.99	674.99	619.73	55.26	12.216		
11,150.00	11,139.12	11,174.24	11,139.82	39.17	40.26	-89.63	-200.29	-580.99	674.98	619.52	55.46	12.171		
11,190.70	11,179.57	11,214.70	11,180.27	39.31	40.40	-90.00	-200.29	-580.99	674.96	619.31	55.65	12.128		
11,200.00	11,188.77	11,223.89	11,189.47	39.34	40.43	-90.12	-200.29	-580.99	674.97	619.27	55.70	12.118		
11,250.00	11,237.73	11,272.85	11,238.43	39.50	40.60	-90.94	-200.29	-580.99	675.06	619.13	55.93	12.070		
11,300.00	11,285.62	11,320.75	11,286.32	39.66	40.76	-92.06	-200.29	-580.99	675.46	619.31	56.15	12.030		
11,350.00	11,332.09	11,367.22	11,332.79	39.81	40.92	-93.42	-200.29	-580.99	676.41	620.05	56.36	12.001		
11,400.00	11,376.78	11,411.91	11,377.48	39.95	41.07	-94.92	-200.29	-580.99	678.24	621.68	56.56	11.991		
11,450.00	11,419.35	11,454.33	11,423.90	40.08	41.23	-96.64	-199.79	-580.99	681.25	624.50	56.76	12.003		
11,500.00	11,459.47	11,510.51	11,475.86	40.20	41.41	-98.52	-195.25	-581.04	685.30	628.36	56.94	12.035		
11,550.00	11,496.84	11,546.00	11,530.42	40.32	41.58	-100.40	-185.25	-581.13	690.26	633.17	57.10	12.089		
11,600.00	11,531.17	11,625.38	11,587.44	40.44	41.76	-102.30	-168.76	-581.28	696.03	638.82	57.21	12.167		
11,650.00	11,562.21	11,689.30	11,646.55	40.55	41.94	-104.19	-144.53	-581.50	702.42	645.18	57.24	12.272		
11,700.00	11,589.71	11,758.46	11,707.03	40.67	42.10	-106.07	-111.08	-581.81	709.21	652.03	57.17	12.405		
11,750.00	11,613.47	11,833.56	11,767.63	40.79	42.25	-107.91	-66.81	-582.21	716.11	659.13	56.98	12.567		
11,800.00	11,633.31	11,915.18	11,826.29	40.91	42.39	-109.67	-10.16	-582.73	722.78	666.10	56.68	12.751		
11,850.00	11,649.08	12,003.60	11,880.07	41.04	42.49	-111.26	59.91	-583.37	728.82	672.52	56.29	12.947		
11,900.00	11,660.65	12,098.59	11,925.10	41.16	42.58	-112.58	143.42	-584.14	733.80	677.89	55.91	13.126		
11,950.00	11,667.94	12,199.13	11,957.06	41.29	42.67	-113.54	238.60	-585.01	737.32	681.69	55.63	13.254		
12,000.00	11,670.89	12,303.35	11,972.12	41.42	42.85	-114.01	341.58	-585.96	739.07	683.48	55.60	13.294		
12,018.82	11,670.87	12,343.02	11,972.89	41.47	42.95	-114.06	381.24	-586.32	739.23	683.57	55.67	13.280		
12,100.00	11,669.46	12,425.45	11,971.32	41.72	43.19	-114.05	463.65	-587.08	739.18	683.21	55.97	13.206		
12,200.00	11,667.72	12,525.45	11,969.40	42.08	43.54	-114.04	563.63	-587.99	739.12	682.70	56.42	13.101		
12,300.00	11,665.98	12,625.45	11,967.49	42.50	43.96	-114.02	663.61	-588.91	739.06	682.11	56.94	12.979		
12,400.00	11,664.24	12,725.45	11,965.57	42.98	44.43	-114.01	763.58	-589.82	738.99	681.45	57.54	12.843		
12,500.00	11,662.50	12,825.45	11,963.66	43.51	44.95	-114.00	863.56	-590.74	738.93	680.71	58.22	12.693		
12,600.00	11,660.76	12,925.45	11,961.74	44.11	45.53	-113.98	963.54	-591.66	738.87	679.90	58.96	12.531		
12,700.00	11,659.01	13,025.45	11,959.82	44.75	46.16	-113.97	1,063.52	-592.57	738.80	679.02	59.78	12.358		
12,800.00	11,657.27	13,125.45	11,957.91	45.45	46.84	-113.96	1,163.49	-593.49	738.74	678.08	60.66	12.177		
12,900.00	11,655.53	13,225.45	11,955.99	46.19	47.57	-113.95	1,263.47	-594.41	738.68	677.07	61.61	11.989		
13,000.00	11,653.79	13,325.45	11,954.08	46.98	48.34	-113.93	1,363.45	-595.32	738.62	676.00	62.62	11.795		
13,100.00	11,652.05	13,425.45	11,952.16	47.82	49.15	-113.92	1,463.42	-596.24	738.55	674.87	63.69	11.597		
13,200.00	11,650.31	13,525.45	11,950.25	48.70	50.01	-113.91	1,563.40	-597.16	738.49	673.68	64.81	11.395		
13,300.00	11,648.57	13,625.45	11,948.33	49.61	50.90	-113.90	1,663.38	-598.07	738.43	672.45	65.98	11.192		
13,400.00	11,646.83	13,725.45	11,946.41	50.57	51.83	-113.88	1,763.36	-598.99	738.36	671.16	67.20	10.987		
13,500.00	11,645.09	13,825.45	11,944.50	51.55	52.80	-113.87	1,863.33	-599.90	738.30	669.83	68.47	10.783		
13,600.00	11,643.35	13,925.45	11,942.58	52.58	53.80	-113.86	1,963.31	-600.82	738.24	668.46	69.78	10.579		
13,700.00	11,641.61	14,025.45	11,940.67	53.63	54.82	-113.84	2,063.29	-601.74	738.18	667.04	71.14	10.377		
13,800.00	11,639.87	14,125.45	11,938.75	54.71	55.88	-113.83	2,163.27	-602.65	738.11	665.58	72.53	10.176		
13,900.00	11,638.13	14,225.45	11,936.84	55.82	56.97	-113.82	2,263.24	-603.57	738.05	664.09	73.96	9.979		
14,000.00	11,636.39	14,325.45	11,934.92	56.96	58.09	-113.81	2,363.22	-604.49	737.99	662.56	75.43	9.784		
14,100.00	11,634.65	14,425.45	11,933.00	58.12	59.22	-113.79	2,463.20	-605.40	737.93	661.00	76.93	9.593		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,632.91	14,525.45	11,931.09	59.31	60.39	-113.78	2,563.18	-606.32	737.86	659.41	78.46	9.405		
14,300.00	11,631.17	14,625.45	11,929.17	60.52	61.57	-113.77	2,663.15	-607.23	737.80	657.79	80.02	9.221		
14,400.00	11,629.42	14,725.45	11,927.26	61.74	62.78	-113.76	2,763.13	-608.15	737.74	656.14	81.60	9.041		
14,500.00	11,627.68	14,825.45	11,925.34	62.99	64.00	-113.74	2,863.11	-609.07	737.68	654.46	83.21	8.865		
14,600.00	11,625.94	14,925.45	11,923.43	64.26	65.25	-113.73	2,963.08	-609.98	737.62	652.76	84.85	8.693		
14,700.00	11,624.20	15,025.45	11,921.51	65.54	66.51	-113.72	3,063.06	-610.90	737.55	651.04	86.51	8.526		
14,800.00	11,622.46	15,125.45	11,919.59	66.84	67.79	-113.70	3,163.04	-611.82	737.49	649.30	88.19	8.363		
14,900.00	11,620.72	15,225.45	11,917.68	68.15	69.08	-113.69	3,263.02	-612.73	737.43	647.54	89.89	8.204		
15,000.00	11,618.98	15,325.45	11,915.76	69.48	70.39	-113.68	3,362.99	-613.65	737.37	645.76	91.61	8.049		
15,100.00	11,617.24	15,425.45	11,913.85	70.82	71.71	-113.67	3,462.97	-614.57	737.30	643.95	93.35	7.898		
15,200.00	11,615.50	15,525.45	11,911.93	72.18	73.05	-113.65	3,562.95	-615.48	737.24	642.14	95.11	7.752		
15,300.00	11,613.76	15,625.45	11,910.02	73.54	74.40	-113.64	3,662.93	-616.40	737.18	640.30	96.88	7.609		
15,400.00	11,612.02	15,725.45	11,908.10	74.92	75.76	-113.63	3,762.90	-617.31	737.12	638.46	98.66	7.471		
15,500.00	11,610.28	15,825.45	11,906.18	76.31	77.13	-113.62	3,862.88	-618.23	737.06	636.59	100.47	7.336		
15,600.00	11,608.54	15,925.45	11,904.27	77.71	78.52	-113.60	3,962.86	-619.15	737.00	634.72	102.28	7.206		
15,700.00	11,606.80	16,025.45	11,902.35	79.12	79.91	-113.59	4,062.83	-620.06	736.93	632.83	104.11	7.079		
15,800.00	11,605.06	16,125.45	11,900.44	80.54	81.31	-113.58	4,162.81	-620.98	736.87	630.93	105.95	6.955		
15,900.00	11,603.32	16,225.45	11,898.52	81.97	82.73	-113.56	4,262.79	-621.90	736.81	629.01	107.80	6.835		
16,000.00	11,601.57	16,325.45	11,896.61	83.40	84.15	-113.55	4,362.77	-622.81	736.75	627.09	109.66	6.718		
16,100.00	11,599.83	16,425.45	11,894.69	84.84	85.58	-113.54	4,462.74	-623.73	736.69	625.16	111.53	6.605		
16,200.00	11,598.09	16,525.45	11,892.77	86.30	87.01	-113.53	4,562.72	-624.65	736.62	623.21	113.41	6.495		
16,300.00	11,596.35	16,625.45	11,890.86	87.75	88.46	-113.51	4,662.70	-625.56	736.56	621.26	115.30	6.388		
16,400.00	11,594.61	16,725.45	11,888.94	89.22	89.91	-113.50	4,762.68	-626.48	736.50	619.30	117.20	6.284		
16,500.00	11,592.87	16,825.45	11,887.03	90.69	91.37	-113.49	4,862.65	-627.39	736.44	617.33	119.11	6.183		
16,600.00	11,591.13	16,925.45	11,885.11	92.17	92.83	-113.47	4,962.63	-628.31	736.38	615.35	121.03	6.084		
16,700.00	11,589.39	17,025.45	11,883.20	93.65	94.30	-113.46	5,062.61	-629.23	736.32	613.37	122.95	5.989		
16,800.00	11,587.65	17,125.44	11,881.28	95.14	95.78	-113.45	5,162.58	-630.14	736.26	611.37	124.88	5.896		
16,900.00	11,585.91	17,225.44	11,879.36	96.63	97.26	-113.44	5,262.56	-631.06	736.19	609.38	126.82	5.805		
17,000.00	11,584.17	17,325.44	11,877.45	98.13	98.75	-113.42	5,362.54	-631.98	736.13	607.37	128.76	5.717		
17,100.00	11,582.43	17,425.44	11,875.53	99.64	100.25	-113.41	5,462.52	-632.89	736.07	605.36	130.71	5.631		
17,200.00	11,580.69	17,525.44	11,873.62	101.14	101.74	-113.40	5,562.49	-633.81	736.01	603.34	132.67	5.548		
17,300.00	11,578.95	17,625.44	11,871.70	102.66	103.25	-113.39	5,662.47	-634.72	735.95	601.32	134.63	5.467		
17,400.00	11,577.21	17,725.44	11,869.79	104.17	104.75	-113.37	5,762.45	-635.64	735.89	599.30	136.59	5.387		
17,500.00	11,575.47	17,825.44	11,867.87	105.70	106.27	-113.36	5,862.43	-636.56	735.83	597.26	138.56	5.310		
17,600.00	11,573.73	17,925.44	11,865.95	107.22	107.78	-113.35	5,962.40	-637.47	735.77	595.22	140.54	5.235		
17,700.00	11,571.98	18,025.44	11,864.04	108.75	109.30	-113.33	6,062.38	-638.39	735.70	593.18	142.52	5.162		
17,800.00	11,570.24	18,125.44	11,862.12	110.28	110.82	-113.32	6,162.36	-639.31	735.64	591.14	144.50	5.091		
17,900.00	11,568.50	18,225.44	11,860.21	111.82	112.35	-113.31	6,262.34	-640.22	735.58	589.09	146.49	5.021		
18,000.00	11,566.76	18,325.44	11,858.29	113.36	113.88	-113.30	6,362.31	-641.14	735.52	587.04	148.49	4.953		
18,100.00	11,565.02	18,425.44	11,856.38	114.90	115.41	-113.28	6,462.29	-642.06	735.46	584.98	150.48	4.887		
18,200.00	11,563.28	18,525.44	11,854.46	116.44	116.95	-113.27	6,562.27	-642.97	735.40	582.92	152.48	4.823		
18,300.00	11,561.54	18,625.44	11,852.54	117.99	118.49	-113.26	6,662.24	-643.89	735.34	580.85	154.49	4.760		
18,400.00	11,559.80	18,725.44	11,850.63	119.54	120.04	-113.24	6,762.22	-644.80	735.28	578.79	156.49	4.699		
18,500.00	11,558.06	18,825.44	11,848.71	121.10	121.58	-113.23	6,862.20	-645.72	735.22	576.72	158.50	4.639		
18,600.00	11,556.32	18,925.44	11,846.80	122.65	123.13	-113.22	6,962.18	-646.64	735.16	574.64	160.51	4.580		
18,700.00	11,554.58	19,025.44	11,844.88	124.21	124.68	-113.21	7,062.15	-647.55	735.10	572.57	162.53	4.523		
18,800.00	11,552.84	19,125.44	11,842.97	125.77	126.23	-113.19	7,162.13	-648.47	735.04	570.49	164.55	4.467		
18,900.00	11,551.10	19,225.44	11,841.05	127.33	127.79	-113.18	7,262.11	-649.39	734.97	568.41	166.57	4.413		
19,000.00	11,549.36	19,325.44	11,839.13	128.90	129.35	-113.17	7,362.09	-650.30	734.91	566.32	168.59	4.359		
19,100.00	11,547.62	19,425.44	11,837.22	130.47	130.91	-113.15	7,462.06	-651.22	734.85	564.24	170.61	4.307		
19,200.00	11,545.88	19,525.44	11,835.30	132.04	132.47	-113.14	7,562.04	-652.14	734.79	562.15	172.64	4.256		
19,300.00	11,544.14	19,625.44	11,833.39	133.61	134.04	-113.13	7,662.02	-653.05	734.73	560.06	174.67	4.206		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,542.39	19,725.44	11,831.47	135.18	135.61	-113.12	7,761.99	-653.97	734.67	557.97	176.70	4.158		
19,500.00	11,540.65	19,825.44	11,829.56	136.76	137.18	-113.10	7,861.97	-654.88	734.61	555.88	178.73	4.110		
19,600.00	11,538.91	19,925.44	11,827.64	138.33	138.75	-113.09	7,961.95	-655.80	734.55	553.78	180.77	4.063		
19,700.00	11,537.17	20,025.44	11,825.72	139.91	140.32	-113.08	8,061.93	-656.72	734.49	551.69	182.81	4.018		
19,800.00	11,535.43	20,125.44	11,823.81	141.49	141.89	-113.06	8,161.90	-657.63	734.43	549.59	184.84	3.973		
19,900.00	11,533.69	20,225.44	11,821.89	143.08	143.47	-113.05	8,261.88	-658.55	734.37	547.49	186.88	3.930		
20,000.00	11,531.95	20,325.44	11,819.98	144.66	145.05	-113.04	8,361.86	-659.47	734.31	545.39	188.92	3.887		
20,100.00	11,530.21	20,425.44	11,818.06	146.24	146.63	-113.03	8,461.84	-660.38	734.25	543.28	190.97	3.845		
20,200.00	11,528.47	20,525.44	11,816.15	147.83	148.21	-113.01	8,561.81	-661.30	734.19	541.18	193.01	3.804		
20,300.00	11,526.73	20,625.44	11,814.23	149.42	149.79	-113.00	8,661.79	-662.22	734.13	539.07	195.05	3.764		
20,400.00	11,524.99	20,725.44	11,812.31	151.01	151.38	-112.99	8,761.77	-663.13	734.07	536.97	197.10	3.724		
20,500.00	11,523.25	20,825.44	11,810.40	152.60	152.96	-112.97	8,861.74	-664.05	734.01	534.86	199.15	3.686		
20,600.00	11,521.51	20,925.44	11,808.48	154.19	154.55	-112.96	8,961.72	-664.96	733.95	532.75	201.20	3.648		
20,700.00	11,519.77	21,025.44	11,806.57	155.78	156.14	-112.95	9,061.70	-665.88	733.89	530.64	203.24	3.611		
20,800.00	11,518.03	21,125.44	11,804.65	157.38	157.73	-112.94	9,161.68	-666.80	733.83	528.53	205.30	3.575		
20,900.00	11,516.29	21,225.44	11,802.74	158.97	159.32	-112.92	9,261.65	-667.71	733.77	526.42	207.35	3.539		
21,000.00	11,514.54	21,325.44	11,800.82	160.57	160.91	-112.91	9,361.63	-668.63	733.71	524.31	209.40	3.504		
21,100.00	11,512.80	21,425.44	11,798.90	162.17	162.51	-112.90	9,461.61	-669.55	733.65	522.20	211.45	3.470		
21,200.00	11,511.06	21,525.44	11,796.99	163.77	164.10	-112.88	9,561.59	-670.46	733.59	520.09	213.50	3.436		
21,300.00	11,509.32	21,625.44	11,795.07	165.37	165.70	-112.87	9,661.56	-671.38	733.53	517.97	215.56	3.403		
21,400.00	11,507.58	21,725.44	11,793.16	166.97	167.29	-112.86	9,761.54	-672.29	733.47	515.86	217.61	3.371		
21,500.00	11,505.84	21,825.44	11,791.24	168.57	168.89	-112.85	9,861.52	-673.21	733.41	513.74	219.67	3.339		
21,600.00	11,504.10	21,925.44	11,789.33	170.17	170.49	-112.83	9,961.50	-674.13	733.35	511.63	221.72	3.308		
21,700.00	11,502.36	22,025.44	11,787.41	171.78	172.09	-112.82	10,061.47	-675.04	733.29	509.51	223.78	3.277		
21,800.00	11,500.62	22,125.44	11,785.49	173.38	173.69	-112.81	10,161.45	-675.96	733.23	507.40	225.83	3.247		
21,804.84	11,500.54	22,129.79	11,785.41	173.46	173.76	-112.81	10,165.80	-676.00	733.23	507.30	225.93	3.245		
21,812.62	11,500.40	22,129.79	11,785.41	173.58	173.76	-112.81	10,165.80	-676.00	733.27	507.25	226.02	3.244		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	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	0.29	35.00	35.00							
100.00	100.00	99.70	99.70	0.13	0.13	89.53	0.29	35.00	35.00	34.82	0.18	197.559				
200.00	200.00	199.70	199.70	0.48	0.48	89.53	0.29	35.00	35.00	34.32	0.68	51.199				
300.00	300.00	299.70	299.70	0.84	0.84	89.53	0.29	35.00	35.00	33.81	1.19	29.398				
400.00	400.00	399.70	399.70	1.20	1.20	89.53	0.29	35.00	35.00	33.30	1.70	20.619				
500.00	500.00	499.70	499.70	1.56	1.56	89.53	0.29	35.00	35.00	32.80	2.20	15.877				
600.00	600.00	599.70	599.70	1.92	1.92	89.53	0.29	35.00	35.00	32.29	2.71	12.909				
700.00	700.00	699.70	699.70	2.28	2.28	89.53	0.29	35.00	35.00	31.78	3.22	10.875				
800.00	800.00	799.70	799.70	2.63	2.63	89.53	0.29	35.00	35.00	31.28	3.73	9.395				
900.00	900.00	899.70	899.70	2.99	2.99	89.53	0.29	35.00	35.00	30.77	4.23	8.270				
1,000.00	1,000.00	999.70	999.70	3.35	3.35	89.53	0.29	35.00	35.00	30.26	4.74	7.385				
1,100.00	1,100.00	1,099.70	1,099.70	3.71	3.71	89.53	0.29	35.00	35.00	29.75	5.25	6.672				
1,200.00	1,200.00	1,199.70	1,199.70	4.07	4.07	89.53	0.29	35.00	35.00	29.25	5.75	6.084				
1,300.00	1,300.00	1,299.70	1,299.70	4.43	4.43	89.53	0.29	35.00	35.00	28.74	6.26	5.591				
1,400.00	1,400.00	1,399.70	1,399.70	4.79	4.78	89.53	0.29	35.00	35.00	28.23	6.77	5.172				
1,500.00	1,500.00	1,499.70	1,499.70	5.14	5.14	89.53	0.29	35.00	35.00	27.73	7.27	4.812				
1,600.00	1,600.00	1,599.70	1,599.70	5.50	5.50	89.53	0.29	35.00	35.00	27.22	7.78	4.498				
1,700.00	1,700.00	1,699.70	1,699.70	5.86	5.86	89.53	0.29	35.00	35.00	26.71	8.29	4.223				
1,800.00	1,800.00	1,799.70	1,799.70	6.22	6.22	89.53	0.29	35.00	35.00	26.21	8.79	3.980				
1,900.00	1,900.00	1,899.70	1,899.70	6.58	6.58	89.53	0.29	35.00	35.00	25.70	9.30	3.763				
2,000.00	2,000.00	1,999.70	1,999.70	6.94	6.94	89.53	0.29	35.00	35.00	25.19	9.81	3.568				
2,100.00	2,100.00	2,099.70	2,099.70	7.29	7.29	89.53	0.29	35.00	35.00	24.69	10.32	3.393				
2,200.00	2,200.00	2,199.70	2,199.70	7.65	7.65	89.53	0.29	35.00	35.00	24.18	10.82	3.234				
2,300.00	2,300.00	2,299.70	2,299.70	8.01	8.01	89.53	0.29	35.00	35.00	23.67	11.33	3.089				
2,400.00	2,400.00	2,399.70	2,399.70	8.37	8.37	89.53	0.29	35.00	35.00	23.16	11.84	2.957				
2,500.00	2,500.00	2,499.70	2,499.70	8.73	8.73	89.53	0.29	35.00	35.00	22.66	12.34	2.836				
2,600.00	2,600.00	2,599.70	2,599.70	9.09	9.09	89.53	0.29	35.00	35.00	22.15	12.85	2.724				
2,700.00	2,700.00	2,699.70	2,699.70	9.45	9.44	89.53	0.29	35.00	35.00	21.64	13.36	2.620				
2,800.00	2,800.00	2,799.70	2,799.70	9.80	9.80	89.53	0.29	35.00	35.00	21.14	13.86	2.525				
2,900.00	2,900.00	2,899.70	2,899.70	10.16	10.16	89.53	0.29	35.00	35.00	20.63	14.37	2.435				
3,000.00	3,000.00	2,999.70	2,999.70	10.52	10.52	89.53	0.29	35.00	35.00	20.12	14.88	2.352				
3,100.00	3,100.00	3,099.70	3,099.70	10.88	10.88	89.53	0.29	35.00	35.00	19.62	15.39	2.275				
3,200.00	3,200.00	3,199.70	3,199.70	11.24	11.24	89.53	0.29	35.00	35.00	19.11	15.89	2.202 CC, ES				
3,300.00	3,300.00	3,298.89	3,298.88	11.60	11.58	90.53	-0.33	36.12	36.13	19.75	16.38	2.205				
3,400.00	3,400.00	3,397.94	3,397.86	11.96	11.91	93.20	-2.21	39.48	39.58	22.73	16.85	2.349				
3,500.00	3,500.00	3,496.73	3,496.43	12.31	12.24	96.73	-5.32	45.06	45.49	28.19	17.31	2.629				
3,600.00	3,600.00	3,595.95	3,595.29	12.67	12.58	100.20	-9.44	52.46	53.48	35.71	17.78	3.008				
3,700.00	3,700.00	3,695.57	3,694.53	13.03	12.92	102.82	-13.66	60.04	61.79	43.52	18.27	3.382				
3,800.00	3,800.00	3,795.19	3,793.78	13.39	13.26	104.81	-17.88	67.62	70.19	51.43	18.76	3.741				
3,900.00	3,900.00	3,894.81	3,893.02	13.75	13.60	106.38	-22.10	75.19	78.66	59.41	19.25	4.086				
4,000.00	4,000.00	3,994.43	3,992.26	14.11	13.95	107.64	-26.32	82.77	87.17	67.43	19.75	4.415				
4,100.00	4,100.00	4,094.05	4,091.50	14.46	14.30	108.68	-30.54	90.35	95.72	75.48	20.24	4.729				
4,200.00	4,200.00	4,193.68	4,190.74	14.82	14.65	109.55	-34.77	97.93	104.30	83.56	20.73	5.030				
4,300.00	4,300.00	4,293.30	4,289.99	15.18	15.00	110.28	-38.99	105.50	112.90	91.67	21.23	5.318				
4,400.00	4,400.00	4,392.92	4,389.23	15.54	15.35	110.91	-43.21	113.08	121.51	99.78	21.73	5.593				
4,500.00	4,500.00	4,492.54	4,488.47	15.90	15.71	111.46	-47.43	120.66	130.13	107.91	22.22	5.856				
4,600.00	4,599.99	4,592.24	4,587.79	16.24	16.07	-43.18	-51.66	128.24	137.81	115.11	22.71	6.069				
4,700.00	4,699.91	4,692.06	4,687.23	16.56	16.42	-43.74	-55.89	135.83	143.60	120.42	23.18	6.195				
4,800.00	4,799.69	4,791.92	4,786.72	16.89	16.78	-44.98	-60.12	143.43	147.54	123.88	23.66	6.237				
4,899.98	4,899.25	4,891.75	4,886.17	17.22	17.14	-46.89	-64.35	151.02	149.75	125.62	24.13	6.205				
5,000.00	4,998.72	4,991.58	4,985.62	17.55	17.50	-49.14	-68.58	158.62	151.27	126.65	24.61	6.145				
5,100.00	5,098.17	5,091.40	5,085.05	17.88	17.87	-51.33	-72.81	166.21	153.02	127.92	25.10	6.097				

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
5,200.00	5,197.63	5,191.21	5,184.49	18.21	18.23	-53.48	-77.04	173.80	154.98	129.40	25.59	6.057		
5,300.00	5,297.08	5,291.02	5,283.92	18.55	18.59	-55.57	-81.27	181.39	157.16	131.09	26.08	6.027		
5,400.00	5,396.53	5,390.84	5,383.36	18.89	18.96	-57.60	-85.50	188.99	159.55	132.98	26.57	6.005		
5,500.00	5,495.98	5,490.65	5,482.79	19.23	19.32	-59.57	-89.73	196.58	162.13	135.06	27.06	5.990		
5,600.00	5,595.44	5,590.46	5,582.23	19.58	19.69	-61.47	-93.96	204.17	164.89	137.33	27.56	5.982		
5,700.00	5,694.89	5,690.28	5,681.66	19.92	20.06	-63.32	-98.19	211.76	167.83	139.77	28.06	5.980		
5,800.00	5,794.34	5,790.09	5,781.10	20.27	20.43	-65.09	-102.42	219.36	170.94	142.37	28.57	5.984		
5,900.00	5,893.79	5,889.90	5,880.53	20.62	20.79	-66.80	-106.64	226.95	174.21	145.13	29.07	5.992		
6,000.00	5,993.24	5,989.72	5,979.97	20.97	21.16	-68.45	-110.87	234.54	177.62	148.04	29.58	6.004		
6,100.00	6,092.70	6,089.53	6,079.40	21.32	21.53	-70.03	-115.10	242.13	181.18	151.09	30.09	6.021		
6,200.00	6,192.15	6,189.34	6,178.83	21.68	21.90	-71.55	-119.33	249.72	184.87	154.27	30.61	6.040		
6,300.00	6,291.60	6,289.16	6,278.27	22.03	22.27	-73.01	-123.56	257.32	188.69	157.57	31.12	6.063		
6,400.00	6,391.05	6,388.97	6,377.70	22.39	22.64	-74.41	-127.79	264.91	192.62	160.98	31.64	6.088		
6,500.00	6,490.51	6,488.79	6,477.14	22.75	23.02	-75.76	-132.02	272.50	196.67	164.51	32.16	6.116		
6,600.00	6,589.96	6,588.60	6,576.57	23.11	23.39	-77.05	-136.25	280.09	200.82	168.14	32.67	6.146		
6,613.87	6,603.75	6,602.44	6,590.36	23.16	23.44	-77.22	-136.84	281.15	201.40	168.65	32.75	6.150		
6,700.00	6,689.50	6,688.44	6,676.03	23.47	23.76	-78.08	-140.48	287.69	205.26	172.07	33.19	6.184		
6,800.00	6,789.26	6,788.31	6,775.52	23.82	24.13	-78.39	-144.72	295.28	210.27	176.57	33.70	6.239		
6,900.00	6,889.17	6,888.13	6,874.97	24.17	24.51	-78.02	-148.95	302.88	215.82	181.61	34.20	6.310		
7,000.00	6,989.15	6,987.86	6,974.31	24.52	24.88	-77.01	-153.17	310.46	221.95	187.26	34.70	6.397		
7,013.85	7,003.00	7,001.65	6,988.06	24.57	24.93	-78.00	-153.76	311.51	222.86	188.09	34.76	6.411		
7,100.00	7,089.15	7,087.48	7,073.56	24.87	25.25	-79.23	-157.39	318.04	228.57	193.38	35.19	6.496		
7,200.00	7,189.15	7,187.10	7,172.80	25.22	25.62	-80.59	-161.61	325.62	235.33	199.65	35.68	6.595		
7,300.00	7,289.15	7,286.72	7,272.04	25.57	26.00	-81.87	-165.84	333.20	242.21	206.03	36.17	6.696		
7,400.00	7,389.15	7,386.34	7,371.28	25.92	26.37	-83.08	-170.06	340.77	249.20	212.54	36.67	6.796		
7,500.00	7,489.15	7,485.96	7,470.52	26.27	26.75	-84.23	-174.28	348.35	256.30	219.14	37.16	6.897		
7,600.00	7,589.15	7,585.58	7,569.77	26.62	27.12	-85.31	-178.50	355.93	263.50	225.85	37.65	6.998		
7,700.00	7,689.15	7,685.20	7,669.01	26.97	27.50	-86.33	-182.72	363.51	270.79	232.64	38.15	7.098		
7,800.00	7,789.15	7,784.82	7,768.25	27.32	27.87	-87.30	-186.94	371.08	278.15	239.51	38.65	7.198		
7,900.00	7,889.15	7,884.44	7,867.49	27.67	28.25	-88.22	-191.16	378.66	285.60	246.46	39.14	7.297		
8,000.00	7,989.15	7,988.65	7,971.36	28.03	28.64	-89.07	-195.28	386.04	292.60	252.93	39.67	7.376		
8,100.00	8,089.15	8,095.68	8,078.22	28.38	29.03	-89.64	-198.14	391.19	297.38	257.18	40.20	7.397		
8,200.00	8,189.15	8,202.96	8,185.46	28.73	29.41	-89.91	-199.55	393.72	299.74	259.02	40.72	7.362		
8,300.00	8,289.15	8,306.35	8,288.85	29.08	29.76	-89.94	-199.71	394.00	300.00	258.79	41.21	7.280		
8,400.00	8,389.15	8,406.35	8,388.85	29.43	30.10	-89.94	-199.71	394.00	300.00	258.30	41.70	7.194		
8,500.00	8,489.15	8,506.35	8,488.85	29.79	30.44	-89.94	-199.71	394.00	300.00	257.81	42.19	7.110		
8,600.00	8,589.15	8,606.35	8,588.85	30.14	30.78	-89.94	-199.71	394.00	300.00	257.31	42.69	7.028		
8,700.00	8,689.15	8,706.35	8,688.85	30.49	31.12	-89.94	-199.71	394.00	300.00	256.82	43.18	6.947		
8,800.00	8,789.15	8,806.35	8,788.85	30.85	31.46	-89.94	-199.71	394.00	300.00	256.32	43.68	6.869		
8,900.00	8,889.15	8,906.35	8,888.85	31.20	31.81	-89.94	-199.71	394.00	300.00	255.83	44.17	6.792		
9,000.00	8,989.15	9,006.35	8,988.85	31.55	32.15	-89.94	-199.71	394.00	300.00	255.34	44.66	6.717		
9,100.00	9,089.15	9,106.35	9,088.85	31.91	32.49	-89.94	-199.71	394.00	300.00	254.84	45.16	6.643		
9,200.00	9,189.15	9,206.35	9,188.85	32.26	32.83	-89.94	-199.71	394.00	300.00	254.35	45.65	6.571		
9,300.00	9,289.15	9,306.35	9,288.85	32.61	33.18	-89.94	-199.71	394.00	300.00	253.85	46.15	6.501		
9,400.00	9,389.15	9,406.35	9,388.85	32.97	33.52	-89.94	-199.71	394.00	300.00	253.36	46.64	6.432		
9,500.00	9,489.15	9,506.35	9,488.85	33.32	33.86	-89.94	-199.71	394.00	300.00	252.86	47.14	6.364		
9,600.00	9,589.15	9,606.35	9,588.85	33.67	34.21	-89.94	-199.71	394.00	300.00	252.36	47.64	6.298		
9,700.00	9,689.15	9,706.35	9,688.85	34.03	34.55	-89.94	-199.71	394.00	300.00	251.87	48.13	6.233		
9,800.00	9,789.15	9,806.35	9,788.85	34.38	34.90	-89.94	-199.71	394.00	300.00	251.37	48.63	6.169		
9,900.00	9,889.15	9,906.35	9,888.85	34.74	35.24	-89.94	-199.71	394.00	300.00	250.88	49.12	6.107		
10,000.00	9,989.15	10,006.35	9,988.85	35.09	35.59	-89.94	-199.71	394.00	300.00	250.38	49.62	6.046		
10,100.00	10,089.15	10,106.35	10,088.85	35.44	35.93	-89.94	-199.71	394.00	300.00	249.88	50.12	5.986		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
10,200.00	10,189.15	10,206.35	10,188.85	35.80	36.28	89.94	-199.71	394.00	300.00	249.38	50.62	5.927		
10,300.00	10,289.15	10,306.35	10,288.85	36.15	36.62	89.94	-199.71	394.00	300.00	248.89	51.11	5.869		
10,400.00	10,389.15	10,406.35	10,388.85	36.51	36.97	89.94	-199.71	394.00	300.00	248.39	51.61	5.813		
10,500.00	10,489.15	10,506.35	10,488.85	36.86	37.32	89.94	-199.71	394.00	300.00	247.89	52.11	5.757		
10,600.00	10,589.15	10,606.35	10,588.85	37.22	37.66	89.94	-199.71	394.00	300.00	247.39	52.61	5.703		
10,700.00	10,689.15	10,706.35	10,688.85	37.57	38.01	89.94	-199.71	394.00	300.00	246.90	53.10	5.649		
10,800.00	10,789.15	10,806.35	10,788.85	37.93	38.36	89.94	-199.71	394.00	300.00	246.40	53.60	5.597		
10,900.00	10,889.15	10,906.35	10,888.85	38.28	38.70	89.94	-199.71	394.00	300.00	245.90	54.10	5.545		
11,000.00	10,989.15	11,006.35	10,988.85	38.64	39.05	89.94	-199.71	394.00	300.00	245.40	54.60	5.495		
11,108.85	11,098.00	11,115.20	11,097.70	39.02	39.43	89.94	-199.71	394.00	300.00	244.86	55.14	5.440		
11,150.00	11,139.12	11,156.32	11,138.82	39.17	39.57	90.74	-199.71	394.00	300.02	244.67	55.34	5.421		
11,200.00	11,188.77	11,205.97	11,188.47	39.34	39.75	91.82	-199.71	394.00	300.15	244.57	55.58	5.400		
11,250.00	11,237.73	11,254.93	11,237.43	39.50	39.92	93.65	-199.71	394.00	300.64	244.84	55.80	5.388		
11,300.00	11,285.62	11,305.12	11,287.59	39.66	40.09	96.01	-198.34	393.99	301.77	245.76	56.01	5.388		
11,350.00	11,332.09	11,356.95	11,339.06	39.81	40.26	98.38	-192.43	393.93	303.46	247.26	56.20	5.400		
11,400.00	11,376.78	11,410.13	11,391.10	39.95	40.43	100.69	-181.55	393.84	305.65	249.29	56.35	5.424		
11,450.00	11,419.35	11,464.73	11,443.24	40.08	40.60	102.92	-165.42	393.69	308.28	251.83	56.45	5.461		
11,500.00	11,459.47	11,520.81	11,494.94	40.20	40.75	105.05	-143.77	393.49	311.26	254.79	56.47	5.512		
11,550.00	11,496.84	11,578.41	11,545.58	40.32	40.89	107.06	-116.37	393.24	314.50	258.10	56.41	5.576		
11,600.00	11,531.17	11,637.56	11,594.46	40.44	41.02	108.93	-83.10	392.94	317.89	261.65	56.24	5.653		
11,650.00	11,562.21	11,698.25	11,640.76	40.55	41.14	110.64	-43.92	392.59	321.29	265.32	55.97	5.740		
11,700.00	11,589.71	11,760.42	11,683.63	40.67	41.23	112.16	1.07	392.18	324.58	268.96	55.62	5.836		
11,750.00	11,613.47	11,824.01	11,722.17	40.79	41.31	113.48	51.61	391.72	327.63	272.41	55.22	5.933		
11,800.00	11,633.31	11,888.87	11,755.46	40.91	41.36	114.59	107.23	391.21	330.31	275.51	54.81	6.027		
11,850.00	11,649.08	11,954.83	11,782.66	41.04	41.43	115.47	167.27	390.67	332.53	278.09	54.44	6.108		
11,900.00	11,660.65	12,021.65	11,802.99	41.16	41.61	116.10	230.88	390.09	334.18	280.01	54.18	6.168		
11,950.00	11,667.94	12,089.07	11,815.87	41.29	41.79	116.49	297.02	389.49	335.20	281.14	54.06	6.200		
12,000.00	11,670.89	12,156.81	11,820.89	41.42	41.98	116.61	364.53	388.88	335.54	281.41	54.13	6.199		
12,018.82	11,670.87	12,180.53	11,820.78	41.47	42.04	116.60	388.25	388.66	335.50	281.30	54.20	6.190		
12,100.00	11,669.46	12,261.70	11,819.37	41.72	42.31	116.60	469.41	387.93	335.50	281.01	54.49	6.157		
12,200.00	11,667.72	12,361.70	11,817.63	42.08	42.68	116.60	569.39	387.02	335.50	280.58	54.92	6.109		
12,300.00	11,665.98	12,461.70	11,815.89	42.50	43.10	116.60	669.37	386.11	335.50	280.08	55.43	6.053		
12,400.00	11,664.24	12,561.70	11,814.15	42.98	43.59	116.60	769.35	385.20	335.50	279.50	56.01	5.990		
12,500.00	11,662.50	12,661.70	11,812.40	43.51	44.12	116.60	869.33	384.29	335.50	278.84	56.66	5.921		
12,600.00	11,660.76	12,761.70	11,810.66	44.11	44.71	116.60	969.31	383.39	335.50	278.12	57.38	5.847		
12,700.00	11,659.01	12,861.70	11,808.92	44.75	45.36	116.60	1,069.29	382.48	335.50	277.33	58.17	5.768		
12,800.00	11,657.27	12,961.70	11,807.18	45.45	46.05	116.60	1,169.27	381.57	335.50	276.48	59.02	5.684		
12,900.00	11,655.53	13,061.70	11,805.44	46.19	46.79	116.60	1,269.25	380.66	335.50	275.56	59.93	5.598		
13,000.00	11,653.79	13,161.70	11,803.70	46.98	47.57	116.60	1,369.23	379.76	335.50	274.59	60.91	5.508		
13,100.00	11,652.05	13,261.70	11,801.96	47.82	48.40	116.60	1,469.21	378.85	335.50	273.56	61.93	5.417		
13,200.00	11,650.31	13,361.70	11,800.22	48.70	49.27	116.60	1,569.20	377.94	335.50	272.49	63.01	5.324		
13,300.00	11,648.57	13,461.70	11,798.47	49.61	50.17	116.60	1,669.18	377.03	335.50	271.36	64.14	5.231		
13,400.00	11,646.83	13,561.70	11,796.73	50.57	51.12	116.60	1,769.16	376.13	335.50	270.18	65.32	5.136		
13,500.00	11,645.09	13,661.70	11,794.99	51.55	52.10	116.60	1,869.14	375.22	335.50	268.96	66.54	5.042		
13,600.00	11,643.35	13,761.70	11,793.25	52.58	53.11	116.60	1,969.12	374.31	335.50	267.70	67.80	4.949		
13,700.00	11,641.61	13,861.70	11,791.51	53.63	54.15	116.60	2,069.10	373.40	335.49	266.40	69.10	4.855		
13,800.00	11,639.87	13,961.70	11,789.77	54.71	55.23	116.60	2,169.08	372.50	335.49	265.06	70.43	4.763		
13,900.00	11,638.13	14,061.70	11,788.03	55.82	56.33	116.60	2,269.06	371.59	335.49	263.69	71.80	4.672		
14,000.00	11,636.39	14,161.70	11,786.29	56.96	57.46	116.60	2,369.04	370.68	335.49	262.29	73.21	4.583		
14,100.00	11,634.65	14,261.70	11,784.54	58.12	58.61	116.60	2,469.02	369.77	335.49	260.85	74.64	4.495		
14,200.00	11,632.91	14,361.70	11,782.80	59.31	59.78	116.60	2,569.00	368.86	335.49	259.39	76.10	4.408		
14,300.00	11,631.17	14,461.70	11,781.06	60.52	60.98	116.60	2,668.98	367.96	335.49	257.90	77.59	4.324		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	
14,400.00	11,629.42	14,561.70	11,779.32	61.74	62.20	116.60	2,768.96	367.05	335.49	256.39	79.10	4.241		
14,500.00	11,627.68	14,661.70	11,777.58	62.99	63.44	116.60	2,868.94	366.14	335.49	254.85	80.64	4.161		
14,600.00	11,625.94	14,761.70	11,775.84	64.26	64.70	116.60	2,968.93	365.23	335.49	253.30	82.19	4.082		
14,700.00	11,624.20	14,861.70	11,774.10	65.54	65.97	116.60	3,068.91	364.33	335.49	251.72	83.77	4.005		
14,800.00	11,622.46	14,961.70	11,772.36	66.84	67.26	116.60	3,168.89	363.42	335.49	250.12	85.37	3.930		
14,900.00	11,620.72	15,061.70	11,770.61	68.15	68.57	116.60	3,268.87	362.51	335.49	248.51	86.98	3.857		
15,000.00	11,618.98	15,161.70	11,768.87	69.48	69.89	116.60	3,368.85	361.60	335.49	246.88	88.61	3.786		
15,100.00	11,617.24	15,261.70	11,767.13	70.82	71.22	116.60	3,468.83	360.70	335.49	245.23	90.26	3.717		
15,200.00	11,615.50	15,361.70	11,765.39	72.18	72.57	116.60	3,568.81	359.79	335.49	243.57	91.92	3.650		
15,300.00	11,613.76	15,461.70	11,763.65	73.54	73.93	116.60	3,668.79	358.88	335.48	241.90	93.59	3.585		
15,400.00	11,612.02	15,561.70	11,761.91	74.92	75.30	116.60	3,768.77	357.97	335.48	240.21	95.27	3.521		
15,500.00	11,610.28	15,661.70	11,760.17	76.31	76.68	116.60	3,868.75	357.07	335.48	238.51	96.97	3.460		
15,600.00	11,608.54	15,761.70	11,758.43	77.71	78.07	116.60	3,968.73	356.16	335.48	236.81	98.68	3.400		
15,700.00	11,606.80	15,861.70	11,756.68	79.12	79.48	116.60	4,068.71	355.25	335.48	235.09	100.39	3.342		
15,800.00	11,605.06	15,961.70	11,754.94	80.54	80.89	116.60	4,168.69	354.34	335.48	233.36	102.12	3.285		
15,900.00	11,603.32	16,061.70	11,753.20	81.97	82.31	116.60	4,268.67	353.43	335.48	231.63	103.85	3.230		
16,000.00	11,601.57	16,161.70	11,751.46	83.40	83.74	116.60	4,368.66	352.53	335.48	229.88	105.60	3.177		
16,100.00	11,599.83	16,261.70	11,749.72	84.84	85.18	116.60	4,468.64	351.62	335.48	228.13	107.35	3.125		
16,200.00	11,598.09	16,361.70	11,747.98	86.30	86.62	116.60	4,568.62	350.71	335.48	226.38	109.10	3.075		
16,300.00	11,596.35	16,461.70	11,746.24	87.75	88.07	116.60	4,668.60	349.80	335.48	224.61	110.86	3.026		
16,400.00	11,594.61	16,561.70	11,744.50	89.22	89.53	116.60	4,768.58	348.90	335.48	222.85	112.63	2.979		
16,500.00	11,592.87	16,661.70	11,742.75	90.69	91.00	116.60	4,868.56	347.99	335.48	221.07	114.41	2.932		
16,600.00	11,591.13	16,761.70	11,741.01	92.17	92.47	116.60	4,968.54	347.08	335.48	219.29	116.18	2.887		
16,700.00	11,589.39	16,861.70	11,739.27	93.65	93.95	116.60	5,068.52	346.17	335.48	217.51	117.97	2.844		
16,800.00	11,587.65	16,961.70	11,737.53	95.14	95.43	116.60	5,168.50	345.27	335.48	215.72	119.75	2.801		
16,900.00	11,585.91	17,061.70	11,735.79	96.63	96.92	116.60	5,268.48	344.36	335.47	213.93	121.54	2.760		
17,000.00	11,584.17	17,161.70	11,734.05	98.13	98.42	116.60	5,368.46	343.45	335.47	212.14	123.33	2.720		
17,100.00	11,582.43	17,261.70	11,732.31	99.64	99.92	116.60	5,468.44	342.54	335.47	210.34	125.13	2.681		
17,200.00	11,580.69	17,361.70	11,730.57	101.14	101.42	116.60	5,568.42	341.63	335.47	208.55	126.93	2.643		
17,300.00	11,578.95	17,461.70	11,728.82	102.66	102.93	116.60	5,668.40	340.73	335.47	206.75	128.73	2.606		
17,400.00	11,577.21	17,561.70	11,727.08	104.17	104.44	116.60	5,768.39	339.82	335.47	204.94	130.53	2.570		
17,500.00	11,575.47	17,661.70	11,725.34	105.70	105.96	116.60	5,868.37	338.91	335.47	203.14	132.33	2.535		
17,600.00	11,573.73	17,761.70	11,723.60	107.22	107.48	116.60	5,968.35	338.00	335.47	201.33	134.14	2.501		
17,700.00	11,571.98	17,861.70	11,721.86	108.75	109.01	116.60	6,068.33	337.10	335.47	199.53	135.94	2.468		
17,800.00	11,570.24	17,961.70	11,720.12	110.28	110.53	116.60	6,168.31	336.19	335.47	197.72	137.75	2.435		
17,900.00	11,568.50	18,061.70	11,718.38	111.82	112.07	116.60	6,268.29	335.28	335.47	195.91	139.55	2.404		
18,000.00	11,566.76	18,161.70	11,716.64	113.36	113.60	116.60	6,368.27	334.37	335.47	194.11	141.36	2.373		
18,100.00	11,565.02	18,261.70	11,714.89	114.90	115.14	116.60	6,468.25	333.47	335.47	192.30	143.17	2.343		
18,200.00	11,563.28	18,361.70	11,713.15	116.44	116.68	116.60	6,568.23	332.56	335.47	190.49	144.98	2.314		
18,300.00	11,561.54	18,461.70	11,711.41	117.99	118.23	116.60	6,668.21	331.65	335.47	188.69	146.78	2.285		
18,400.00	11,559.80	18,561.70	11,709.67	119.54	119.77	116.60	6,768.19	330.74	335.47	186.88	148.59	2.258		
18,500.00	11,558.06	18,661.70	11,707.93	121.10	121.32	116.60	6,868.17	329.84	335.47	185.07	150.39	2.231		
18,600.00	11,556.32	18,761.70	11,706.19	122.65	122.88	116.60	6,968.15	328.93	335.46	183.27	152.20	2.204		
18,700.00	11,554.58	18,861.70	11,704.45	124.21	124.43	116.60	7,068.14	328.02	335.46	181.46	154.00	2.178		
18,800.00	11,552.84	18,961.70	11,702.70	125.77	125.99	116.60	7,168.12	327.11	335.46	179.66	155.80	2.153		
18,900.00	11,551.10	19,061.70	11,700.96	127.33	127.55	116.60	7,268.10	326.20	335.46	177.86	157.60	2.129		
19,000.00	11,549.36	19,161.70	11,699.22	128.90	129.11	116.60	7,368.08	325.30	335.46	176.06	159.40	2.105		
19,100.00	11,547.62	19,261.70	11,697.48	130.47	130.68	116.60	7,468.06	324.39	335.46	174.26	161.20	2.081		
19,200.00	11,545.88	19,361.70	11,695.74	132.04	132.25	116.60	7,568.04	323.48	335.46	172.47	162.99	2.058		
19,300.00	11,544.14	19,461.70	11,694.00	133.61	133.81	116.60	7,668.02	322.57	335.46	170.68	164.79	2.036		
19,400.00	11,542.39	19,561.70	11,692.26	135.18	135.38	116.60	7,768.00	321.67	335.46	168.88	166.58	2.014		
19,500.00	11,540.65	19,661.70	11,690.52	136.76	136.96	116.60	7,867.98	320.76	335.46	167.09	168.36	1.992		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
19,600.00	11,538.91	19,761.70	11,688.77	138.33	138.53	116.60	7,967.96	319.85	335.46	165.31	170.15	1.972		
19,700.00	11,537.17	19,861.70	11,687.03	139.91	140.11	116.60	8,067.94	318.94	335.46	163.52	171.94	1.951		
19,800.00	11,535.43	19,961.70	11,685.29	141.49	141.69	116.60	8,167.92	318.04	335.46	161.74	173.72	1.931		
19,900.00	11,533.69	20,061.70	11,683.55	143.08	143.27	116.60	8,267.90	317.13	335.46	159.96	175.49	1.911		
20,000.00	11,531.95	20,161.70	11,681.81	144.66	144.85	116.60	8,367.88	316.22	335.46	158.19	177.27	1.892		
20,100.00	11,530.21	20,261.70	11,680.07	146.24	146.43	116.60	8,467.87	315.31	335.46	156.41	179.04	1.874		
20,200.00	11,528.47	20,361.70	11,678.33	147.83	148.02	116.60	8,567.85	314.41	335.45	154.64	180.81	1.855		
20,300.00	11,526.73	20,461.70	11,676.59	149.42	149.60	116.60	8,667.83	313.50	335.45	152.88	182.58	1.837		
20,400.00	11,524.99	20,561.70	11,674.84	151.01	151.19	116.60	8,767.81	312.59	335.45	151.11	184.34	1.820		
20,500.00	11,523.25	20,661.70	11,673.10	152.60	152.78	116.60	8,867.79	311.68	335.45	149.35	186.10	1.803		
20,600.00	11,521.51	20,761.70	11,671.36	154.19	154.37	116.60	8,967.77	310.77	335.45	147.59	187.86	1.786		
20,700.00	11,519.77	20,861.70	11,669.62	155.78	155.96	116.60	9,067.75	309.87	335.45	145.84	189.61	1.769		
20,800.00	11,518.03	20,961.70	11,667.88	157.38	157.55	116.60	9,167.73	308.96	335.45	144.09	191.36	1.753		
20,900.00	11,516.29	21,061.70	11,666.14	158.97	159.14	116.60	9,267.71	308.05	335.45	142.34	193.11	1.737		
21,000.00	11,514.54	21,161.70	11,664.40	160.57	160.74	116.60	9,367.69	307.14	335.45	140.60	194.85	1.722		
21,100.00	11,512.80	21,261.70	11,662.66	162.17	162.34	116.60	9,467.67	306.24	335.45	138.86	196.59	1.706		
21,200.00	11,511.06	21,361.70	11,660.91	163.77	163.93	116.59	9,567.65	305.33	335.45	137.13	198.32	1.691		
21,300.00	11,509.32	21,461.70	11,659.17	165.37	165.53	116.59	9,667.63	304.42	335.45	135.40	200.05	1.677		
21,400.00	11,507.58	21,561.70	11,657.43	166.97	167.13	116.59	9,767.61	303.51	335.45	133.67	201.78	1.662		
21,500.00	11,505.84	21,661.70	11,655.69	168.57	168.73	116.59	9,867.60	302.61	335.45	131.95	203.50	1.648		
21,600.00	11,504.10	21,761.70	11,653.95	170.17	170.33	116.59	9,967.58	301.70	335.45	130.23	205.22	1.635		
21,700.00	11,502.36	21,861.70	11,652.21	171.78	171.93	116.59	10,067.56	300.79	335.45	128.51	206.93	1.621		
21,800.00	11,500.62	21,961.70	11,650.47	173.38	173.54	116.59	10,167.54	299.88	335.45	126.80	208.64	1.608		
21,810.96	11,500.43	21,972.67	11,650.28	173.56	173.71	116.59	10,178.50	299.78	335.45	126.61	208.83	1.606		
21,812.62	11,500.40	21,973.00	11,650.27	173.58	173.72	116.59	10,178.83	299.78	335.45	126.61	208.84	1.606 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	5.00	5.00	0.00	0.01	-83.68	232.67	-2,099.75	2,112.60					
100.00	100.00	105.00	105.00	0.13	0.16	-83.68	232.67	-2,099.75	2,112.60	2,112.40	0.20	N/A		
200.00	200.00	205.00	205.00	0.48	0.52	-83.68	232.67	-2,099.75	2,112.60	2,111.89	0.71	2,980.199		
300.00	300.00	305.00	305.00	0.84	0.88	-83.68	232.67	-2,099.75	2,112.60	2,111.39	1.22	1,737.817		
400.00	400.00	405.00	405.00	1.20	1.23	-83.68	232.67	-2,099.75	2,112.60	2,110.88	1.72	1,226.439		
500.00	500.00	505.00	505.00	1.56	1.59	-83.68	232.67	-2,099.75	2,112.60	2,110.37	2.23	947.582		
600.00	600.00	605.00	605.00	1.92	1.95	-83.68	232.67	-2,099.75	2,112.60	2,109.87	2.74	772.038		
700.00	700.00	705.00	705.00	2.28	2.31	-83.68	232.67	-2,099.75	2,112.60	2,109.36	3.24	651.367		
800.00	800.00	805.00	805.00	2.63	2.67	-83.68	232.67	-2,099.75	2,112.60	2,108.85	3.75	563.318		
900.00	900.00	905.00	905.00	2.99	3.03	-83.68	232.67	-2,099.75	2,112.60	2,108.34	4.26	496.239		
1,000.00	1,000.00	1,005.00	1,005.00	3.35	3.39	-83.68	232.67	-2,099.75	2,112.60	2,107.84	4.76	443.435		
1,100.00	1,100.00	1,105.00	1,105.00	3.71	3.74	-83.68	232.67	-2,099.75	2,112.60	2,107.33	5.27	400.788		
1,200.00	1,200.00	1,205.00	1,205.00	4.07	4.10	-83.68	232.67	-2,099.75	2,112.60	2,106.82	5.78	365.624		
1,300.00	1,300.00	1,305.00	1,305.00	4.43	4.46	-83.68	232.67	-2,099.75	2,112.60	2,106.32	6.29	336.133		
1,400.00	1,400.00	1,405.00	1,405.00	4.79	4.82	-83.68	232.67	-2,099.75	2,112.60	2,105.81	6.79	311.044		
1,500.00	1,500.00	1,505.00	1,505.00	5.14	5.18	-83.68	232.67	-2,099.75	2,112.60	2,105.30	7.30	289.440		
1,600.00	1,600.00	1,605.00	1,605.00	5.50	5.54	-83.68	232.67	-2,099.75	2,112.60	2,104.80	7.81	270.642		
1,700.00	1,700.00	1,705.00	1,705.00	5.86	5.90	-83.68	232.67	-2,099.75	2,112.60	2,104.29	8.31	254.137		
1,800.00	1,800.00	1,805.00	1,805.00	6.22	6.25	-83.68	232.67	-2,099.75	2,112.60	2,103.78	8.82	239.530		
1,900.00	1,900.00	1,905.00	1,905.00	6.58	6.61	-83.68	232.67	-2,099.75	2,112.60	2,103.27	9.33	226.510		
2,000.00	2,000.00	2,005.00	2,005.00	6.94	6.97	-83.68	232.67	-2,099.75	2,112.60	2,102.77	9.83	214.833		
2,100.00	2,100.00	2,105.00	2,105.00	7.29	7.33	-83.68	232.67	-2,099.75	2,112.60	2,102.26	10.34	204.301		
2,200.00	2,200.00	2,205.00	2,205.00	7.65	7.69	-83.68	232.67	-2,099.75	2,112.60	2,101.75	10.85	194.753		
2,300.00	2,300.00	2,305.00	2,305.00	8.01	8.05	-83.68	232.67	-2,099.75	2,112.60	2,101.25	11.35	186.058		
2,400.00	2,400.00	2,405.00	2,405.00	8.37	8.40	-83.68	232.67	-2,099.75	2,112.60	2,100.74	11.86	178.106		
2,500.00	2,500.00	2,509.49	2,509.49	8.73	8.78	-83.68	232.66	-2,099.74	2,112.60	2,100.22	12.38	170.662		
2,600.00	2,600.00	2,699.10	2,699.01	9.09	9.42	-83.75	229.51	-2,095.64	2,110.26	2,097.19	13.08	161.396		
2,700.00	2,700.00	2,887.72	2,887.06	9.45	10.05	-83.96	220.70	-2,084.16	2,103.70	2,089.96	13.75	153.041		
2,800.00	2,800.00	3,024.10	3,022.51	9.80	10.52	-84.18	211.07	-2,071.62	2,093.67	2,079.36	14.31	146.345		
2,900.00	2,900.00	3,123.36	3,121.03	10.16	10.87	-84.36	203.70	-2,062.02	2,083.29	2,068.49	14.80	140.792		
3,000.00	3,000.00	3,222.61	3,219.54	10.52	11.22	-84.54	196.33	-2,052.43	2,072.93	2,057.64	15.29	135.578		
3,100.00	3,100.00	3,321.87	3,318.06	10.88	11.57	-84.72	188.97	-2,042.84	2,062.59	2,046.81	15.78	130.675		
3,200.00	3,200.00	3,421.12	3,416.57	11.24	11.93	-84.90	181.60	-2,033.24	2,052.27	2,035.99	16.28	126.058		
3,300.00	3,300.00	3,520.38	3,515.09	11.60	12.29	-85.08	174.23	-2,023.65	2,041.97	2,025.20	16.78	121.704		
3,400.00	3,400.00	3,619.63	3,613.60	11.96	12.65	-85.26	166.87	-2,014.06	2,031.70	2,014.42	17.28	117.591		
3,500.00	3,500.00	3,718.88	3,712.12	12.31	13.02	-85.45	159.50	-2,004.46	2,021.44	2,003.66	17.78	113.702		
3,600.00	3,600.00	3,818.14	3,810.63	12.67	13.39	-85.64	152.13	-1,994.87	2,011.20	1,992.92	18.28	110.020		
3,700.00	3,700.00	3,917.39	3,909.15	13.03	13.76	-85.83	144.77	-1,985.28	2,000.99	1,982.21	18.78	106.529		
3,800.00	3,800.00	4,016.65	4,007.66	13.39	14.13	-86.02	137.40	-1,975.69	1,990.80	1,971.51	19.29	103.215		
3,900.00	3,900.00	4,115.90	4,106.18	13.75	14.50	-86.22	130.03	-1,966.09	1,980.63	1,960.84	19.79	100.066		
4,000.00	4,000.00	4,215.16	4,204.69	14.11	14.88	-86.41	122.66	-1,956.50	1,970.49	1,950.19	20.30	97.069		
4,100.00	4,100.00	4,314.41	4,303.21	14.46	15.26	-86.61	115.30	-1,946.91	1,960.36	1,939.56	20.81	94.216		
4,200.00	4,200.00	4,413.67	4,401.72	14.82	15.63	-86.81	107.93	-1,937.31	1,950.26	1,928.95	21.32	91.496		
4,300.00	4,300.00	4,512.92	4,500.24	15.18	16.02	-87.01	100.56	-1,927.72	1,940.19	1,918.36	21.82	88.900		
4,400.00	4,400.00	4,612.18	4,598.75	15.54	16.40	-87.22	93.20	-1,918.13	1,930.14	1,907.80	22.33	86.420		
4,500.00	4,500.00	4,711.43	4,697.27	15.90	16.78	-87.43	85.83	-1,908.53	1,920.11	1,897.27	22.85	84.049		
4,600.00	4,599.99	4,810.82	4,795.91	16.24	17.16	117.70	78.45	-1,898.93	1,910.72	1,887.37	23.34	81.849		
4,700.00	4,699.91	4,910.42	4,894.77	16.56	17.55	117.70	71.06	-1,889.30	1,902.54	1,878.71	23.83	79.829		
4,800.00	4,799.69	5,010.16	4,993.77	16.89	17.94	117.76	63.66	-1,879.66	1,895.59	1,871.26	24.32	77.936		
4,899.98	4,899.25	5,109.98	5,092.84	17.22	18.33	117.87	56.25	-1,870.01	1,889.85	1,865.04	24.81	76.162		
5,000.00	4,998.72	5,209.83	5,191.96	17.55	18.72	117.94	48.84	-1,860.36	1,884.72	1,859.42	25.31	74.476		
5,100.00	5,098.17	5,309.68	5,291.05	17.88	19.11	118.01	41.43	-1,850.71	1,879.60	1,853.80	25.80	72.848		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
5,200.00	5,197.63	5,409.52	5,390.15	18.21	19.50	118.08	34.02	-1,841.06	1,874.48	1,848.18	26.30	71.277		
5,300.00	5,297.08	5,509.36	5,489.25	18.55	19.89	118.15	26.61	-1,831.41	1,869.36	1,842.56	26.80	69.759		
5,400.00	5,396.53	5,609.21	5,588.35	18.89	20.28	118.22	19.20	-1,821.76	1,864.24	1,836.95	27.30	68.292		
5,500.00	5,495.98	5,709.05	5,687.45	19.23	20.68	118.29	11.79	-1,812.11	1,859.13	1,831.33	27.80	66.873		
5,600.00	5,595.44	5,808.89	5,786.55	19.58	21.07	118.36	4.38	-1,802.46	1,854.02	1,825.72	28.30	65.502		
5,700.00	5,694.89	5,908.73	5,885.65	19.92	21.47	118.43	-3.03	-1,792.81	1,848.92	1,820.11	28.81	64.176		
5,800.00	5,794.34	6,008.58	5,984.75	20.27	21.86	118.50	-10.44	-1,783.16	1,843.81	1,814.50	29.32	62.892		
5,900.00	5,893.79	6,108.42	6,083.84	20.62	22.26	118.57	-17.86	-1,773.51	1,838.71	1,808.89	29.83	61.649		
6,000.00	5,993.24	6,208.26	6,182.94	20.97	22.65	118.65	-25.27	-1,763.86	1,833.61	1,803.28	30.33	60.446		
6,100.00	6,092.70	6,308.11	6,282.04	21.32	23.05	118.72	-32.68	-1,754.21	1,828.52	1,797.67	30.85	59.280		
6,200.00	6,192.15	6,407.95	6,381.14	21.68	23.45	118.79	-40.09	-1,744.56	1,823.43	1,792.07	31.36	58.150		
6,300.00	6,291.60	6,507.79	6,480.24	22.03	23.84	118.87	-47.50	-1,734.91	1,818.34	1,786.47	31.87	57.055		
6,400.00	6,391.05	6,607.63	6,579.34	22.39	24.24	118.94	-54.91	-1,725.26	1,813.25	1,780.87	32.38	55.992		
6,500.00	6,490.51	6,707.48	6,678.44	22.75	24.64	119.02	-62.32	-1,715.61	1,808.17	1,775.27	32.90	54.962		
6,600.00	6,589.96	6,807.32	6,777.53	23.11	25.04	119.09	-69.73	-1,705.96	1,803.09	1,769.67	33.41	53.962		
6,613.87	6,603.75	6,821.16	6,791.27	23.16	25.09	119.10	-70.76	-1,704.62	1,802.38	1,768.90	33.49	53.825		
6,700.00	6,689.50	6,907.15	6,876.62	23.47	25.44	119.08	-77.14	-1,696.31	1,797.54	1,763.61	33.93	52.978		
6,800.00	6,789.26	7,006.91	6,975.64	23.82	25.83	118.96	-84.54	-1,686.67	1,790.73	1,756.29	34.45	51.988		
6,900.00	6,889.17	7,106.54	7,074.52	24.17	26.23	118.76	-91.94	-1,677.04	1,782.67	1,747.71	34.96	50.994		
7,000.00	6,989.15	7,205.96	7,173.20	24.52	26.63	118.46	-99.32	-1,667.43	1,773.36	1,737.89	35.47	49.997		
7,013.85	7,003.00	7,219.71	7,186.85	24.57	26.69	-86.76	-100.34	-1,666.10	1,771.97	1,736.43	35.54	49.858		
7,100.00	7,089.15	7,305.21	7,271.72	24.87	27.03	-86.95	-106.68	-1,657.84	1,763.28	1,727.30	35.99	49.001		
7,200.00	7,189.15	7,404.47	7,370.23	25.22	27.43	-87.18	-114.05	-1,648.24	1,753.23	1,716.73	36.50	48.032		
7,300.00	7,289.15	7,503.72	7,468.75	25.57	27.82	-87.40	-121.42	-1,638.65	1,743.20	1,706.18	37.02	47.090		
7,400.00	7,389.15	7,602.98	7,567.26	25.92	28.22	-87.63	-128.78	-1,629.06	1,733.20	1,695.66	37.54	46.174		
7,500.00	7,489.15	7,702.23	7,665.78	26.27	28.62	-87.87	-136.15	-1,619.46	1,723.22	1,685.17	38.05	45.284		
7,600.00	7,589.15	7,801.49	7,764.29	26.62	29.02	-88.10	-143.52	-1,609.87	1,713.28	1,674.70	38.57	44.417		
7,700.00	7,689.15	7,900.74	7,862.81	26.97	29.42	-88.34	-150.88	-1,600.28	1,703.36	1,664.27	39.09	43.573		
7,800.00	7,789.15	8,000.00	7,961.32	27.32	29.82	-88.58	-158.25	-1,590.69	1,693.47	1,653.86	39.61	42.752		
7,900.00	7,889.15	8,099.25	8,059.84	27.67	30.22	-88.82	-165.62	-1,581.09	1,683.62	1,643.49	40.13	41.952		
8,000.00	7,989.15	8,198.51	8,158.35	28.03	30.62	-89.07	-172.98	-1,571.50	1,673.79	1,633.14	40.65	41.173		
8,100.00	8,089.15	8,297.76	8,256.87	28.38	31.02	-89.32	-180.35	-1,561.91	1,664.00	1,622.82	41.17	40.414		
8,200.00	8,189.15	8,397.02	8,355.38	28.73	31.42	-89.57	-187.72	-1,552.31	1,654.23	1,612.54	41.70	39.674		
8,300.00	8,289.15	8,496.27	8,453.90	29.08	31.82	-89.83	-195.08	-1,542.72	1,644.50	1,602.29	42.22	38.953		
8,400.00	8,389.15	8,595.52	8,544.08	29.43	32.18	-90.06	-201.78	-1,534.00	1,634.89	1,592.17	42.73	38.264		
8,500.00	8,489.15	8,694.77	8,617.94	29.79	32.47	-90.23	-206.56	-1,527.77	1,626.50	1,583.30	43.20	37.652		
8,600.00	8,589.15	8,793.97	8,692.23	30.14	32.76	-90.37	-210.49	-1,522.66	1,619.67	1,576.01	43.66	37.097		
8,700.00	8,689.15	8,893.22	8,796.11	30.49	33.00	-90.47	-213.15	-1,519.19	1,614.44	1,570.35	44.08	36.621		
8,800.00	8,789.15	8,992.47	8,894.72	30.85	33.31	-90.56	-215.69	-1,515.88	1,610.66	1,566.11	44.55	36.152		
8,900.00	8,889.15	9,091.72	8,996.76	31.20	33.57	-90.60	-216.96	-1,514.23	1,608.48	1,563.50	44.98	35.760		
9,000.00	8,989.15	9,191.00	9,094.15	31.55	33.83	-90.62	-217.33	-1,513.75	1,607.84	1,562.44	45.40	35.413		
9,100.00	9,089.15	9,290.25	9,194.15	31.91	34.15	-90.62	-217.33	-1,513.75	1,607.84	1,561.96	45.88	35.041		
9,200.00	9,189.15	9,389.50	9,294.15	32.26	34.47	-90.62	-217.33	-1,513.75	1,607.84	1,561.48	46.37	34.677		
9,300.00	9,289.15	9,488.75	9,394.15	32.61	34.79	-90.62	-217.33	-1,513.75	1,607.84	1,560.99	46.85	34.319		
9,400.00	9,389.15	9,588.00	9,494.15	32.97	35.11	-90.62	-217.33	-1,513.75	1,607.84	1,560.51	47.33	33.969		
9,500.00	9,489.15	9,687.25	9,594.15	33.32	35.44	-90.62	-217.33	-1,513.75	1,607.84	1,560.03	47.82	33.625		
9,600.00	9,589.15	9,786.50	9,694.15	33.67	35.76	-90.62	-217.33	-1,513.75	1,607.84	1,559.54	48.30	33.288		
9,700.00	9,689.15	9,885.75	9,794.15	34.03	36.09	-90.62	-217.33	-1,513.75	1,607.84	1,559.06	48.79	32.957		
9,800.00	9,789.15	9,985.00	9,894.15	34.38	36.41	-90.62	-217.33	-1,513.75	1,607.84	1,558.57	49.27	32.632		
9,900.00	9,889.15	10,084.25	9,994.15	34.74	36.74	-90.62	-217.33	-1,513.75	1,607.84	1,558.09	49.76	32.314		
10,000.00	9,989.15	10,183.50	10,094.15	35.09	37.06	-90.62	-217.33	-1,513.75	1,607.84	1,557.60	50.24	32.001		
10,100.00	10,089.15	10,282.75	10,194.15	35.44	37.39	-90.62	-217.33	-1,513.75	1,607.84	1,557.11	50.73	31.694		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
10,200.00	10,189.15	10,238.18	10,194.15	35.80	37.72	-90.62	-217.33	-1,513.75	1,607.84	1,556.63	51.22	31.393		
10,300.00	10,289.15	10,338.18	10,294.15	36.15	38.05	-90.62	-217.33	-1,513.75	1,607.84	1,556.14	51.70	31.097		
10,400.00	10,389.15	10,438.18	10,394.15	36.51	38.37	-90.62	-217.33	-1,513.75	1,607.84	1,555.65	52.19	30.806		
10,500.00	10,489.15	10,538.18	10,494.15	36.86	38.70	-90.62	-217.33	-1,513.75	1,607.84	1,555.16	52.68	30.521		
10,600.00	10,589.15	10,638.18	10,594.15	37.22	39.03	-90.62	-217.33	-1,513.75	1,607.84	1,554.67	53.17	30.240		
10,700.00	10,689.15	10,738.18	10,694.15	37.57	39.36	-90.62	-217.33	-1,513.75	1,607.84	1,554.19	53.66	29.965		
10,800.00	10,789.15	10,838.18	10,794.15	37.93	39.69	-90.62	-217.33	-1,513.75	1,607.84	1,553.70	54.15	29.694		
10,900.00	10,889.15	10,938.18	10,894.15	38.28	40.03	-90.62	-217.33	-1,513.75	1,607.84	1,553.21	54.64	29.428		
11,000.00	10,989.15	11,038.18	10,994.15	38.64	40.36	-90.62	-217.33	-1,513.75	1,607.84	1,552.72	55.13	29.167		
11,108.85	11,098.00	11,147.03	11,103.00	39.02	40.72	-90.62	-217.33	-1,513.75	1,607.84	1,552.18	55.66	28.887 CC		
11,150.00	11,139.12	11,188.14	11,144.12	39.17	40.86	-90.15	-217.33	-1,513.75	1,607.85	1,551.99	55.86	28.783		
11,200.00	11,188.77	11,237.79	11,193.77	39.34	41.02	-90.35	-217.33	-1,513.75	1,607.87	1,551.77	56.10	28.659		
11,250.00	11,237.73	11,286.75	11,242.73	39.50	41.18	-90.69	-217.33	-1,513.75	1,607.97	1,551.62	56.34	28.538		
11,300.00	11,285.62	11,335.35	11,291.32	39.66	41.34	-91.16	-217.22	-1,513.75	1,608.21	1,551.62	56.58	28.422		
11,350.00	11,332.09	11,386.77	11,342.62	39.81	41.51	-91.68	-213.90	-1,513.78	1,608.60	1,551.79	56.82	28.311		
11,400.00	11,376.78	11,439.79	11,394.98	39.95	41.66	-92.20	-205.68	-1,513.85	1,609.14	1,552.09	57.05	28.207		
11,450.00	11,419.35	11,494.52	11,447.99	40.08	41.81	-92.72	-192.15	-1,513.96	1,609.80	1,552.54	57.26	28.112		
11,500.00	11,459.47	11,551.08	11,501.16	40.20	41.95	-93.22	-172.93	-1,514.13	1,610.57	1,553.11	57.47	28.026		
11,550.00	11,496.84	11,609.56	11,553.86	40.32	42.07	-93.71	-147.65	-1,514.34	1,611.42	1,553.77	57.65	27.950		
11,600.00	11,531.17	11,670.02	11,605.35	40.44	42.17	-94.17	-116.00	-1,514.61	1,612.33	1,554.51	57.83	27.883		
11,650.00	11,562.21	11,732.51	11,654.75	40.55	42.26	-94.61	-77.79	-1,514.93	1,613.26	1,555.28	57.98	27.824		
11,700.00	11,589.71	11,797.01	11,701.06	40.67	42.32	-95.02	-32.95	-1,515.32	1,614.18	1,556.05	58.13	27.771		
11,750.00	11,613.47	11,863.43	11,743.18	40.79	42.36	-95.38	18.36	-1,515.75	1,615.03	1,556.78	58.26	27.722		
11,800.00	11,633.31	11,931.64	11,779.96	40.91	42.38	-95.69	75.75	-1,516.24	1,615.80	1,557.41	58.39	27.675		
11,850.00	11,649.08	12,001.39	11,810.25	41.04	42.38	-95.95	138.54	-1,516.77	1,616.43	1,557.91	58.51	27.625		
11,900.00	11,660.65	12,072.39	11,833.01	41.16	42.35	-96.13	205.74	-1,517.34	1,616.89	1,558.24	58.65	27.569		
11,950.00	11,667.94	12,144.25	11,847.41	41.29	42.31	-96.25	276.10	-1,517.94	1,617.16	1,558.37	58.80	27.504		
12,000.00	11,670.89	12,216.55	11,852.91	41.42	42.26	-96.28	348.13	-1,518.55	1,617.23	1,558.27	58.96	27.430		
12,018.82	11,670.87	12,240.62	11,852.76	41.47	42.25	-96.28	372.20	-1,518.75	1,617.20	1,558.18	59.02	27.400		
12,100.00	11,669.46	12,321.80	11,851.41	41.72	42.25	-96.28	453.36	-1,519.44	1,617.16	1,557.85	59.31	27.267		
12,200.00	11,667.72	12,421.80	11,849.75	42.08	42.52	-96.29	553.34	-1,520.29	1,617.11	1,557.37	59.74	27.069		
12,300.00	11,665.98	12,521.80	11,848.09	42.50	42.88	-96.29	653.33	-1,521.14	1,617.06	1,556.80	60.26	26.835		
12,400.00	11,664.24	12,621.80	11,846.43	42.98	43.28	-96.29	753.31	-1,521.99	1,617.02	1,556.15	60.86	26.568		
12,500.00	11,662.50	12,721.80	11,844.77	43.51	43.75	-96.30	853.29	-1,522.84	1,616.97	1,555.42	61.55	26.272		
12,600.00	11,660.76	12,821.80	11,843.11	44.11	44.26	-96.30	953.27	-1,523.69	1,616.92	1,554.60	62.31	25.949		
12,700.00	11,659.01	12,921.80	11,841.45	44.75	44.83	-96.30	1,053.26	-1,524.54	1,616.87	1,553.71	63.15	25.603		
12,800.00	11,657.27	13,021.80	11,839.79	45.45	45.44	-96.30	1,153.24	-1,525.39	1,616.82	1,552.75	64.07	25.237		
12,900.00	11,655.53	13,121.80	11,838.13	46.19	46.10	-96.31	1,253.22	-1,526.23	1,616.77	1,551.72	65.05	24.854		
13,000.00	11,653.79	13,221.80	11,836.47	46.98	46.81	-96.31	1,353.20	-1,527.08	1,616.72	1,550.62	66.10	24.459		
13,100.00	11,652.05	13,321.80	11,834.81	47.82	47.57	-96.31	1,453.19	-1,527.93	1,616.67	1,549.45	67.22	24.052		
13,200.00	11,650.31	13,421.80	11,833.14	48.70	48.37	-96.32	1,553.17	-1,528.78	1,616.62	1,548.23	68.39	23.638		
13,300.00	11,648.57	13,521.80	11,831.48	49.61	49.21	-96.32	1,653.15	-1,529.63	1,616.57	1,546.95	69.62	23.218		
13,400.00	11,646.83	13,621.80	11,829.82	50.57	50.09	-96.32	1,753.14	-1,530.48	1,616.52	1,545.61	70.91	22.796		
13,500.00	11,645.09	13,721.80	11,828.16	51.55	51.00	-96.33	1,853.12	-1,531.33	1,616.47	1,544.22	72.25	22.372		
13,600.00	11,643.35	13,821.80	11,826.50	52.58	51.95	-96.33	1,953.10	-1,532.18	1,616.42	1,542.78	73.64	21.949		
13,700.00	11,641.61	13,921.80	11,824.84	53.63	52.94	-96.33	2,053.08	-1,533.02	1,616.37	1,541.29	75.08	21.529		
13,800.00	11,639.87	14,021.80	11,823.18	54.71	53.96	-96.34	2,153.07	-1,533.87	1,616.32	1,539.77	76.56	21.113		
13,900.00	11,638.13	14,121.80	11,821.52	55.82	55.01	-96.34	2,253.05	-1,534.72	1,616.27	1,538.20	78.08	20.701		
14,000.00	11,636.39	14,221.80	11,819.86	56.96	56.08	-96.34	2,353.03	-1,535.57	1,616.22	1,536.59	79.64	20.295		
14,100.00	11,634.65	14,321.80	11,818.20	58.12	57.19	-96.34	2,453.01	-1,536.42	1,616.18	1,534.94	81.23	19.896		
14,200.00	11,632.91	14,421.80	11,816.54	59.31	58.32	-96.35	2,553.00	-1,537.27	1,616.13	1,533.26	82.86	19.504		
14,300.00	11,631.17	14,521.79	11,814.88	60.52	59.47	-96.35	2,652.98	-1,538.12	1,616.08	1,531.55	84.52	19.120		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
14,400.00	11,629.42	14,621.79	11,813.22	61.74	60.65	-96.35	2,752.96	-1,538.97	1,616.03	1,529.81	86.22	18.744		
14,500.00	11,627.68	14,721.79	11,811.56	62.99	61.84	-96.36	2,852.94	-1,539.81	1,615.98	1,528.04	87.94	18.376		
14,600.00	11,625.94	14,821.79	11,809.89	64.26	63.06	-96.36	2,952.93	-1,540.66	1,615.93	1,526.24	89.69	18.017		
14,700.00	11,624.20	14,921.79	11,808.23	65.54	64.30	-96.36	3,052.91	-1,541.51	1,615.88	1,524.42	91.46	17.667		
14,800.00	11,622.46	15,021.79	11,806.57	66.84	65.55	-96.37	3,152.89	-1,542.36	1,615.83	1,522.57	93.26	17.326		
14,900.00	11,620.72	15,121.79	11,804.91	68.15	66.83	-96.37	3,252.87	-1,543.21	1,615.78	1,520.70	95.08	16.993		
15,000.00	11,618.98	15,221.79	11,803.25	69.48	68.12	-96.37	3,352.86	-1,544.06	1,615.73	1,518.81	96.93	16.670		
15,100.00	11,617.24	15,321.79	11,801.59	70.82	69.42	-96.37	3,452.84	-1,544.91	1,615.68	1,516.89	98.79	16.355		
15,200.00	11,615.50	15,421.79	11,799.93	72.18	70.74	-96.38	3,552.82	-1,545.76	1,615.63	1,514.96	100.67	16.048		
15,300.00	11,613.76	15,521.79	11,798.27	73.54	72.07	-96.38	3,652.80	-1,546.60	1,615.58	1,513.01	102.57	15.751		
15,400.00	11,612.02	15,621.79	11,796.61	74.92	73.41	-96.38	3,752.79	-1,547.45	1,615.53	1,511.04	104.49	15.461		
15,500.00	11,610.28	15,721.79	11,794.95	76.31	74.77	-96.39	3,852.77	-1,548.30	1,615.48	1,509.06	106.42	15.180		
15,600.00	11,608.54	15,821.79	11,793.29	77.71	76.14	-96.39	3,952.75	-1,549.15	1,615.44	1,507.06	108.37	14.906		
15,700.00	11,606.80	15,921.79	11,791.63	79.12	77.52	-96.39	4,052.73	-1,550.00	1,615.39	1,505.05	110.33	14.641		
15,800.00	11,605.06	16,021.79	11,789.97	80.54	78.91	-96.40	4,152.72	-1,550.85	1,615.34	1,503.03	112.31	14.383		
15,900.00	11,603.32	16,121.79	11,788.30	81.97	80.31	-96.40	4,252.70	-1,551.70	1,615.29	1,500.99	114.30	14.132		
16,000.00	11,601.57	16,221.79	11,786.64	83.40	81.72	-96.40	4,352.68	-1,552.55	1,615.24	1,498.93	116.30	13.888		
16,100.00	11,599.83	16,321.79	11,784.98	84.84	83.14	-96.41	4,452.66	-1,553.39	1,615.19	1,496.87	118.32	13.651		
16,200.00	11,598.09	16,421.79	11,783.32	86.30	84.56	-96.41	4,552.65	-1,554.24	1,615.14	1,494.80	120.34	13.421		
16,300.00	11,596.35	16,521.79	11,781.66	87.75	86.00	-96.41	4,652.63	-1,555.09	1,615.09	1,492.71	122.38	13.197		
16,400.00	11,594.61	16,621.79	11,780.00	89.22	87.44	-96.41	4,752.61	-1,555.94	1,615.04	1,490.62	124.42	12.980		
16,500.00	11,592.87	16,721.79	11,778.34	90.69	88.89	-96.42	4,852.59	-1,556.79	1,614.99	1,488.51	126.48	12.769		
16,600.00	11,591.13	16,821.79	11,776.68	92.17	90.35	-96.42	4,952.58	-1,557.64	1,614.94	1,486.40	128.54	12.563		
16,700.00	11,589.39	16,921.79	11,775.02	93.65	91.81	-96.42	5,052.56	-1,558.49	1,614.89	1,484.28	130.62	12.364		
16,800.00	11,587.65	17,021.79	11,773.36	95.14	93.28	-96.43	5,152.54	-1,559.34	1,614.84	1,482.15	132.70	12.169		
16,900.00	11,585.91	17,121.79	11,771.70	96.63	94.75	-96.43	5,252.52	-1,560.18	1,614.79	1,480.01	134.79	11.980		
17,000.00	11,584.17	17,221.79	11,770.04	98.13	96.24	-96.43	5,352.51	-1,561.03	1,614.75	1,477.86	136.88	11.797		
17,100.00	11,582.43	17,321.79	11,768.38	99.64	97.72	-96.44	5,452.49	-1,561.88	1,614.70	1,475.71	138.99	11.618		
17,200.00	11,580.69	17,421.79	11,766.71	101.14	99.21	-96.44	5,552.47	-1,562.73	1,614.65	1,473.55	141.10	11.443		
17,300.00	11,578.95	17,521.79	11,765.05	102.66	100.71	-96.44	5,652.45	-1,563.58	1,614.60	1,471.38	143.21	11.274		
17,400.00	11,577.21	17,621.79	11,763.39	104.17	102.21	-96.44	5,752.44	-1,564.43	1,614.55	1,469.21	145.34	11.109		
17,500.00	11,575.47	17,721.79	11,761.73	105.70	103.72	-96.45	5,852.42	-1,565.28	1,614.50	1,467.03	147.47	10.948		
17,600.00	11,573.73	17,821.79	11,760.07	107.22	105.23	-96.45	5,952.40	-1,566.13	1,614.45	1,464.85	149.60	10.792		
17,700.00	11,571.98	17,921.79	11,758.41	108.75	106.74	-96.45	6,052.39	-1,566.98	1,614.40	1,462.66	151.74	10.639		
17,800.00	11,570.24	18,021.79	11,756.75	110.28	108.26	-96.46	6,152.37	-1,567.82	1,614.35	1,460.46	153.89	10.490		
17,900.00	11,568.50	18,121.79	11,755.09	111.82	109.78	-96.46	6,252.35	-1,568.67	1,614.30	1,458.26	156.04	10.345		
18,000.00	11,566.76	18,221.79	11,753.43	113.36	111.31	-96.46	6,352.33	-1,569.52	1,614.25	1,456.06	158.20	10.204		
18,100.00	11,565.02	18,321.79	11,751.77	114.90	112.84	-96.47	6,452.32	-1,570.37	1,614.20	1,453.85	160.36	10.066		
18,200.00	11,563.28	18,421.79	11,750.11	116.44	114.37	-96.47	6,552.30	-1,571.22	1,614.16	1,451.63	162.52	9.932		
18,300.00	11,561.54	18,521.79	11,748.45	117.99	115.91	-96.47	6,652.28	-1,572.07	1,614.11	1,449.42	164.69	9.801		
18,400.00	11,559.80	18,621.79	11,746.79	119.54	117.45	-96.48	6,752.26	-1,572.92	1,614.06	1,447.19	166.86	9.673		
18,500.00	11,558.06	18,721.79	11,745.12	121.10	118.99	-96.48	6,852.25	-1,573.77	1,614.01	1,444.97	169.04	9.548		
18,600.00	11,556.32	18,821.79	11,743.46	122.65	120.53	-96.48	6,952.23	-1,574.61	1,613.96	1,442.74	171.22	9.426		
18,700.00	11,554.58	18,921.79	11,741.80	124.21	122.08	-96.48	7,052.21	-1,575.46	1,613.91	1,440.50	173.41	9.307		
18,800.00	11,552.84	19,021.79	11,740.14	125.77	123.63	-96.49	7,152.19	-1,576.31	1,613.86	1,438.27	175.59	9.191		
18,900.00	11,551.10	19,121.79	11,738.48	127.33	125.19	-96.49	7,252.18	-1,577.16	1,613.81	1,436.03	177.78	9.077		
19,000.00	11,549.36	19,221.79	11,736.82	128.90	126.74	-96.49	7,352.16	-1,578.01	1,613.76	1,433.78	179.98	8.966		
19,100.00	11,547.62	19,321.79	11,735.16	130.47	128.30	-96.50	7,452.14	-1,578.86	1,613.71	1,431.54	182.18	8.858		
19,200.00	11,545.88	19,421.79	11,733.50	132.04	129.86	-96.50	7,552.12	-1,579.71	1,613.66	1,429.29	184.38	8.752		
19,300.00	11,544.14	19,521.79	11,731.84	133.61	131.42	-96.50	7,652.11	-1,580.56	1,613.61	1,427.04	186.58	8.648		
19,400.00	11,542.39	19,621.79	11,730.18	135.18	132.99	-96.51	7,752.09	-1,581.40	1,613.57	1,424.78	188.78	8.547		
19,500.00	11,540.65	19,721.79	11,728.52	136.76	134.55	-96.51	7,852.07	-1,582.25	1,613.52	1,422.52	190.99	8.448		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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		
19,600.00	11,538.91	19,821.79	11,726.86	138.33	136.12	-96.51	7,952.05	-1,583.10	1,613.47	1,420.26	193.20	8.351		
19,700.00	11,537.17	19,921.79	11,725.20	139.91	137.69	-96.52	8,052.04	-1,583.95	1,613.42	1,418.00	195.42	8.256		
19,800.00	11,535.43	20,021.79	11,723.53	141.49	139.27	-96.52	8,152.02	-1,584.80	1,613.37	1,415.74	197.63	8.163		
19,900.00	11,533.69	20,121.79	11,721.87	143.08	140.84	-96.52	8,252.00	-1,585.65	1,613.32	1,413.47	199.85	8.073		
20,000.00	11,531.95	20,221.79	11,720.21	144.66	142.42	-96.52	8,351.98	-1,586.50	1,613.27	1,411.20	202.07	7.984		
20,100.00	11,530.21	20,321.79	11,718.55	146.24	144.00	-96.53	8,451.97	-1,587.35	1,613.22	1,408.93	204.30	7.897		
20,200.00	11,528.47	20,421.79	11,716.89	147.83	145.57	-96.53	8,551.95	-1,588.19	1,613.17	1,406.65	206.52	7.811		
20,300.00	11,526.73	20,521.79	11,715.23	149.42	147.16	-96.53	8,651.93	-1,589.04	1,613.12	1,404.38	208.75	7.728		
20,400.00	11,524.99	20,621.79	11,713.57	151.01	148.74	-96.54	8,751.91	-1,589.89	1,613.07	1,402.10	210.98	7.646		
20,500.00	11,523.25	20,721.79	11,711.91	152.60	150.32	-96.54	8,851.90	-1,590.74	1,613.03	1,399.82	213.21	7.566		
20,600.00	11,521.51	20,821.79	11,710.25	154.19	151.91	-96.54	8,951.88	-1,591.59	1,612.98	1,397.54	215.44	7.487		
20,700.00	11,519.77	20,921.79	11,708.59	155.78	153.50	-96.55	9,051.86	-1,592.44	1,612.93	1,395.25	217.67	7.410		
20,800.00	11,518.03	21,021.79	11,706.93	157.38	155.08	-96.55	9,151.84	-1,593.29	1,612.88	1,392.97	219.91	7.334		
20,900.00	11,516.29	21,121.79	11,705.27	158.97	156.67	-96.55	9,251.83	-1,594.14	1,612.83	1,390.68	222.15	7.260		
21,000.00	11,514.54	21,221.79	11,703.61	160.57	158.26	-96.55	9,351.81	-1,594.98	1,612.78	1,388.39	224.39	7.187		
21,100.00	11,512.80	21,321.79	11,701.94	162.17	159.86	-96.56	9,451.79	-1,595.83	1,612.73	1,386.10	226.63	7.116		
21,200.00	11,511.06	21,421.79	11,700.28	163.77	161.45	-96.56	9,551.77	-1,596.68	1,612.68	1,383.81	228.87	7.046		
21,300.00	11,509.32	21,521.79	11,698.62	165.37	163.04	-96.56	9,651.76	-1,597.53	1,612.63	1,381.51	231.12	6.978		
21,400.00	11,507.58	21,621.79	11,696.96	166.97	164.64	-96.57	9,751.74	-1,598.38	1,612.58	1,379.22	233.36	6.910		
21,500.00	11,505.84	21,721.79	11,695.30	168.57	166.24	-96.57	9,851.72	-1,599.23	1,612.53	1,376.92	235.61	6.844		
21,600.00	11,504.10	21,821.79	11,693.64	170.17	167.83	-96.57	9,951.70	-1,600.08	1,612.49	1,374.63	237.86	6.779		
21,700.00	11,502.36	21,921.79	11,691.98	171.78	169.43	-96.58	10,051.69	-1,600.93	1,612.44	1,372.33	240.11	6.715		
21,800.00	11,500.62	22,021.79	11,690.32	173.38	171.03	-96.58	10,151.67	-1,601.78	1,612.39	1,370.03	242.36	6.653		
21,802.56	11,500.58	22,023.56	11,690.29	173.42	171.06	-96.58	10,153.44	-1,601.79	1,612.39	1,369.98	242.41	6.652		
21,812.62	11,500.40	22,023.56	11,690.29	173.58	171.06	-96.58	10,153.44	-1,601.79	1,612.42	1,369.94	242.47	6.650 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	2.30	2.30	0.00	0.00	-83.90	231.90	-2,169.74	2,182.10					
100.00	100.00	102.30	102.30	0.13	0.15	-83.90	231.90	-2,169.74	2,182.10	2,181.90	0.20	N/A		
200.00	200.00	202.30	202.30	0.48	0.51	-83.90	231.90	-2,169.74	2,182.10	2,181.40	0.70	3,109.118		
300.00	300.00	302.30	302.30	0.84	0.87	-83.90	231.90	-2,169.74	2,182.10	2,180.89	1.21	1,805.319		
400.00	400.00	402.30	402.30	1.20	1.23	-83.90	231.90	-2,169.74	2,182.10	2,180.38	1.72	1,271.898		
500.00	500.00	502.30	502.30	1.56	1.58	-83.90	231.90	-2,169.74	2,182.10	2,179.87	2.22	981.795		
600.00	600.00	602.30	602.30	1.92	1.94	-83.90	231.90	-2,169.74	2,182.10	2,179.37	2.73	799.449		
700.00	700.00	702.30	702.30	2.28	2.30	-83.90	231.90	-2,169.74	2,182.10	2,178.86	3.24	674.226		
800.00	800.00	802.30	802.30	2.63	2.66	-83.90	231.90	-2,169.74	2,182.10	2,178.35	3.74	582.919		
900.00	900.00	902.30	902.30	2.99	3.02	-83.90	231.90	-2,169.74	2,182.10	2,177.85	4.25	513.393		
1,000.00	1,000.00	1,002.30	1,002.30	3.35	3.38	-83.90	231.90	-2,169.74	2,182.10	2,177.34	4.76	458.684		
1,100.00	1,100.00	1,102.30	1,102.30	3.71	3.73	-83.90	231.90	-2,169.74	2,182.10	2,176.83	5.26	414.512		
1,200.00	1,200.00	1,202.30	1,202.30	4.07	4.09	-83.90	231.90	-2,169.74	2,182.10	2,176.33	5.77	378.101		
1,300.00	1,300.00	1,302.30	1,302.30	4.43	4.45	-83.90	231.90	-2,169.74	2,182.10	2,175.82	6.28	347.570		
1,400.00	1,400.00	1,402.30	1,402.30	4.79	4.81	-83.90	231.90	-2,169.74	2,182.10	2,175.31	6.79	321.601		
1,500.00	1,500.00	1,502.30	1,502.30	5.14	5.17	-83.90	231.90	-2,169.74	2,182.10	2,174.81	7.29	299.243		
1,600.00	1,600.00	1,602.30	1,602.30	5.50	5.53	-83.90	231.90	-2,169.74	2,182.10	2,174.30	7.80	279.791		
1,700.00	1,700.00	1,702.30	1,702.30	5.86	5.89	-83.90	231.90	-2,169.74	2,182.10	2,173.79	8.31	262.714		
1,800.00	1,800.00	1,802.30	1,802.30	6.22	6.24	-83.90	231.90	-2,169.74	2,182.10	2,173.28	8.81	247.602		
1,900.00	1,900.00	1,902.30	1,902.30	6.58	6.60	-83.90	231.90	-2,169.74	2,182.10	2,172.78	9.32	234.134		
2,000.00	2,000.00	2,002.30	2,002.30	6.94	6.96	-83.90	231.90	-2,169.74	2,182.10	2,172.27	9.83	222.055		
2,100.00	2,100.00	2,102.30	2,102.30	7.29	7.32	-83.90	231.90	-2,169.74	2,182.10	2,171.76	10.33	211.161		
2,200.00	2,200.00	2,202.30	2,202.30	7.65	7.68	-83.90	231.90	-2,169.74	2,182.10	2,171.26	10.84	201.287		
2,300.00	2,300.00	2,302.30	2,302.30	8.01	8.04	-83.90	231.90	-2,169.74	2,182.10	2,170.75	11.35	192.294		
2,400.00	2,400.00	2,402.30	2,402.30	8.37	8.39	-83.90	231.90	-2,169.74	2,182.10	2,170.24	11.85	184.071		
2,415.88	2,415.88	2,418.18	2,418.18	8.43	8.45	-83.90	231.90	-2,169.74	2,182.10	2,170.16	11.94	182.829 CC		
2,500.00	2,500.00	2,500.00	2,500.00	8.73	8.74	-83.90	231.90	-2,169.74	2,182.10	2,169.74	12.36	176.606 ES		
2,600.00	2,600.00	2,572.69	2,572.68	9.09	8.99	-83.91	231.47	-2,170.28	2,182.79	2,170.01	12.78	170.731		
2,700.00	2,700.00	2,643.69	2,643.66	9.45	9.23	-83.95	230.22	-2,171.86	2,184.81	2,171.61	13.20	165.459		
2,800.00	2,800.00	2,714.60	2,714.49	9.80	9.47	-84.01	228.15	-2,174.46	2,188.16	2,174.54	13.62	160.660		
2,900.00	2,900.00	2,785.36	2,785.09	10.16	9.71	-84.09	225.28	-2,178.09	2,192.84	2,178.81	14.03	156.256		
3,000.00	3,000.00	2,855.92	2,855.40	10.52	9.94	-84.20	221.60	-2,182.72	2,198.85	2,184.41	14.45	152.214		
3,100.00	3,100.00	2,926.24	2,925.35	10.88	10.18	-84.33	217.13	-2,188.35	2,206.20	2,191.35	14.86	148.505		
3,200.00	3,200.00	2,999.91	2,998.48	11.24	10.43	-84.49	211.59	-2,195.33	2,214.90	2,199.62	15.27	145.008		
3,300.00	3,300.00	3,093.89	3,091.66	11.60	10.76	-84.71	203.97	-2,204.93	2,224.34	2,208.59	15.75	141.220		
3,400.00	3,400.00	3,193.03	3,189.95	11.96	11.11	-84.95	195.93	-2,215.07	2,233.83	2,217.59	16.24	137.513		
3,500.00	3,500.00	3,292.18	3,288.25	12.31	11.46	-85.17	187.88	-2,225.20	2,243.36	2,226.62	16.74	134.011		
3,600.00	3,600.00	3,391.32	3,386.55	12.67	11.82	-85.40	179.84	-2,235.34	2,252.91	2,235.68	17.24	130.698		
3,700.00	3,700.00	3,490.46	3,484.84	13.03	12.18	-85.62	171.80	-2,245.47	2,262.51	2,244.77	17.74	127.561		
3,800.00	3,800.00	3,589.61	3,583.14	13.39	12.55	-85.85	163.75	-2,255.61	2,272.14	2,253.90	18.24	124.587		
3,900.00	3,900.00	3,688.75	3,681.44	13.75	12.91	-86.07	155.71	-2,265.74	2,281.80	2,263.06	18.74	121.764		
4,000.00	4,000.00	3,787.90	3,779.73	14.11	13.28	-86.29	147.66	-2,275.88	2,291.50	2,272.25	19.24	119.083		
4,100.00	4,100.00	3,887.04	3,878.03	14.46	13.66	-86.50	139.62	-2,286.01	2,301.23	2,281.48	19.75	116.533		
4,200.00	4,200.00	3,986.19	3,976.33	14.82	14.03	-86.72	131.58	-2,296.15	2,310.99	2,290.73	20.25	114.106		
4,300.00	4,300.00	4,085.33	4,074.63	15.18	14.41	-86.93	123.53	-2,306.28	2,320.78	2,300.02	20.76	111.794		
4,400.00	4,400.00	4,184.48	4,172.92	15.54	14.79	-87.15	115.49	-2,316.41	2,330.61	2,309.34	21.27	109.589		
4,500.00	4,500.00	4,283.62	4,271.22	15.90	15.17	-87.36	107.45	-2,326.55	2,340.47	2,318.69	21.78	107.484		
4,600.00	4,599.99	4,382.80	4,369.54	16.24	15.55	-87.50	99.40	-2,336.69	2,350.96	2,328.69	22.27	105.560		
4,700.00	4,699.91	4,481.98	4,467.88	16.56	15.93	-87.62	91.36	-2,346.83	2,362.67	2,339.91	22.76	103.825		
4,800.00	4,799.69	4,581.10	4,566.16	16.89	16.32	-87.74	83.31	-2,356.96	2,375.57	2,352.33	23.24	102.207		
4,899.98	4,899.25	4,680.09	4,664.29	17.22	16.70	-87.84	75.28	-2,367.08	2,389.65	2,365.92	23.73	100.699		
5,000.00	4,998.72	4,779.02	4,762.38	17.55	17.09	-87.90	67.26	-2,377.19	2,404.32	2,380.10	24.22	99.268		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	5,098.17	4,877.93	4,860.45	17.88	17.48	116.82	59.23	-2,387.30	2,418.99	2,394.28	24.71	97.885		
5,200.00	5,197.63	4,976.85	4,958.52	18.21	17.87	116.84	51.21	-2,397.41	2,433.66	2,408.45	25.21	96.546		
5,300.00	5,297.08	5,075.76	5,056.58	18.55	18.26	116.86	43.18	-2,407.52	2,448.33	2,422.62	25.70	95.251		
5,400.00	5,396.53	5,174.68	5,154.65	18.89	18.65	116.88	35.16	-2,417.63	2,463.00	2,436.79	26.20	93.997		
5,500.00	5,495.98	5,273.59	5,252.72	19.23	19.04	116.90	27.13	-2,427.75	2,477.67	2,450.96	26.70	92.783		
5,600.00	5,595.44	5,372.51	5,350.79	19.58	19.44	116.92	19.11	-2,437.86	2,492.34	2,465.13	27.21	91.607		
5,700.00	5,694.89	5,471.42	5,448.86	19.92	19.83	116.94	11.08	-2,447.97	2,507.01	2,479.29	27.71	90.469		
5,800.00	5,794.34	5,570.34	5,546.93	20.27	20.22	116.96	3.06	-2,458.08	2,521.68	2,493.46	28.22	89.365		
5,900.00	5,893.79	5,669.25	5,645.00	20.62	20.62	116.98	-4.96	-2,468.19	2,536.35	2,507.62	28.73	88.296		
6,000.00	5,993.24	5,768.17	5,743.07	20.97	21.02	117.00	-12.99	-2,478.30	2,551.02	2,521.78	29.23	87.259		
6,100.00	6,092.70	5,867.08	5,841.13	21.32	21.41	117.01	-21.01	-2,488.41	2,565.69	2,535.94	29.75	86.254		
6,200.00	6,192.15	5,966.00	5,939.20	21.68	21.81	117.03	-29.04	-2,498.52	2,580.36	2,550.10	30.26	85.278		
6,300.00	6,291.60	6,064.91	6,037.27	22.03	22.21	117.05	-37.06	-2,508.63	2,595.03	2,564.26	30.77	84.332		
6,400.00	6,391.05	6,163.82	6,135.34	22.39	22.60	117.07	-45.09	-2,518.75	2,609.70	2,578.42	31.29	83.413		
6,500.00	6,490.51	6,262.74	6,233.41	22.75	23.00	117.09	-53.11	-2,528.86	2,624.38	2,592.57	31.80	82.521		
6,600.00	6,589.96	6,361.65	6,331.48	23.11	23.40	117.10	-61.14	-2,538.97	2,639.05	2,606.73	32.32	81.655		
6,613.87	6,603.75	6,375.37	6,345.08	23.16	23.46	117.11	-62.25	-2,540.37	2,641.08	2,608.69	32.39	81.537		
6,700.00	6,689.50	6,460.63	6,429.61	23.47	23.80	117.27	-69.17	-2,549.09	2,653.28	2,620.44	32.84	80.802		
6,800.00	6,789.26	6,559.75	6,527.88	23.82	24.20	117.39	-77.21	-2,559.22	2,666.34	2,632.99	33.35	79.947		
6,900.00	6,889.17	6,658.92	6,626.21	24.17	24.60	117.45	-85.25	-2,569.35	2,678.21	2,644.34	33.86	79.089		
7,000.00	6,989.15	6,758.10	6,724.54	24.52	25.01	117.44	-93.30	-2,579.49	2,688.89	2,654.52	34.37	78.229		
7,013.85	7,003.00	6,771.83	6,738.15	24.57	25.06	-87.74	-94.41	-2,580.90	2,690.28	2,655.83	34.44	78.109		
7,100.00	7,089.15	6,857.25	6,822.83	24.87	25.41	-87.89	-101.34	-2,589.63	2,698.84	2,663.96	34.88	77.366		
7,200.00	7,189.15	6,956.39	6,921.13	25.22	25.81	-88.07	-109.39	-2,599.76	2,708.81	2,673.41	35.40	76.527		
7,300.00	7,289.15	7,055.54	7,019.43	25.57	26.21	-88.25	-117.43	-2,609.90	2,718.80	2,682.89	35.91	75.711		
7,400.00	7,389.15	7,154.68	7,117.73	25.92	26.62	-88.43	-125.47	-2,620.03	2,728.82	2,692.39	36.42	74.920		
7,500.00	7,489.15	7,253.83	7,216.02	26.27	27.02	-88.60	-133.52	-2,630.17	2,738.86	2,701.92	36.94	74.150		
7,600.00	7,589.15	7,352.97	7,314.32	26.62	27.42	-88.78	-141.56	-2,640.30	2,748.93	2,711.48	37.45	73.402		
7,700.00	7,689.15	7,452.12	7,412.62	26.97	27.83	-88.95	-149.60	-2,650.44	2,759.02	2,721.06	37.96	72.675		
7,800.00	7,789.15	7,551.26	7,510.91	27.32	28.23	-89.12	-157.65	-2,660.57	2,769.14	2,730.67	38.48	71.968		
7,900.00	7,889.15	7,650.41	7,609.21	27.67	28.64	-89.29	-165.69	-2,670.71	2,779.29	2,740.29	38.99	71.279		
8,000.00	7,989.15	7,749.55	7,707.51	28.03	29.04	-89.46	-173.73	-2,680.84	2,789.45	2,749.95	39.51	70.609		
8,100.00	8,089.15	7,848.70	7,805.80	28.38	29.45	-89.63	-181.78	-2,690.97	2,799.64	2,759.62	40.02	69.957		
8,200.00	8,189.15	7,947.84	7,904.10	28.73	29.85	-89.79	-189.82	-2,701.11	2,809.86	2,769.33	40.53	69.321		
8,300.00	8,289.15	8,048.21	8,003.61	29.08	30.26	-89.96	-197.96	-2,711.37	2,820.10	2,779.04	41.05	68.695		
8,400.00	8,389.15	8,285.83	8,240.03	29.43	31.19	-90.26	-212.59	-2,729.80	2,827.89	2,785.88	42.01	67.322		
8,500.00	8,489.15	8,525.48	8,479.48	29.79	32.03	-90.37	-218.07	-2,736.70	2,830.78	2,787.92	42.86	66.051		
8,600.00	8,589.15	8,637.46	8,591.45	30.14	32.39	-90.37	-218.10	-2,736.74	2,830.80	2,787.43	43.36	65.279		
8,700.00	8,689.15	8,737.46	8,691.45	30.49	32.71	-90.37	-218.10	-2,736.74	2,830.80	2,786.95	43.85	64.562		
8,800.00	8,789.15	8,837.46	8,791.45	30.85	33.03	-90.37	-218.10	-2,736.74	2,830.80	2,786.47	44.33	63.859		
8,900.00	8,889.15	8,937.46	8,891.45	31.20	33.35	-90.37	-218.10	-2,736.74	2,830.80	2,785.99	44.81	63.171		
9,000.00	8,989.15	9,037.46	8,991.45	31.55	33.68	-90.37	-218.10	-2,736.74	2,830.80	2,785.50	45.29	62.497		
9,100.00	9,089.15	9,137.46	9,091.45	31.91	34.00	-90.37	-218.10	-2,736.74	2,830.80	2,785.02	45.78	61.837		
9,200.00	9,189.15	9,237.46	9,191.45	32.26	34.32	-90.37	-218.10	-2,736.74	2,830.80	2,784.54	46.26	61.190		
9,300.00	9,289.15	9,337.46	9,291.45	32.61	34.65	-90.37	-218.10	-2,736.74	2,830.80	2,784.05	46.75	60.555		
9,400.00	9,389.15	9,437.46	9,391.45	32.97	34.97	-90.37	-218.10	-2,736.74	2,830.80	2,783.57	47.23	59.933		
9,500.00	9,489.15	9,537.46	9,491.45	33.32	35.29	-90.37	-218.10	-2,736.74	2,830.80	2,783.08	47.72	59.323		
9,600.00	9,589.15	9,637.46	9,591.45	33.67	35.62	-90.37	-218.10	-2,736.74	2,830.80	2,782.59	48.20	58.725		
9,700.00	9,689.15	9,737.46	9,691.45	34.03	35.95	-90.37	-218.10	-2,736.74	2,830.80	2,782.11	48.69	58.138		
9,800.00	9,789.15	9,837.46	9,791.45	34.38	36.27	-90.37	-218.10	-2,736.74	2,830.80	2,781.62	49.18	57.562		
9,900.00	9,889.15	9,937.46	9,891.45	34.74	36.60	-90.37	-218.10	-2,736.74	2,830.80	2,781.13	49.67	56.997		
10,000.00	9,989.15	10,037.46	9,991.45	35.09	36.93	-90.37	-218.10	-2,736.74	2,830.80	2,780.64	50.15	56.443		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	10,089.15	10,137.46	10,091.45	35.44	37.26	-90.37	-218.10	-2,736.74	2,830.80	2,780.16	50.64	55.899		
10,200.00	10,189.15	10,237.46	10,191.45	35.80	37.59	-90.37	-218.10	-2,736.74	2,830.80	2,779.67	51.13	55.365		
10,300.00	10,289.15	10,337.46	10,291.45	36.15	37.92	-90.37	-218.10	-2,736.74	2,830.80	2,779.18	51.62	54.841		
10,400.00	10,389.15	10,437.46	10,391.45	36.51	38.25	-90.37	-218.10	-2,736.74	2,830.80	2,778.69	52.11	54.326		
10,500.00	10,489.15	10,537.46	10,491.45	36.86	38.58	-90.37	-218.10	-2,736.74	2,830.80	2,778.20	52.60	53.820		
10,600.00	10,589.15	10,637.46	10,591.45	37.22	38.91	-90.37	-218.10	-2,736.74	2,830.80	2,777.71	53.09	53.323		
10,700.00	10,689.15	10,737.46	10,691.45	37.57	39.24	-90.37	-218.10	-2,736.74	2,830.80	2,777.22	53.58	52.836		
10,800.00	10,789.15	10,837.46	10,791.45	37.93	39.57	-90.37	-218.10	-2,736.74	2,830.80	2,776.73	54.07	52.356		
10,900.00	10,889.15	10,937.46	10,891.45	38.28	39.91	-90.37	-218.10	-2,736.74	2,830.80	2,776.24	54.56	51.885		
11,000.00	10,989.15	11,037.46	10,991.45	38.64	40.24	-90.37	-218.10	-2,736.74	2,830.80	2,775.75	55.05	51.422		
11,108.85	11,098.00	11,146.31	11,100.30	39.02	40.60	-90.37	-218.10	-2,736.74	2,830.80	2,775.21	55.58	50.928		
11,150.00	11,139.12	11,187.42	11,141.42	39.17	40.74	-89.88	-218.10	-2,736.74	2,830.79	2,775.01	55.78	50.745		
11,200.00	11,188.77	11,237.11	11,191.10	39.34	40.91	-89.98	-217.63	-2,736.74	2,830.79	2,774.77	56.02	50.530		
11,214.53	11,203.09	11,251.59	11,205.56	39.39	40.95	-90.02	-216.87	-2,736.75	2,830.79	2,774.70	56.09	50.470		
11,250.00	11,237.73	11,287.09	11,240.89	39.50	41.06	-90.10	-213.45	-2,736.78	2,830.79	2,774.54	56.25	50.328		
11,300.00	11,285.62	11,337.60	11,290.64	39.66	41.21	-90.22	-204.82	-2,736.85	2,830.80	2,774.34	56.46	50.137		
11,350.00	11,332.09	11,388.65	11,339.95	39.81	41.35	-90.34	-191.69	-2,736.96	2,830.82	2,774.16	56.66	49.959		
11,400.00	11,376.78	11,440.25	11,388.41	39.95	41.47	-90.46	-174.01	-2,737.11	2,830.85	2,774.00	56.85	49.793		
11,450.00	11,419.35	11,492.40	11,435.57	40.08	41.58	-90.57	-151.79	-2,737.30	2,830.89	2,773.86	57.03	49.639		
11,500.00	11,459.47	11,545.10	11,480.97	40.20	41.68	-90.68	-125.07	-2,737.53	2,830.93	2,773.74	57.20	49.495		
11,550.00	11,496.84	11,598.35	11,524.16	40.32	41.75	-90.79	-93.96	-2,737.79	2,830.98	2,773.63	57.35	49.360		
11,600.00	11,531.17	11,652.12	11,564.65	40.44	41.82	-90.89	-58.61	-2,738.09	2,831.03	2,773.53	57.50	49.233		
11,650.00	11,562.21	11,706.41	11,601.99	40.55	41.86	-90.98	-19.23	-2,738.43	2,831.09	2,773.44	57.65	49.112		
11,700.00	11,589.71	11,761.17	11,635.71	40.67	41.89	-91.06	23.89	-2,738.79	2,831.13	2,773.35	57.79	48.994		
11,750.00	11,613.47	11,816.37	11,665.37	40.79	41.90	-91.14	70.42	-2,739.19	2,831.18	2,773.26	57.92	48.878		
11,800.00	11,633.31	11,871.97	11,690.59	40.91	41.90	-91.21	119.95	-2,739.61	2,831.22	2,773.16	58.06	48.763		
11,850.00	11,649.08	11,927.92	11,711.00	41.04	41.89	-91.26	172.01	-2,740.05	2,831.25	2,773.05	58.20	48.647		
11,900.00	11,660.65	11,984.16	11,726.31	41.16	41.86	-91.31	226.11	-2,740.51	2,831.27	2,772.92	58.34	48.529		
11,950.00	11,667.94	12,040.63	11,736.27	41.29	41.83	-91.34	281.66	-2,740.98	2,831.27	2,772.79	58.49	48.408		
12,000.00	11,670.89	12,097.25	11,740.71	41.42	41.80	-91.37	338.08	-2,741.46	2,831.27	2,772.63	58.64	48.284		
12,018.82	11,670.87	12,118.59	11,740.94	41.47	41.78	-91.37	359.42	-2,741.64	2,831.26	2,772.57	58.70	48.236		
12,100.00	11,669.46	12,200.41	11,739.54	41.72	41.74	-91.37	441.22	-2,742.34	2,831.21	2,772.24	58.97	48.007		
12,200.00	11,667.72	12,300.41	11,737.80	42.08	42.04	-91.37	541.20	-2,743.19	2,831.16	2,771.76	59.40	47.662		
12,300.00	11,665.98	12,400.41	11,736.06	42.50	42.39	-91.37	641.18	-2,744.03	2,831.10	2,771.18	59.91	47.252		
12,400.00	11,664.24	12,500.41	11,734.32	42.98	42.80	-91.37	741.16	-2,744.88	2,831.04	2,770.53	60.51	46.783		
12,500.00	11,662.50	12,600.41	11,732.58	43.51	43.26	-91.37	841.15	-2,745.73	2,830.98	2,769.78	61.20	46.260		
12,600.00	11,660.76	12,700.41	11,730.84	44.11	43.77	-91.37	941.13	-2,746.58	2,830.92	2,768.96	61.96	45.689		
12,700.00	11,659.01	12,800.41	11,729.10	44.75	44.34	-91.37	1,041.11	-2,747.43	2,830.86	2,768.06	62.80	45.077		
12,800.00	11,657.27	12,900.41	11,727.36	45.45	44.96	-91.37	1,141.09	-2,748.28	2,830.81	2,767.09	63.72	44.428		
12,900.00	11,655.53	13,000.41	11,725.62	46.19	45.62	-91.37	1,241.07	-2,749.13	2,830.75	2,766.04	64.70	43.749		
13,000.00	11,653.79	13,100.41	11,723.87	46.98	46.33	-91.37	1,341.05	-2,749.98	2,830.69	2,764.93	65.76	43.046		
13,100.00	11,652.05	13,200.41	11,722.13	47.82	47.09	-91.37	1,441.03	-2,750.83	2,830.63	2,763.75	66.88	42.325		
13,200.00	11,650.31	13,300.41	11,720.39	48.70	47.89	-91.37	1,541.01	-2,751.67	2,830.57	2,762.51	68.06	41.589		
13,300.00	11,648.57	13,400.41	11,718.65	49.61	48.74	-91.37	1,641.00	-2,752.52	2,830.51	2,761.21	69.30	40.844		
13,400.00	11,646.83	13,500.41	11,716.91	50.57	49.62	-91.37	1,740.98	-2,753.37	2,830.45	2,759.86	70.60	40.093		
13,500.00	11,645.09	13,600.41	11,715.17	51.55	50.54	-91.37	1,840.96	-2,754.22	2,830.40	2,758.45	71.95	39.341		
13,600.00	11,643.35	13,700.41	11,713.43	52.58	51.50	-91.37	1,940.94	-2,755.07	2,830.34	2,756.99	73.34	38.590		
13,700.00	11,641.61	13,800.41	11,711.69	53.63	52.49	-91.37	2,040.92	-2,755.92	2,830.28	2,755.49	74.79	37.844		
13,800.00	11,639.87	13,900.41	11,709.95	54.71	53.51	-91.37	2,140.90	-2,756.77	2,830.22	2,753.94	76.28	37.104		
13,900.00	11,638.13	14,000.41	11,708.21	55.82	54.56	-91.37	2,240.88	-2,757.62	2,830.16	2,752.35	77.81	36.374		
14,000.00	11,636.39	14,100.41	11,706.47	56.96	55.65	-91.37	2,340.86	-2,758.46	2,830.10	2,750.73	79.38	35.654		
14,100.00	11,634.65	14,200.41	11,704.73	58.12	56.75	-91.37	2,440.85	-2,759.31	2,830.04	2,749.06	80.98	34.946		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,632.91	14,300.41	11,702.99	59.31	57.89	-91.37	2,540.83	-2,760.16	2,829.99	2,747.36	82.63	34.251		
14,300.00	11,631.17	14,400.41	11,701.24	60.52	59.05	-91.37	2,640.81	-2,761.01	2,829.93	2,745.63	84.30	33.570		
14,400.00	11,629.42	14,500.41	11,699.50	61.74	60.23	-91.37	2,740.79	-2,761.86	2,829.87	2,743.86	86.00	32.904		
14,500.00	11,627.68	14,600.41	11,697.76	62.99	61.43	-91.37	2,840.77	-2,762.71	2,829.81	2,742.07	87.74	32.253		
14,600.00	11,625.94	14,700.41	11,696.02	64.26	62.66	-91.37	2,940.75	-2,763.56	2,829.75	2,740.25	89.50	31.617		
14,700.00	11,624.20	14,800.41	11,694.28	65.54	63.90	-91.37	3,040.73	-2,764.41	2,829.69	2,738.41	91.29	30.998		
14,800.00	11,622.46	14,900.41	11,692.54	66.84	65.16	-91.37	3,140.71	-2,765.25	2,829.63	2,736.54	93.10	30.394		
14,900.00	11,620.72	15,000.41	11,690.80	68.15	66.44	-91.37	3,240.70	-2,766.10	2,829.58	2,734.64	94.93	29.806		
15,000.00	11,618.98	15,100.41	11,689.06	69.48	67.73	-91.37	3,340.68	-2,766.95	2,829.52	2,732.73	96.79	29.234		
15,100.00	11,617.24	15,200.41	11,687.32	70.82	69.04	-91.37	3,440.66	-2,767.80	2,829.46	2,730.79	98.67	28.677		
15,200.00	11,615.50	15,300.41	11,685.58	72.18	70.36	-91.37	3,540.64	-2,768.65	2,829.40	2,728.84	100.56	28.136		
15,300.00	11,613.76	15,400.41	11,683.84	73.54	71.70	-91.37	3,640.62	-2,769.50	2,829.34	2,726.87	102.47	27.610		
15,400.00	11,612.02	15,500.41	11,682.10	74.92	73.05	-91.37	3,740.60	-2,770.35	2,829.28	2,724.88	104.41	27.099		
15,500.00	11,610.28	15,600.41	11,680.36	76.31	74.41	-91.37	3,840.58	-2,771.20	2,829.23	2,722.87	106.35	26.602		
15,600.00	11,608.54	15,700.41	11,678.62	77.71	75.78	-91.37	3,940.56	-2,772.04	2,829.17	2,720.85	108.31	26.120		
15,700.00	11,606.80	15,800.41	11,676.87	79.12	77.17	-91.37	4,040.54	-2,772.89	2,829.11	2,718.82	110.29	25.651		
15,800.00	11,605.06	15,900.41	11,675.13	80.54	78.56	-91.37	4,140.53	-2,773.74	2,829.05	2,716.77	112.28	25.196		
15,900.00	11,603.32	16,000.41	11,673.39	81.97	79.96	-91.37	4,240.51	-2,774.59	2,828.99	2,714.70	114.29	24.754		
16,000.00	11,601.57	16,100.41	11,671.65	83.40	81.38	-91.37	4,340.49	-2,775.44	2,828.93	2,712.63	116.30	24.324		
16,100.00	11,599.83	16,200.41	11,669.91	84.84	82.80	-91.37	4,440.47	-2,776.29	2,828.87	2,710.54	118.33	23.907		
16,200.00	11,598.09	16,300.41	11,668.17	86.30	84.23	-91.37	4,540.45	-2,777.14	2,828.82	2,708.45	120.37	23.501		
16,300.00	11,596.35	16,400.41	11,666.43	87.75	85.67	-91.37	4,640.43	-2,777.99	2,828.76	2,706.34	122.42	23.107		
16,400.00	11,594.61	16,500.40	11,664.69	89.22	87.11	-91.37	4,740.41	-2,778.84	2,828.70	2,704.22	124.48	22.724		
16,500.00	11,592.87	16,600.40	11,662.95	90.69	88.57	-91.37	4,840.39	-2,779.68	2,828.64	2,702.09	126.55	22.352		
16,600.00	11,591.13	16,700.40	11,661.21	92.17	90.03	-91.37	4,940.38	-2,780.53	2,828.58	2,699.96	128.63	21.991		
16,700.00	11,589.39	16,800.40	11,659.47	93.65	91.49	-91.37	5,040.36	-2,781.38	2,828.52	2,697.81	130.71	21.639		
16,800.00	11,587.65	16,900.40	11,657.73	95.14	92.96	-91.37	5,140.34	-2,782.23	2,828.46	2,695.66	132.81	21.297		
16,900.00	11,585.91	17,000.40	11,655.99	96.63	94.44	-91.37	5,240.32	-2,783.08	2,828.41	2,693.49	134.91	20.965		
17,000.00	11,584.17	17,100.40	11,654.25	98.13	95.93	-91.37	5,340.30	-2,783.93	2,828.35	2,691.32	137.02	20.641		
17,100.00	11,582.43	17,200.40	11,652.50	99.64	97.42	-91.37	5,440.28	-2,784.78	2,828.29	2,689.15	139.14	20.327		
17,200.00	11,580.69	17,300.40	11,650.76	101.14	98.91	-91.37	5,540.26	-2,785.63	2,828.23	2,686.96	141.27	20.021		
17,300.00	11,578.95	17,400.40	11,649.02	102.66	100.41	-91.37	5,640.24	-2,786.47	2,828.17	2,684.78	143.40	19.723		
17,400.00	11,577.21	17,500.40	11,647.28	104.17	101.91	-91.37	5,740.23	-2,787.32	2,828.11	2,682.58	145.53	19.433		
17,500.00	11,575.47	17,600.40	11,645.54	105.70	103.42	-91.37	5,840.21	-2,788.17	2,828.05	2,680.38	147.68	19.150		
17,600.00	11,573.73	17,700.40	11,643.80	107.22	104.94	-91.37	5,940.19	-2,789.02	2,828.00	2,678.17	149.83	18.875		
17,700.00	11,571.98	17,800.40	11,642.06	108.75	106.45	-91.37	6,040.17	-2,789.87	2,827.94	2,675.96	151.98	18.607		
17,800.00	11,570.24	17,900.40	11,640.32	110.28	107.97	-91.37	6,140.15	-2,790.72	2,827.88	2,673.74	154.14	18.346		
17,900.00	11,568.50	18,000.40	11,638.58	111.82	109.50	-91.37	6,240.13	-2,791.57	2,827.82	2,671.51	156.31	18.091		
18,000.00	11,566.76	18,100.40	11,636.84	113.36	111.03	-91.37	6,340.11	-2,792.42	2,827.76	2,669.29	158.48	17.843		
18,100.00	11,565.02	18,200.40	11,635.10	114.90	112.56	-91.37	6,440.09	-2,793.26	2,827.70	2,667.05	160.65	17.602		
18,200.00	11,563.28	18,300.40	11,633.36	116.44	114.09	-91.37	6,540.08	-2,794.11	2,827.65	2,664.82	162.83	17.366		
18,300.00	11,561.54	18,400.40	11,631.62	117.99	115.63	-91.37	6,640.06	-2,794.96	2,827.59	2,662.57	165.01	17.136		
18,400.00	11,559.80	18,500.40	11,629.88	119.54	117.17	-91.37	6,740.04	-2,795.81	2,827.53	2,660.33	167.20	16.911		
18,500.00	11,558.06	18,600.40	11,628.13	121.10	118.72	-91.37	6,840.02	-2,796.66	2,827.47	2,658.08	169.39	16.692		
18,600.00	11,556.32	18,700.40	11,626.39	122.65	120.27	-91.37	6,940.00	-2,797.51	2,827.41	2,655.82	171.59	16.478		
18,700.00	11,554.58	18,800.40	11,624.65	124.21	121.82	-91.37	7,039.98	-2,798.36	2,827.35	2,653.57	173.79	16.269		
18,800.00	11,552.84	18,900.40	11,622.91	125.77	123.37	-91.37	7,139.96	-2,799.21	2,827.29	2,651.31	175.99	16.065		
18,900.00	11,551.10	19,000.40	11,621.17	127.33	124.92	-91.37	7,239.94	-2,800.05	2,827.24	2,649.04	178.19	15.866		
19,000.00	11,549.36	19,100.40	11,619.43	128.90	126.48	-91.37	7,339.93	-2,800.90	2,827.18	2,646.78	180.40	15.672		
19,100.00	11,547.62	19,200.40	11,617.69	130.47	128.04	-91.37	7,439.91	-2,801.75	2,827.12	2,644.50	182.61	15.481		
19,200.00	11,545.88	19,300.40	11,615.95	132.04	129.60	-91.37	7,539.89	-2,802.60	2,827.06	2,642.23	184.83	15.296		
19,300.00	11,544.14	19,400.40	11,614.21	133.61	131.17	-91.37	7,639.87	-2,803.45	2,827.00	2,639.95	187.05	15.114		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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				
19,400.00	11,542.39	19,500.40	11,612.47	135.18	132.73	-91.37	7,739.85	-2,804.30	2,826.94	2,637.68	189.27	14.936				
19,500.00	11,540.65	19,600.40	11,610.73	136.76	134.30	-91.37	7,839.83	-2,805.15	2,826.88	2,635.39	191.49	14.762				
19,600.00	11,538.91	19,700.40	11,608.99	138.33	135.87	-91.37	7,939.81	-2,806.00	2,826.83	2,633.11	193.72	14.593				
19,700.00	11,537.17	19,800.40	11,607.25	139.91	137.45	-91.37	8,039.79	-2,806.84	2,826.77	2,630.82	195.95	14.426				
19,800.00	11,535.43	19,900.40	11,605.51	141.49	139.02	-91.37	8,139.78	-2,807.69	2,826.71	2,628.53	198.18	14.264				
19,900.00	11,533.69	20,000.40	11,603.76	143.08	140.60	-91.37	8,239.76	-2,808.54	2,826.65	2,626.24	200.41	14.104				
20,000.00	11,531.95	20,100.40	11,602.02	144.66	142.17	-91.37	8,339.74	-2,809.39	2,826.59	2,623.95	202.65	13.948				
20,100.00	11,530.21	20,200.40	11,600.28	146.24	143.75	-91.37	8,439.72	-2,810.24	2,826.53	2,621.65	204.88	13.796				
20,200.00	11,528.47	20,300.40	11,598.54	147.83	145.33	-91.37	8,539.70	-2,811.09	2,826.48	2,619.35	207.12	13.646				
20,300.00	11,526.73	20,400.40	11,596.80	149.42	146.92	-91.37	8,639.68	-2,811.94	2,826.42	2,617.05	209.37	13.500				
20,400.00	11,524.99	20,500.40	11,595.06	151.01	148.50	-91.37	8,739.66	-2,812.79	2,826.36	2,614.75	211.61	13.356				
20,500.00	11,523.25	20,600.40	11,593.32	152.60	150.09	-91.37	8,839.64	-2,813.64	2,826.30	2,612.44	213.86	13.216				
20,600.00	11,521.51	20,700.40	11,591.58	154.19	151.67	-91.37	8,939.63	-2,814.48	2,826.24	2,610.14	216.11	13.078				
20,700.00	11,519.77	20,800.40	11,589.84	155.78	153.26	-91.37	9,039.61	-2,815.33	2,826.18	2,607.83	218.36	12.943				
20,800.00	11,518.03	20,900.40	11,588.10	157.38	154.85	-91.37	9,139.59	-2,816.18	2,826.12	2,605.52	220.61	12.811				
20,900.00	11,516.29	21,000.40	11,586.36	158.97	156.44	-91.37	9,239.57	-2,817.03	2,826.07	2,603.21	222.86	12.681				
21,000.00	11,514.54	21,100.40	11,584.62	160.57	158.03	-91.37	9,339.55	-2,817.88	2,826.01	2,600.89	225.12	12.554				
21,100.00	11,512.80	21,200.40	11,582.88	162.17	159.63	-91.37	9,439.53	-2,818.73	2,825.95	2,598.58	227.37	12.429				
21,200.00	11,511.06	21,300.40	11,581.13	163.77	161.22	-91.38	9,539.51	-2,819.58	2,825.89	2,596.26	229.63	12.306				
21,300.00	11,509.32	21,400.40	11,579.39	165.37	162.82	-91.38	9,639.49	-2,820.43	2,825.83	2,593.94	231.89	12.186				
21,400.00	11,507.58	21,500.40	11,577.65	166.97	164.41	-91.38	9,739.48	-2,821.27	2,825.77	2,591.62	234.15	12.068				
21,500.00	11,505.84	21,600.40	11,575.91	168.57	166.01	-91.38	9,839.46	-2,822.12	2,825.71	2,589.30	236.41	11.952				
21,600.00	11,504.10	21,700.40	11,574.17	170.17	167.61	-91.38	9,939.44	-2,822.97	2,825.66	2,586.98	238.68	11.839				
21,700.00	11,502.36	21,800.40	11,572.43	171.78	169.21	-91.38	10,039.42	-2,823.82	2,825.60	2,584.65	240.94	11.727				
21,792.60	11,500.75	21,893.00	11,570.82	173.26	170.69	-91.38	10,132.00	-2,824.61	2,825.54	2,582.50	243.04	11.626				
21,800.00	11,500.62	21,898.12	11,570.73	173.38	170.77	-91.38	10,137.12	-2,824.65	2,825.54	2,582.35	243.19	11.619				
21,812.62	11,500.40	21,898.12	11,570.73	173.58	170.77	-91.38	10,137.12	-2,824.65	2,825.57	2,582.22	243.35	11.611 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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	4.50	4.50	0.00	0.01	-83.79	232.28	-2,134.74	2,147.34					
100.00	100.00	104.50	104.50	0.13	0.16	-83.79	232.28	-2,134.74	2,147.34	2,147.14	0.20	N/A		
200.00	200.00	204.50	204.50	0.48	0.52	-83.79	232.28	-2,134.74	2,147.34	2,146.63	0.71	3,034.806		
300.00	300.00	304.50	304.50	0.84	0.87	-83.79	232.28	-2,134.74	2,147.34	2,146.13	1.21	1,768.271		
400.00	400.00	404.50	404.50	1.20	1.23	-83.79	232.28	-2,134.74	2,147.34	2,145.62	1.72	1,247.536		
500.00	500.00	504.50	504.50	1.56	1.59	-83.79	232.28	-2,134.74	2,147.34	2,145.11	2.23	963.717		
600.00	600.00	604.50	604.50	1.92	1.95	-83.79	232.28	-2,134.74	2,147.34	2,144.60	2.74	785.099		
700.00	700.00	704.50	704.50	2.28	2.31	-83.79	232.28	-2,134.74	2,147.34	2,144.10	3.24	662.338		
800.00	800.00	804.50	804.50	2.63	2.67	-83.79	232.28	-2,134.74	2,147.34	2,143.59	3.75	572.776		
900.00	900.00	904.50	904.50	2.99	3.03	-83.79	232.28	-2,134.74	2,147.34	2,143.08	4.26	504.550		
1,000.00	1,000.00	1,004.50	1,004.50	3.35	3.38	-83.79	232.28	-2,134.74	2,147.34	2,142.58	4.76	450.847		
1,100.00	1,100.00	1,104.50	1,104.50	3.71	3.74	-83.79	232.28	-2,134.74	2,147.34	2,142.07	5.27	407.476		
1,200.00	1,200.00	1,204.50	1,204.50	4.07	4.10	-83.79	232.28	-2,134.74	2,147.34	2,141.56	5.78	371.718		
1,300.00	1,300.00	1,304.50	1,304.50	4.43	4.46	-83.79	232.28	-2,134.74	2,147.34	2,141.06	6.28	341.729		
1,400.00	1,400.00	1,404.50	1,404.50	4.79	4.82	-83.79	232.28	-2,134.74	2,147.34	2,140.55	6.79	316.218		
1,500.00	1,500.00	1,504.50	1,504.50	5.14	5.18	-83.79	232.28	-2,134.74	2,147.34	2,140.04	7.30	294.251		
1,600.00	1,600.00	1,604.50	1,604.50	5.50	5.53	-83.79	232.28	-2,134.74	2,147.34	2,139.54	7.80	275.137		
1,700.00	1,700.00	1,704.50	1,704.50	5.86	5.89	-83.79	232.28	-2,134.74	2,147.34	2,139.03	8.31	258.356		
1,800.00	1,800.00	1,804.50	1,804.50	6.22	6.25	-83.79	232.28	-2,134.74	2,147.34	2,138.52	8.82	243.504		
1,900.00	1,900.00	1,904.50	1,904.50	6.58	6.61	-83.79	232.28	-2,134.74	2,147.34	2,138.01	9.33	230.266		
2,000.00	2,000.00	2,004.50	2,004.50	6.94	6.97	-83.79	232.28	-2,134.74	2,147.34	2,137.51	9.83	218.394		
2,100.00	2,100.00	2,104.50	2,104.50	7.29	7.33	-83.79	232.28	-2,134.74	2,147.34	2,137.00	10.34	207.686		
2,200.00	2,200.00	2,204.50	2,204.50	7.65	7.69	-83.79	232.28	-2,134.74	2,147.34	2,136.49	10.85	197.978		
2,300.00	2,300.00	2,304.50	2,304.50	8.01	8.04	-83.79	232.28	-2,134.74	2,147.34	2,135.99	11.35	189.138		
2,400.00	2,400.00	2,404.50	2,404.50	8.37	8.40	-83.79	232.28	-2,134.74	2,147.34	2,135.48	11.86	181.054		
2,500.00	2,500.00	2,504.50	2,504.50	8.73	8.76	-83.79	232.28	-2,134.74	2,147.34	2,134.97	12.37	173.632		
2,600.00	2,600.00	2,604.50	2,604.50	9.09	9.12	-83.79	232.28	-2,134.74	2,147.34	2,134.47	12.87	166.795		
2,700.00	2,700.00	2,704.50	2,704.50	9.45	9.48	-83.79	232.28	-2,134.74	2,147.34	2,133.96	13.38	160.476		
2,800.00	2,800.00	2,804.50	2,804.50	9.80	9.84	-83.79	232.28	-2,134.74	2,147.34	2,133.45	13.89	154.618		
2,900.00	2,900.00	2,904.50	2,904.50	10.16	10.19	-83.79	232.28	-2,134.74	2,147.34	2,132.94	14.40	149.172		
2,915.10	2,915.10	2,919.60	2,919.60	10.22	10.25	-83.79	232.28	-2,134.74	2,147.34	2,132.87	14.47	148.384 CC		
3,000.00	3,000.00	3,000.00	3,000.00	10.52	10.54	-83.79	232.28	-2,134.74	2,147.34	2,132.45	14.89	144.209 ES		
3,100.00	3,100.00	3,082.96	3,082.96	10.88	10.82	-83.81	231.53	-2,135.24	2,147.86	2,132.52	15.34	139.983		
3,200.00	3,200.00	3,162.28	3,162.23	11.24	11.08	-83.87	229.41	-2,136.65	2,149.35	2,133.57	15.78	136.206		
3,300.00	3,300.00	3,241.46	3,241.30	11.60	11.34	-83.97	225.93	-2,138.97	2,151.80	2,135.59	16.21	132.713		
3,400.00	3,400.00	3,320.43	3,320.05	11.96	11.60	-84.11	221.10	-2,142.19	2,155.23	2,138.58	16.65	129.468		
3,500.00	3,500.00	3,400.09	3,399.36	12.31	11.87	-84.28	214.86	-2,146.35	2,159.64	2,142.56	17.08	126.434		
3,600.00	3,600.00	3,498.32	3,497.05	12.67	12.20	-84.52	206.32	-2,152.05	2,164.58	2,147.02	17.57	123.229		
3,700.00	3,700.00	3,597.77	3,595.96	13.03	12.53	-84.77	197.66	-2,157.82	2,169.57	2,151.51	18.06	120.162		
3,800.00	3,800.00	3,697.23	3,694.87	13.39	12.87	-85.01	189.01	-2,163.58	2,174.59	2,156.04	18.55	117.246		
3,900.00	3,900.00	3,796.68	3,793.77	13.75	13.22	-85.25	180.36	-2,169.35	2,179.65	2,160.61	19.04	114.471		
4,000.00	4,000.00	3,896.13	3,892.68	14.11	13.56	-85.49	171.71	-2,175.12	2,184.75	2,165.21	19.54	111.828		
4,100.00	4,100.00	3,995.58	3,991.59	14.46	13.91	-85.72	163.06	-2,180.89	2,189.89	2,169.85	20.03	109.310		
4,200.00	4,200.00	4,095.03	4,090.49	14.82	14.26	-85.96	154.41	-2,186.66	2,195.06	2,174.53	20.53	106.907		
4,300.00	4,300.00	4,194.49	4,189.40	15.18	14.61	-86.20	145.76	-2,192.42	2,200.28	2,179.24	21.03	104.613		
4,400.00	4,400.00	4,293.94	4,288.31	15.54	14.97	-86.43	137.10	-2,198.19	2,205.52	2,183.99	21.53	102.422		
4,500.00	4,500.00	4,393.39	4,387.21	15.90	15.33	-86.66	128.45	-2,203.96	2,210.81	2,188.78	22.04	100.327		
4,600.00	4,599.99	4,492.90	4,486.18	16.24	15.69	-86.89	119.80	-2,209.73	2,216.75	2,194.23	22.53	98.404		
4,700.00	4,699.91	4,592.48	4,585.22	16.56	16.05	-87.12	111.13	-2,215.50	2,223.95	2,200.95	23.01	96.664		
4,800.00	4,799.69	4,692.07	4,684.26	16.89	16.41	-87.35	102.47	-2,221.28	2,232.39	2,208.90	23.49	95.041		
4,899.98	4,899.25	4,791.59	4,783.23	17.22	16.78	-87.58	93.81	-2,227.05	2,242.03	2,218.06	23.97	93.527		
5,000.00	4,998.72	4,891.07	4,882.17	17.55	17.14	-87.81	85.16	-2,232.82	2,252.29	2,227.83	24.46	92.088		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	5,098.17	4,990.55	4,981.10	17.88	17.51	117.66	76.50	-2,238.59	2,262.55	2,237.60	24.95	90.697		
5,200.00	5,197.63	5,090.02	5,080.03	18.21	17.88	117.67	67.85	-2,244.36	2,272.80	2,247.37	25.44	89.350		
5,300.00	5,297.08	5,189.49	5,178.95	18.55	18.24	117.67	59.20	-2,250.13	2,283.06	2,257.13	25.93	88.046		
5,400.00	5,396.53	5,288.96	5,277.88	18.89	18.62	117.68	50.55	-2,255.90	2,293.32	2,266.89	26.43	86.784		
5,500.00	5,495.98	5,388.43	5,376.81	19.23	18.99	117.69	41.89	-2,261.67	2,303.57	2,276.65	26.92	85.561		
5,600.00	5,595.44	5,487.91	5,475.73	19.58	19.36	117.69	33.24	-2,267.43	2,313.83	2,286.41	27.42	84.376		
5,700.00	5,694.89	5,587.38	5,574.66	19.92	19.73	117.70	24.59	-2,273.20	2,324.08	2,296.16	27.92	83.228		
5,800.00	5,794.34	5,686.85	5,673.59	20.27	20.11	117.71	15.93	-2,278.97	2,334.34	2,305.91	28.43	82.115		
5,900.00	5,893.79	5,786.32	5,772.51	20.62	20.48	117.72	7.28	-2,284.74	2,344.60	2,315.66	28.93	81.036		
6,000.00	5,993.24	5,885.80	5,871.44	20.97	20.86	117.72	-1.37	-2,290.51	2,354.85	2,325.41	29.44	79.990		
6,100.00	6,092.70	5,985.27	5,970.37	21.32	21.23	117.73	-10.03	-2,296.28	2,365.11	2,335.16	29.95	78.975		
6,200.00	6,192.15	6,084.74	6,069.30	21.68	21.61	117.74	-18.68	-2,302.05	2,375.37	2,344.91	30.46	77.990		
6,300.00	6,291.60	6,184.21	6,168.22	22.03	21.99	117.74	-27.33	-2,307.82	2,385.62	2,354.65	30.97	77.034		
6,400.00	6,391.05	6,283.69	6,267.15	22.39	22.37	117.75	-35.99	-2,313.59	2,395.88	2,364.40	31.48	76.106		
6,500.00	6,490.51	6,383.16	6,366.08	22.75	22.74	117.76	-44.64	-2,319.35	2,406.14	2,374.14	31.99	75.204		
6,600.00	6,589.96	6,482.63	6,465.00	23.11	23.12	117.76	-53.29	-2,325.12	2,416.39	2,383.88	32.51	74.329		
6,613.87	6,603.75	6,496.42	6,478.72	23.16	23.18	117.76	-54.49	-2,325.92	2,417.81	2,385.23	32.58	74.209		
6,700.00	6,689.50	6,582.14	6,563.97	23.47	23.50	117.86	-61.95	-2,330.89	2,426.20	2,393.17	33.02	73.466		
6,800.00	6,789.26	6,681.73	6,663.01	23.82	23.88	117.91	-70.61	-2,336.67	2,434.80	2,401.26	33.54	72.599		
6,900.00	6,889.17	6,781.32	6,762.06	24.17	24.27	117.88	-79.28	-2,342.45	2,442.19	2,408.14	34.05	71.728		
7,000.00	6,989.15	6,880.84	6,861.04	24.52	24.65	117.79	-87.94	-2,348.22	2,448.37	2,413.81	34.56	70.854		
7,013.85	7,003.00	6,894.62	6,874.74	24.57	24.70	-87.40	-89.13	-2,349.02	2,449.13	2,414.51	34.63	70.732		
7,100.00	7,089.15	6,980.30	6,959.94	24.87	25.03	-87.58	-96.59	-2,353.98	2,453.81	2,418.75	35.07	69.976		
7,200.00	7,189.15	7,079.75	7,058.85	25.22	25.41	-87.79	-105.24	-2,359.75	2,459.28	2,423.70	35.58	69.123		
7,300.00	7,289.15	7,179.20	7,157.76	25.57	25.79	-87.99	-113.89	-2,365.52	2,464.78	2,428.69	36.09	68.295		
7,400.00	7,389.15	7,278.65	7,256.66	25.92	26.18	-88.20	-122.54	-2,371.29	2,470.31	2,433.70	36.60	67.490		
7,500.00	7,489.15	7,378.10	7,355.57	26.27	26.56	-88.41	-131.19	-2,377.06	2,475.87	2,438.75	37.12	66.708		
7,600.00	7,589.15	7,477.56	7,454.48	26.62	26.94	-88.61	-139.84	-2,382.82	2,481.46	2,443.83	37.63	65.947		
7,700.00	7,689.15	7,577.01	7,553.39	26.97	27.33	-88.81	-148.50	-2,388.59	2,487.08	2,448.94	38.14	65.208		
7,800.00	7,789.15	7,676.46	7,652.29	27.32	27.71	-89.01	-157.15	-2,394.36	2,492.74	2,454.08	38.65	64.488		
7,900.00	7,889.15	7,775.91	7,751.20	27.67	28.10	-89.21	-165.80	-2,400.13	2,498.43	2,459.26	39.17	63.788		
8,000.00	7,989.15	7,875.36	7,850.11	28.03	28.48	-89.41	-174.45	-2,405.89	2,504.14	2,464.46	39.68	63.106		
8,100.00	8,089.15	7,974.82	7,949.01	28.38	28.87	-89.61	-183.10	-2,411.66	2,509.89	2,469.69	40.20	62.442		
8,200.00	8,189.15	8,074.27	8,047.92	28.73	29.25	-89.81	-191.75	-2,417.43	2,515.67	2,474.96	40.71	61.796		
8,300.00	8,289.15	8,174.41	8,147.52	29.08	29.64	-90.01	-200.47	-2,423.24	2,521.48	2,480.25	41.23	61.163		
8,400.00	8,389.15	8,332.28	8,304.83	29.43	30.24	-90.26	-211.43	-2,430.55	2,526.14	2,484.22	41.91	60.269		
8,500.00	8,489.15	8,490.98	8,463.37	29.79	30.81	-90.39	-216.99	-2,434.26	2,528.49	2,485.92	42.58	59.388		
8,600.00	8,589.15	8,621.27	8,593.65	30.14	31.25	-90.40	-217.72	-2,434.74	2,528.80	2,485.67	43.14	58.625		
8,700.00	8,689.15	8,721.27	8,693.65	30.49	31.58	-90.40	-217.72	-2,434.74	2,528.80	2,485.18	43.62	57.974		
8,800.00	8,789.15	8,821.27	8,793.65	30.85	31.91	-90.40	-217.72	-2,434.74	2,528.80	2,484.70	44.10	57.338		
8,900.00	8,889.15	8,921.27	8,893.65	31.20	32.24	-90.40	-217.72	-2,434.74	2,528.80	2,484.21	44.59	56.714		
9,000.00	8,989.15	9,021.27	8,993.65	31.55	32.57	-90.40	-217.72	-2,434.74	2,528.80	2,483.73	45.07	56.103		
9,100.00	9,089.15	9,121.27	9,093.65	31.91	32.90	-90.40	-217.72	-2,434.74	2,528.80	2,483.24	45.56	55.505		
9,200.00	9,189.15	9,221.27	9,193.65	32.26	33.23	-90.40	-217.72	-2,434.74	2,528.80	2,482.76	46.05	54.918		
9,300.00	9,289.15	9,321.27	9,293.65	32.61	33.56	-90.40	-217.72	-2,434.74	2,528.80	2,482.27	46.53	54.344		
9,400.00	9,389.15	9,421.27	9,393.65	32.97	33.90	-90.40	-217.72	-2,434.74	2,528.80	2,481.78	47.02	53.781		
9,500.00	9,489.15	9,521.27	9,493.65	33.32	34.23	-90.40	-217.72	-2,434.74	2,528.80	2,481.29	47.51	53.229		
9,600.00	9,589.15	9,621.27	9,593.65	33.67	34.56	-90.40	-217.72	-2,434.74	2,528.80	2,480.81	48.00	52.687		
9,700.00	9,689.15	9,721.27	9,693.65	34.03	34.90	-90.40	-217.72	-2,434.74	2,528.80	2,480.32	48.48	52.156		
9,800.00	9,789.15	9,821.27	9,793.65	34.38	35.23	-90.40	-217.72	-2,434.74	2,528.80	2,479.83	48.97	51.636		
9,900.00	9,889.15	9,921.27	9,893.65	34.74	35.57	-90.40	-217.72	-2,434.74	2,528.80	2,479.34	49.46	51.125		
10,000.00	9,989.15	10,021.27	9,993.65	35.09	35.91	-90.40	-217.72	-2,434.74	2,528.80	2,478.85	49.95	50.624		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	10,089.15	10,121.27	10,093.65	35.44	36.24	-90.40	-217.72	-2,434.74	2,528.80	2,478.36	50.44	50.132		
10,200.00	10,189.15	10,221.27	10,193.65	35.80	36.58	-90.40	-217.72	-2,434.74	2,528.80	2,477.87	50.93	49.650		
10,300.00	10,289.15	10,321.27	10,293.65	36.15	36.92	-90.40	-217.72	-2,434.74	2,528.80	2,477.38	51.42	49.176		
10,400.00	10,389.15	10,421.27	10,393.65	36.51	37.25	-90.40	-217.72	-2,434.74	2,528.80	2,476.89	51.91	48.711		
10,500.00	10,489.15	10,521.27	10,493.65	36.86	37.59	-90.40	-217.72	-2,434.74	2,528.80	2,476.40	52.41	48.255		
10,600.00	10,589.15	10,621.27	10,593.65	37.22	37.93	-90.40	-217.72	-2,434.74	2,528.80	2,475.91	52.90	47.806		
10,700.00	10,689.15	10,721.27	10,693.65	37.57	38.27	-90.40	-217.72	-2,434.74	2,528.80	2,475.41	53.39	47.366		
10,800.00	10,789.15	10,821.27	10,793.65	37.93	38.61	-90.40	-217.72	-2,434.74	2,528.80	2,474.92	53.88	46.934		
10,900.00	10,889.15	10,921.27	10,893.65	38.28	38.95	-90.40	-217.72	-2,434.74	2,528.80	2,474.43	54.37	46.509		
11,000.00	10,989.15	11,021.27	10,993.65	38.64	39.29	-90.40	-217.72	-2,434.74	2,528.80	2,473.94	54.87	46.091		
11,108.85	11,098.00	11,130.12	11,102.50	39.02	39.66	-90.40	-217.72	-2,434.74	2,528.80	2,473.40	55.40	45.645		
11,150.00	11,139.12	11,171.23	11,143.62	39.17	39.80	-89.92	-217.72	-2,434.74	2,528.80	2,473.20	55.60	45.479		
11,186.31	11,175.22	11,207.34	11,179.72	39.29	39.92	-90.00	-217.72	-2,434.74	2,528.80	2,473.02	55.78	45.338		
11,200.00	11,188.77	11,220.88	11,193.27	39.34	39.97	-90.04	-217.72	-2,434.74	2,528.80	2,472.96	55.84	45.285		
11,250.00	11,237.73	11,269.85	11,242.23	39.50	40.13	-90.27	-217.72	-2,434.74	2,528.83	2,472.75	56.07	45.098		
11,300.00	11,285.62	11,317.74	11,290.12	39.66	40.30	-90.56	-217.72	-2,434.74	2,528.93	2,472.64	56.30	44.921		
11,350.00	11,332.09	11,364.21	11,336.59	39.81	40.45	-90.93	-217.72	-2,434.74	2,529.19	2,472.68	56.51	44.755		
11,400.00	11,376.78	11,408.90	11,381.28	39.95	40.61	-91.33	-217.72	-2,434.74	2,529.69	2,472.97	56.72	44.602		
11,450.00	11,419.35	11,451.47	11,423.85	40.08	40.75	-91.75	-217.72	-2,434.74	2,530.52	2,473.61	56.91	44.464		
11,500.00	11,459.47	11,497.40	11,469.77	40.20	40.91	-92.24	-217.09	-2,434.75	2,531.77	2,474.66	57.11	44.334		
11,550.00	11,496.84	11,550.61	11,522.74	40.32	41.08	-92.79	-212.14	-2,434.79	2,533.38	2,476.07	57.31	44.206		
11,600.00	11,531.17	11,608.10	11,579.16	40.44	41.25	-93.36	-201.31	-2,434.88	2,535.30	2,477.79	57.50	44.089		
11,650.00	11,562.21	11,670.77	11,639.11	40.55	41.41	-93.94	-183.11	-2,435.03	2,537.49	2,479.80	57.69	43.984		
11,700.00	11,589.71	11,739.77	11,702.36	40.67	41.58	-94.55	-155.66	-2,435.27	2,539.90	2,482.03	57.87	43.891		
11,750.00	11,613.47	11,816.36	11,768.14	40.79	41.73	-95.19	-116.54	-2,435.60	2,542.42	2,484.39	58.03	43.811		
11,800.00	11,633.31	11,901.86	11,834.66	40.91	41.87	-95.83	-62.96	-2,436.05	2,544.93	2,486.75	58.18	43.742		
11,850.00	11,649.08	11,997.34	11,898.61	41.04	41.98	-96.46	7.81	-2,436.66	2,547.26	2,488.95	58.32	43.680		
11,900.00	11,660.65	12,103.16	11,954.66	41.16	42.08	-97.02	97.38	-2,437.42	2,549.23	2,490.78	58.45	43.613		
11,950.00	11,667.94	12,218.24	11,995.81	41.29	42.18	-97.45	204.63	-2,438.33	2,550.62	2,492.01	58.60	43.523		
12,000.00	11,670.89	12,339.57	12,015.12	41.42	42.31	-97.66	324.19	-2,439.34	2,551.26	2,492.46	58.80	43.390		
12,018.82	11,670.87	12,385.95	12,015.75	41.47	42.37	-97.67	370.54	-2,439.74	2,551.28	2,492.40	58.89	43.325		
12,100.00	11,669.46	12,463.85	12,014.45	41.72	42.53	-97.67	448.43	-2,440.40	2,551.24	2,492.07	59.17	43.117		
12,200.00	11,667.72	12,563.85	12,012.73	42.08	42.79	-97.67	548.41	-2,441.25	2,551.19	2,491.59	59.60	42.807		
12,300.00	11,665.98	12,663.85	12,011.02	42.50	43.11	-97.67	648.39	-2,442.10	2,551.13	2,491.02	60.11	42.439		
12,400.00	11,664.24	12,763.85	12,009.31	42.98	43.50	-97.67	748.38	-2,442.94	2,551.08	2,490.37	60.71	42.020		
12,500.00	11,662.50	12,863.85	12,007.59	43.51	43.94	-97.67	848.36	-2,443.79	2,551.03	2,489.63	61.39	41.553		
12,600.00	11,660.76	12,963.85	12,005.88	44.11	44.44	-97.68	948.34	-2,444.64	2,550.97	2,488.82	62.15	41.044		
12,700.00	11,659.01	13,063.85	12,004.17	44.75	45.00	-97.68	1,048.32	-2,445.49	2,550.92	2,487.93	62.99	40.499		
12,800.00	11,657.27	13,163.85	12,002.45	45.45	45.60	-97.68	1,148.30	-2,446.34	2,550.86	2,486.97	63.90	39.922		
12,900.00	11,655.53	13,263.85	12,000.74	46.19	46.26	-97.68	1,248.28	-2,447.19	2,550.81	2,485.93	64.88	39.318		
13,000.00	11,653.79	13,363.85	11,999.03	46.98	46.97	-97.68	1,348.27	-2,448.04	2,550.76	2,484.83	65.92	38.693		
13,100.00	11,652.05	13,463.85	11,997.31	47.82	47.72	-97.68	1,448.25	-2,448.89	2,550.70	2,483.67	67.03	38.051		
13,200.00	11,650.31	13,563.85	11,995.60	48.70	48.52	-97.68	1,548.23	-2,449.74	2,550.65	2,482.44	68.20	37.397		
13,300.00	11,648.57	13,663.85	11,993.89	49.61	49.36	-97.68	1,648.21	-2,450.59	2,550.59	2,481.16	69.43	36.735		
13,400.00	11,646.83	13,763.85	11,992.17	50.57	50.24	-97.68	1,748.19	-2,451.44	2,550.54	2,479.82	70.72	36.067		
13,500.00	11,645.09	13,863.85	11,990.46	51.55	51.16	-97.68	1,848.17	-2,452.28	2,550.49	2,478.43	72.05	35.398		
13,600.00	11,643.35	13,963.85	11,988.75	52.58	52.11	-97.68	1,948.16	-2,453.13	2,550.43	2,476.99	73.44	34.730		
13,700.00	11,641.61	14,063.85	11,987.04	53.63	53.10	-97.68	2,048.14	-2,453.98	2,550.38	2,475.51	74.87	34.066		
13,800.00	11,639.87	14,163.85	11,985.32	54.71	54.12	-97.68	2,148.12	-2,454.83	2,550.32	2,473.98	76.34	33.407		
13,900.00	11,638.13	14,263.85	11,983.61	55.82	55.17	-97.69	2,248.10	-2,455.68	2,550.27	2,472.41	77.86	32.756		
14,000.00	11,636.39	14,363.85	11,981.90	56.96	56.24	-97.69	2,348.08	-2,456.53	2,550.21	2,470.80	79.41	32.114		
14,100.00	11,634.65	14,463.85	11,980.18	58.12	57.35	-97.69	2,448.06	-2,457.38	2,550.16	2,469.16	81.00	31.483		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,632.91	14,563.85	11,978.47	59.31	58.48	-97.69	2,548.05	-2,458.23	2,550.11	2,467.48	82.63	30.863		
14,300.00	11,631.17	14,663.85	11,976.76	60.52	59.64	-97.69	2,648.03	-2,459.08	2,550.05	2,465.77	84.28	30.255		
14,400.00	11,629.42	14,763.85	11,975.04	61.74	60.82	-97.69	2,748.01	-2,459.93	2,550.00	2,464.03	85.97	29.661		
14,500.00	11,627.68	14,863.85	11,973.33	62.99	62.02	-97.69	2,847.99	-2,460.77	2,549.94	2,462.26	87.69	29.079		
14,600.00	11,625.94	14,963.85	11,971.62	64.26	63.24	-97.69	2,947.97	-2,461.62	2,549.89	2,460.46	89.43	28.511		
14,700.00	11,624.20	15,063.85	11,969.90	65.54	64.48	-97.69	3,047.95	-2,462.47	2,549.84	2,458.63	91.20	27.958		
14,800.00	11,622.46	15,163.85	11,968.19	66.84	65.73	-97.69	3,147.94	-2,463.32	2,549.78	2,456.79	93.00	27.418		
14,900.00	11,620.72	15,263.85	11,966.48	68.15	67.01	-97.69	3,247.92	-2,464.17	2,549.73	2,454.91	94.81	26.892		
15,000.00	11,618.98	15,363.85	11,964.77	69.48	68.30	-97.69	3,347.90	-2,465.02	2,549.67	2,453.02	96.65	26.380		
15,100.00	11,617.24	15,463.85	11,963.05	70.82	69.61	-97.69	3,447.88	-2,465.87	2,549.62	2,451.11	98.51	25.882		
15,200.00	11,615.50	15,563.85	11,961.34	72.18	70.93	-97.70	3,547.86	-2,466.72	2,549.57	2,449.18	100.39	25.397		
15,300.00	11,613.76	15,663.85	11,959.63	73.54	72.26	-97.70	3,647.85	-2,467.57	2,549.51	2,447.23	102.28	24.926		
15,400.00	11,612.02	15,763.85	11,957.91	74.92	73.61	-97.70	3,747.83	-2,468.42	2,549.46	2,445.26	104.20	24.468		
15,500.00	11,610.28	15,863.85	11,956.20	76.31	74.97	-97.70	3,847.81	-2,469.27	2,549.40	2,443.28	106.13	24.022		
15,600.00	11,608.54	15,963.85	11,954.49	77.71	76.34	-97.70	3,947.79	-2,470.11	2,549.35	2,441.28	108.07	23.590		
15,700.00	11,606.80	16,063.85	11,952.77	79.12	77.72	-97.70	4,047.77	-2,470.96	2,549.30	2,439.27	110.03	23.169		
15,800.00	11,605.06	16,163.85	11,951.06	80.54	79.11	-97.70	4,147.75	-2,471.81	2,549.24	2,437.24	112.00	22.761		
15,900.00	11,603.32	16,263.85	11,949.35	81.97	80.51	-97.70	4,247.74	-2,472.66	2,549.19	2,435.20	113.99	22.364		
16,000.00	11,601.57	16,363.85	11,947.63	83.40	81.92	-97.70	4,347.72	-2,473.51	2,549.13	2,433.15	115.99	21.978		
16,100.00	11,599.83	16,463.85	11,945.92	84.84	83.34	-97.70	4,447.70	-2,474.36	2,549.08	2,431.09	117.99	21.603		
16,200.00	11,598.09	16,563.85	11,944.21	86.30	84.77	-97.70	4,547.68	-2,475.21	2,549.03	2,429.01	120.02	21.239		
16,300.00	11,596.35	16,663.85	11,942.50	87.75	86.21	-97.70	4,647.66	-2,476.06	2,548.97	2,426.93	122.05	20.885		
16,400.00	11,594.61	16,763.85	11,940.78	89.22	87.65	-97.71	4,747.64	-2,476.91	2,548.92	2,424.83	124.09	20.541		
16,500.00	11,592.87	16,863.85	11,939.07	90.69	89.10	-97.71	4,847.63	-2,477.76	2,548.86	2,422.72	126.14	20.207		
16,600.00	11,591.13	16,963.85	11,937.36	92.17	90.56	-97.71	4,947.61	-2,478.61	2,548.81	2,420.61	128.20	19.882		
16,700.00	11,589.39	17,063.85	11,935.64	93.65	92.03	-97.71	5,047.59	-2,479.45	2,548.76	2,418.49	130.27	19.565		
16,800.00	11,587.65	17,163.85	11,933.93	95.14	93.50	-97.71	5,147.57	-2,480.30	2,548.70	2,416.36	132.35	19.258		
16,900.00	11,585.91	17,263.85	11,932.22	96.63	94.97	-97.71	5,247.55	-2,481.15	2,548.65	2,414.22	134.43	18.959		
17,000.00	11,584.17	17,363.85	11,930.50	98.13	96.46	-97.71	5,347.53	-2,482.00	2,548.59	2,412.07	136.52	18.668		
17,100.00	11,582.43	17,463.85	11,928.79	99.64	97.94	-97.71	5,447.52	-2,482.85	2,548.54	2,409.92	138.62	18.385		
17,200.00	11,580.69	17,563.85	11,927.08	101.14	99.44	-97.71	5,547.50	-2,483.70	2,548.49	2,407.76	140.73	18.109		
17,300.00	11,578.95	17,663.85	11,925.36	102.66	100.93	-97.71	5,647.48	-2,484.55	2,548.43	2,405.59	142.84	17.841		
17,400.00	11,577.21	17,763.85	11,923.65	104.17	102.44	-97.71	5,747.46	-2,485.40	2,548.38	2,403.42	144.96	17.580		
17,500.00	11,575.47	17,863.85	11,921.94	105.70	103.94	-97.71	5,847.44	-2,486.25	2,548.32	2,401.24	147.09	17.325		
17,600.00	11,573.73	17,963.85	11,920.23	107.22	105.46	-97.71	5,947.42	-2,487.10	2,548.27	2,399.05	149.22	17.078		
17,700.00	11,571.98	18,063.85	11,918.51	108.75	106.97	-97.72	6,047.41	-2,487.95	2,548.22	2,396.86	151.35	16.836		
17,800.00	11,570.24	18,163.85	11,916.80	110.28	108.49	-97.72	6,147.39	-2,488.79	2,548.16	2,394.67	153.49	16.601		
17,900.00	11,568.50	18,263.85	11,915.09	111.82	110.01	-97.72	6,247.37	-2,489.64	2,548.11	2,392.47	155.64	16.372		
18,000.00	11,566.76	18,363.85	11,913.37	113.36	111.54	-97.72	6,347.35	-2,490.49	2,548.05	2,390.26	157.79	16.148		
18,100.00	11,565.02	18,463.85	11,911.66	114.90	113.07	-97.72	6,447.33	-2,491.34	2,548.00	2,388.05	159.95	15.930		
18,200.00	11,563.28	18,563.85	11,909.95	116.44	114.60	-97.72	6,547.31	-2,492.19	2,547.95	2,385.84	162.11	15.718		
18,300.00	11,561.54	18,663.85	11,908.23	117.99	116.14	-97.72	6,647.30	-2,493.04	2,547.89	2,383.62	164.27	15.510		
18,400.00	11,559.80	18,763.85	11,906.52	119.54	117.68	-97.72	6,747.28	-2,493.89	2,547.84	2,381.40	166.44	15.308		
18,500.00	11,558.06	18,863.85	11,904.81	121.10	119.23	-97.72	6,847.26	-2,494.74	2,547.78	2,379.17	168.61	15.110		
18,600.00	11,556.32	18,963.85	11,903.09	122.65	120.77	-97.72	6,947.24	-2,495.59	2,547.73	2,376.94	170.79	14.917		
18,700.00	11,554.58	19,063.85	11,901.38	124.21	122.32	-97.72	7,047.22	-2,496.44	2,547.68	2,374.71	172.97	14.729		
18,800.00	11,552.84	19,163.85	11,899.67	125.77	123.87	-97.72	7,147.20	-2,497.28	2,547.62	2,372.47	175.15	14.545		
18,900.00	11,551.10	19,263.85	11,897.96	127.33	125.43	-97.72	7,247.19	-2,498.13	2,547.57	2,370.23	177.34	14.366		
19,000.00	11,549.36	19,363.85	11,896.24	128.90	126.98	-97.73	7,347.17	-2,498.98	2,547.51	2,367.98	179.53	14.190		
19,100.00	11,547.62	19,463.85	11,894.53	130.47	128.54	-97.73	7,447.15	-2,499.83	2,547.46	2,365.74	181.72	14.018		
19,200.00	11,545.88	19,563.85	11,892.82	132.04	130.10	-97.73	7,547.13	-2,500.68	2,547.41	2,363.49	183.92	13.851		
19,300.00	11,544.14	19,663.85	11,891.10	133.61	131.67	-97.73	7,647.11	-2,501.53	2,547.35	2,361.23	186.12	13.687		

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 Zia Fed Com 604H
Project:	Lea County, NM (NAD83)	TVD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Reference Site:	Santa Fe Fed/Zia Fed	MD Reference:	3078.8' GE + 30' KB @ 3108.80usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Zia Fed Com 604H	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	11,542.39	19,763.85	11,889.39	135.18	133.23	-97.73	7,747.09	-2,502.38	2,547.30	2,358.98	188.32	13.526		
19,500.00	11,540.65	19,863.85	11,887.68	136.76	134.80	-97.73	7,847.08	-2,503.23	2,547.24	2,356.72	190.53	13.370		
19,600.00	11,538.91	19,963.85	11,885.96	138.33	136.37	-97.73	7,947.06	-2,504.08	2,547.19	2,354.46	192.73	13.216		
19,700.00	11,537.17	20,063.85	11,884.25	139.91	137.94	-97.73	8,047.04	-2,504.93	2,547.14	2,352.19	194.94	13.066		
19,800.00	11,535.43	20,163.85	11,882.54	141.49	139.51	-97.73	8,147.02	-2,505.78	2,547.08	2,349.93	197.16	12.919		
19,900.00	11,533.69	20,263.85	11,880.82	143.08	141.09	-97.73	8,247.00	-2,506.62	2,547.03	2,347.66	199.37	12.775		
20,000.00	11,531.95	20,363.85	11,879.11	144.66	142.66	-97.73	8,346.99	-2,507.47	2,546.97	2,345.39	201.59	12.635		
20,100.00	11,530.21	20,463.85	11,877.40	146.24	144.24	-97.73	8,446.97	-2,508.32	2,546.92	2,343.11	203.81	12.497		
20,200.00	11,528.47	20,563.85	11,875.69	147.83	145.82	-97.74	8,546.95	-2,509.17	2,546.87	2,340.84	206.03	12.362		
20,300.00	11,526.73	20,663.85	11,873.97	149.42	147.40	-97.74	8,646.93	-2,510.02	2,546.81	2,338.56	208.25	12.230		
20,400.00	11,524.99	20,763.85	11,872.26	151.01	148.99	-97.74	8,746.91	-2,510.87	2,546.76	2,336.28	210.48	12.100		
20,500.00	11,523.25	20,863.85	11,870.55	152.60	150.57	-97.74	8,846.89	-2,511.72	2,546.70	2,334.00	212.70	11.973		
20,600.00	11,521.51	20,963.85	11,868.83	154.19	152.16	-97.74	8,946.88	-2,512.57	2,546.65	2,331.72	214.93	11.849		
20,700.00	11,519.77	21,063.85	11,867.12	155.78	153.75	-97.74	9,046.86	-2,513.42	2,546.60	2,329.43	217.16	11.727		
20,800.00	11,518.03	21,163.85	11,865.41	157.38	155.34	-97.74	9,146.84	-2,514.27	2,546.54	2,327.15	219.39	11.607		
20,900.00	11,516.29	21,263.85	11,863.69	158.97	156.93	-97.74	9,246.82	-2,515.12	2,546.49	2,324.86	221.63	11.490		
21,000.00	11,514.54	21,363.85	11,861.98	160.57	158.52	-97.74	9,346.80	-2,515.96	2,546.43	2,322.57	223.86	11.375		
21,100.00	11,512.80	21,463.85	11,860.27	162.17	160.11	-97.74	9,446.78	-2,516.81	2,546.38	2,320.28	226.10	11.262		
21,200.00	11,511.06	21,563.85	11,858.55	163.77	161.70	-97.74	9,546.77	-2,517.66	2,546.32	2,317.98	228.34	11.151		
21,300.00	11,509.32	21,663.85	11,856.84	165.37	163.30	-97.74	9,646.75	-2,518.51	2,546.27	2,315.69	230.58	11.043		
21,400.00	11,507.58	21,763.85	11,855.13	166.97	164.89	-97.74	9,746.73	-2,519.36	2,546.22	2,313.39	232.82	10.936		
21,500.00	11,505.84	21,863.85	11,853.42	168.57	166.49	-97.75	9,846.71	-2,520.21	2,546.16	2,311.10	235.07	10.832		
21,600.00	11,504.10	21,963.85	11,851.70	170.17	168.09	-97.75	9,946.69	-2,521.06	2,546.11	2,308.80	237.31	10.729		
21,700.00	11,502.36	22,063.85	11,849.99	171.78	169.69	-97.75	10,046.67	-2,521.91	2,546.05	2,306.50	239.56	10.628		
21,795.87	11,500.69	22,158.34	11,848.37	173.32	171.20	-97.75	10,141.15	-2,522.71	2,546.00	2,304.31	241.70	10.534		
21,800.00	11,500.62	22,158.34	11,848.37	173.38	171.20	-97.75	10,141.15	-2,522.71	2,546.01	2,304.26	241.75	10.532		
21,812.62	11,500.40	22,158.34	11,848.37	173.58	171.20	-97.75	10,141.15	-2,522.71	2,546.06	2,304.17	241.89	10.526 SF		

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



Total Directional Services

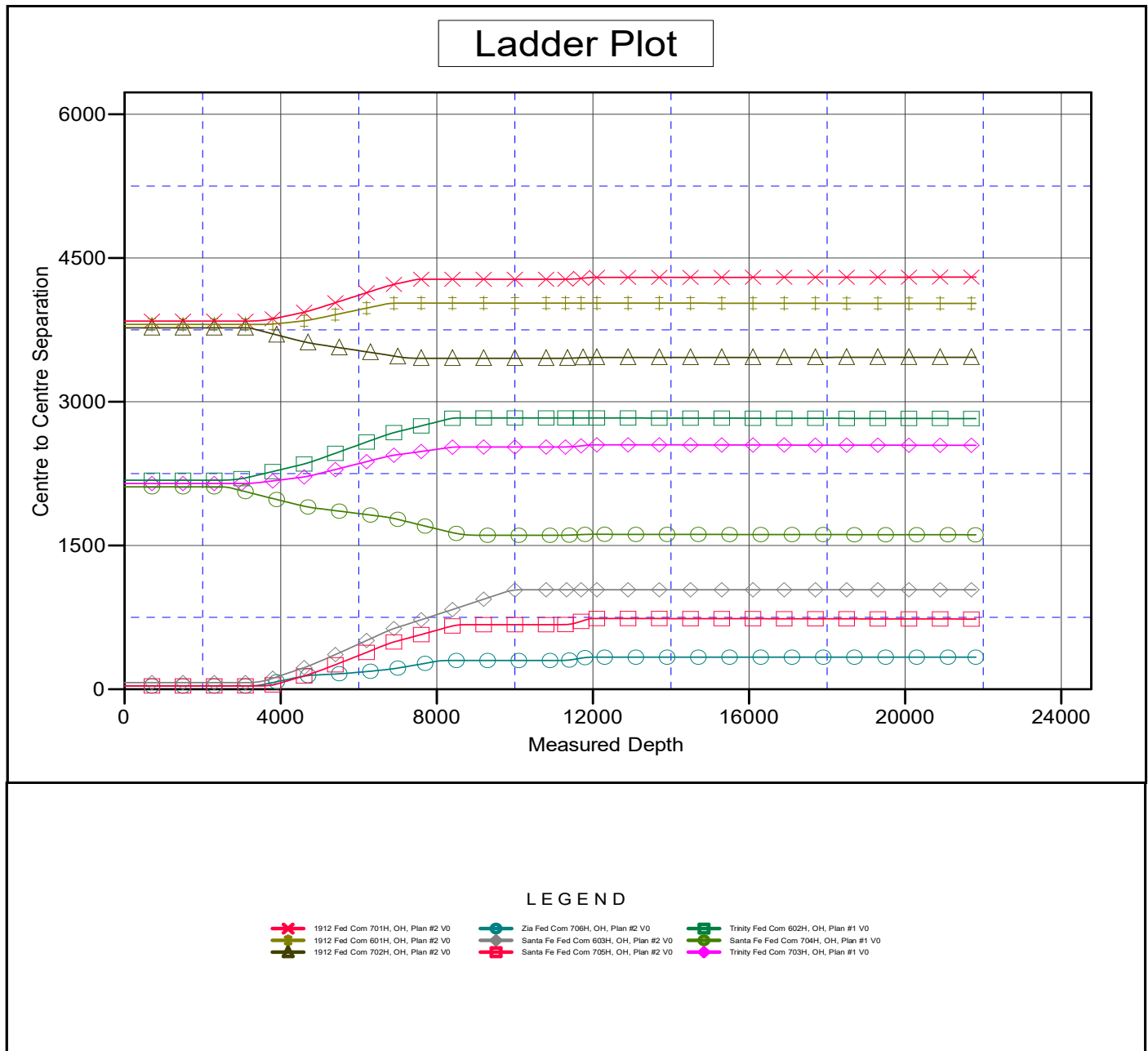
Anticollision Report



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Reference Well:	Zia Fed Com 604H	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 3078.8' GE + 30' KB @ 3108.80usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Zia Fed Com 604H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.54°



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



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Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3078.8' GE + 30' KB @ 3108.80usft

Offset Depths are relative to Offset Datum

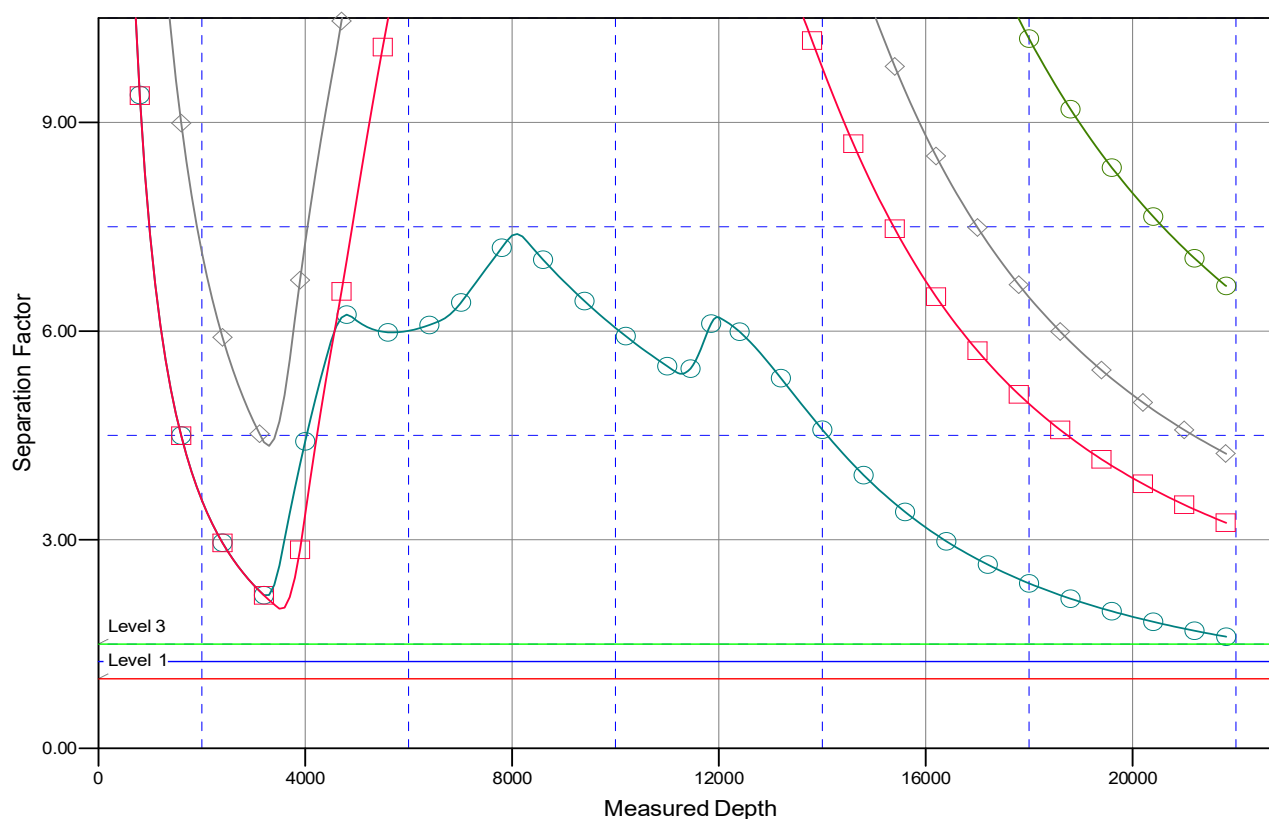
Central Meridian is -104.333334

Coordinates are relative to: Zia Fed Com 604H

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 706H, OH, Plan #2 V0	Trinity Fed Com 602H, OH, Plan #1 V0
1912 Fed Com 601H, OH, Plan #2 V0	Santa Fe Fed Com 603H, 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: WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: LOCATION: COUNTY:	FRANKLIN MOUNTAIN ENERGY LLC TRINITY FEDERAL 703H 710'/S & 2619'/W 150'/N & 2102'/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 ZIA FED COM 604H 250'/S & 742'/E 150'/N & 650'/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 ZIA FED COM 706H 250'/S & 707'/E 150'/N & 350'/E Section 24, T.25 S., R.35 E., NMP Lea County, New Mexico

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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.

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- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
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 - Topsoil
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 - Roads
- ☐ **Road Section Diagram**
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- ☐ **Interim Reclamation**
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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

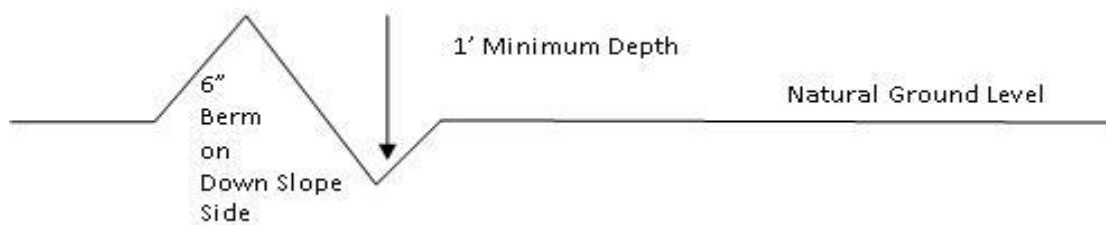
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outloping 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

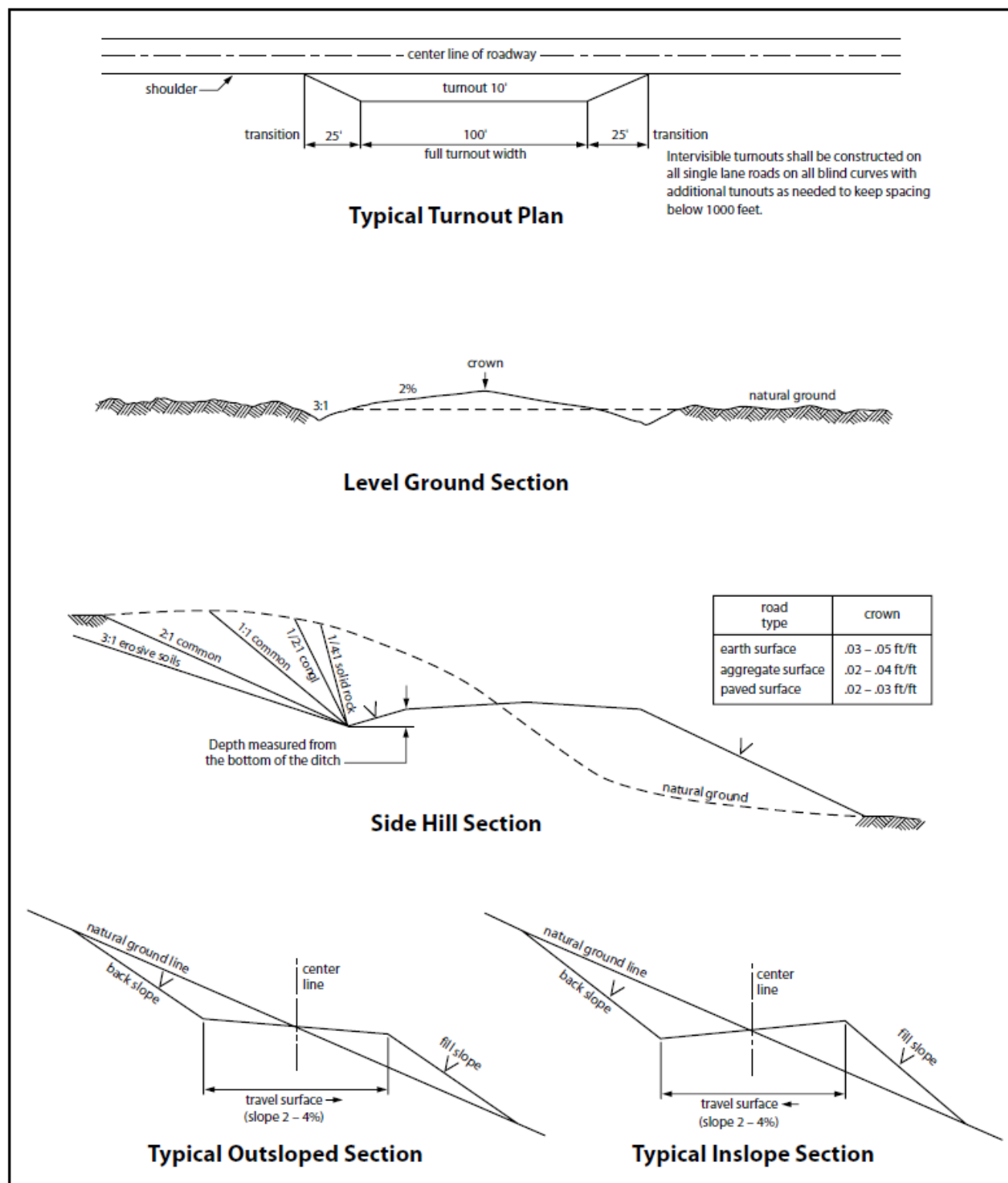


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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.:	Zia Fed Com 604H
SURFACE HOLE FOOTAGE:	250'/S & 742'/E
BOTTOM HOLE FOOTAGE:	150'/N & 650'/E

WELL NAME & NO.:	Zia Fed Com 706H
SURFACE HOLE FOOTAGE:	250'/S & 707'/E
BOTTOM HOLE FOOTAGE:	150'/N & 350'/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.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

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

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

C. PRESSURE CONTROL

1. 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



Zia Fed Com 604H

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)	3,079'	30'	30'	0	Sand/Gravels/unconsolidated
Rustler	2,441'	668'			Carbonates
Salado	1,838'	1,271'			Salt, Carbonate & Clastics
Base Salt	-963'	4,072'			Shaley Carbonate & Shale
Lamar	-1,729'	4,838'			Carbonate & Clastics
Bell Canyon	-1,781'	4,890'			Sandstone - oil/gas/water
Cherry Canyon	-2,814'	5,923'			Sandstone - oil/gas/water
Brushy Canyon	-4,116'	7,225'			Sand/carb/shales - oil/gas/water
Bone Spring Lime	-5,367'	8,476'			Shale/Carbonates - oil/gas
Avalon	-5,390'	8,499'			Shale/Carbonates - oil/gas
First Bone Spring Sand	-6,779'	9,888'			Sandstone - oil/gas/water
Second Bone Spring Carbonates	-6,907'	10,016'			Shale/Carbonates - oil/gas
Second Bone Spring Sand	-7,301'	10,410'			Sandstone - oil/gas/water
Third Bone Spring Carbonates	-7,751'	10,860'			Shale/Carbonates - oil/gas
Third Bone Spring Sand	-8,453'	11,562'			Sandstone - oil/gas/water
HZ Target at SHL	-8,569'	11,678'			Overpressure shale/sand- Oil/Gas
Wolfcamp	-8,704'	11,813'			Overpressure shale/sand- Oil/Gas
Wolfcamp A	-8,739'	11,848'			Overpressure Shale - Oil/Gas
Wolfcamp B	-8,931'	12,040'			Overpressure Shale - Oil/Gas

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

Upper Permian Sands	0- 400'	Fresh Water
Delaware Sands	4,890'	Oil
Bone Spring	9,888'	Oil
Wolfcamp	11,813'	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	12018	1.1	1.27	1.81	1.23
Long string 5 1/2"	23	P-110	14520	14520	729	Anaconda 656	21812	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	12018	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	11018	50%
Prod	6.75	5.5	21812	795	NeoCem, 13.5 ppg, Gas Migration Control	1.357	6.65	11018						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' – 12,018'	Brine	8.8-10.2	28-34	N/c
12,018' – 21,812' 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 11,670' TVD (deepest point of the well) is 195F with an estimated maximum bottom-hole pressure (BHP) at the same point of 7,282 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 22163

CONDITIONS OF APPROVAL

Operator:		OGRID:	Action Number:	Action Type:
FRANKLIN MOUNTAIN ENERGY LLC	44 Cook Street	373910	22163	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