

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

JUN 17 2011

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other ☐		5. Lease Serial No. SF-080657	
b. Type of Completion: ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr., Other <u>Sidetrack</u>		6. If Indian, Allottee or Tribe Name	
2. Name of Operator ENERGEN RESOURCES CORPORATION		7. Unit or CA Agreement Name and No San Juan 32-5 Unit	
3. Address 2198 Bloomfield Highway, Farmington, NM 87401		8. Lease Name and Well No. San Juan 32-5 Unit 111	
3a. Phone No. (include area code) 505-325-6800		9. API Well No. 30-039-26637	
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface 1005' ENL, 680' FEL At top prod interval reported below At total depth		10. Field and Pool, or Exploratory Basin Fruitland Coal	
14. Date Spudded 10/29/01		15. Date T D. Reached 5/16/11	
16. Date Completed ☐ D & A ☒ Ready to Prod. 6/15/11		17. Elevations (DF, RKB, RT, GL)* 6654' GL	
18. Total Depth MD 5776' TVD 3358'		19. Plug Back T.D.. MD 4513' TVD 3355'	
20. Depth Bridge Plug Set: MD TVD		21. Type Electric & Other Mechanical Logs Run (Submit copy of each)	
22. Was well cored? ☒ No ☐ Yes (Submit analysis) Was DST run? ☒ No ☐ Yes (Submit report) Directional Survey? ☐ No ☒ Yes (Submit copy)			

GR/OCL/CEL, GR/Audio Log

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No of Sks. & Type of Cement	Slurry Vol (BBL)	Cement Top*	Amount Pulled
12-1/4"	9-5/8"	36#	0	242'		177 cu.ft.		surface	circulated
8-3/4"	7"	20#	0	3330'		916 cu.ft.		surface	circulated
6-1/4"	5-1/2"	15.5#	3259'	3443'					
6-1/4"	4-1/2"	11.6#	3128'	4514'	Sidetrack	No Cement			

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-3/8"	3405'							

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No Holes	Perf Status
A) Fruitland Coal	3354'TVD	3371'TVD	3624' - 4465' MD	0.50"	5046	
B)						
C)						
D)						

26. Perforation Record

Depth Interval	Amount and Type of Material
3624' - 4465' MD	1500 gal 15% HCL

27. Acid, Fracture, Treatment, Cement Squeeze, Etc

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
	6/16/11	2hr	→	0	600	20			Rod Pump
Choke Size	Tbg. Press Flwg. SI	Csg. Press.	24 Hr.	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
	0 psi	500psi	→						

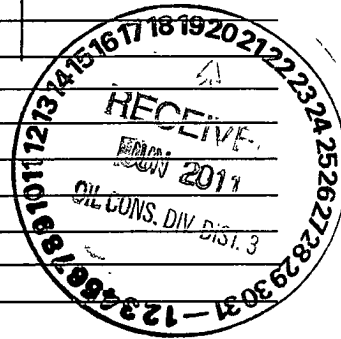
28a. Production-Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press Flwg. SI	Csg. Press.	24 Hr.	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
			→						

(See instructions and spaces for additional data on page 2)

NMOC

FARMINGTON FIELD OFFICE



ACCEPTED FOR RECORD

JUN 20 2011

28b Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	

28c Production-Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	

29 Disposition of Gas (Sold, used for fuel, vented, etc.)

30. Summary of Porous Zones (Include Aquifers)

Show all important zones of porosity and contents thereof. Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries

31 Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				San Jose	Surface
				Nacimiento	1409'
				Ojo Alamo	2704'
				Kirtland	2819'
				Fruitland	3171'
				Frutiland Coal	3579'

32. Additional remarks (include plugging procedure):

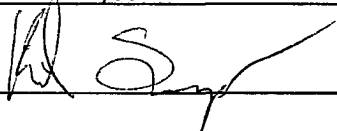
33. Indicate which items have been attached by placing a check in the appropriate boxes:

- ☒ Electrical/Mechanical Logs (1 full set req'd)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
 ☐ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☐ Other

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Kirt SnyderTitle District Engineer

Signature


Date 6/17/2011

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.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

JUN 17 2011

Farmington Field Office

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Energen Resources Corporation

3a. Address

2010 Afton Place, Farmington, NM 87401

3b. Phone No. (include area code)

505-325-6800

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: (A) Sec.31-T32N-R05W ; 1005'ENL, 680'FEL

BHL: (P) Sec.31-T32N-R05W ; 760'FSL, 1100'FWL

5. Lease Serial No

USA SF-080657

6. If Indian, Allottee or Tribe Name

Office

7. If Unit or CA/Agreement, Name and/or No
San Juan 32-5 Unit

8. Well Name and No

San Juan 32-5 Unit 111

9. API Well No.

30-039-26637

10. Field and Pool, or Exploratory Area
Basin Fruitland Coal

11. County or Parish, State

Rio Arriba NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☐ Notice of Intent☒ Subsequent Report☐ Final Abandonment Notice

TYPE OF ACTION

☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Fracture Treat☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other ProductionTubing

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

5/26/2011 - Completion Rig Moved in. ND WH. NU BOP. TOH w/ 2.375" 4.7# J-55 production tubing.

5/27 to 6/14/2011 - Clean out and flow back Horizontal Sidetrack.

6/15/2011 - Ran 104 jts 2.375" 4.7# J-55 production tubing, Set @ 3405'.

6/16/2011 - Ran Pump and Rods. RDMO.



14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Kirt Snyder

Title District Engineer

Signature

Date 6/17/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

ACCEPTED FOR RECORD

Approved by

Title

JUN 20 2011

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FARMINGTON FIELD OFFICE

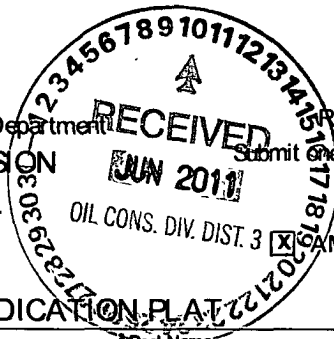
Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOCDA

"As Drilled"

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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 July 16, 2010
Submit one copy to appropriate
District Office
AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-039-26637		2 Pool Code		3 Pool Name Basin Fruitland Coal		
4 Property Code 21996		5 Property Name San Juan 32-5 Unit			6 Well Number 111	
7 OGRID No. 162928		8 Operator Name Energen Resources Corporation			9 Elevation 6654'	

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	31	32N	5W	1	1005	North	680	East	Rio Arriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	31	32N	5W	3	1722	South	1094	West	Rio Arriba

12 Dedicated Acres 345.59 acres	13 Joint or Infill	14 Consolidation Code	15 Order No. NSL-6358
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16 Producing Interval: From the lower swell packer at 3171' MD, 3168' TVD @ 1053' FNL, 671' FEL to the BHL @ 1722' FSL, 1094' FWL.				17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Stephen Byers</i> 6-9-2011 Signature Date Stephen Byers Printed Name sbyers@energen.com E-mail Address	
				18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. September 12, 2000 Date of Survey Signature and Seal of Professional Surveyor: Neale C. Edwards Certificate Number 10201	

AV



Energen Resources

Rio Arriba County

Eul Canyon

San Juan 32-5 Unit #111 ST

Re-Entry Horizontal OPE FTC

Design: Re-Entry Horizontal OPE FTC

Energen Planning Report

16 May, 2011

PATHFINDER[®]

A Schlumberger Company

WELL DETAILS: San Juan 32-5 Unit #111 ST

Ground Elevation: 6654.00
 RKB Elevation: RKB-15' @ 6669.00usft (D&J #1)
 Rig Name: D&J #1

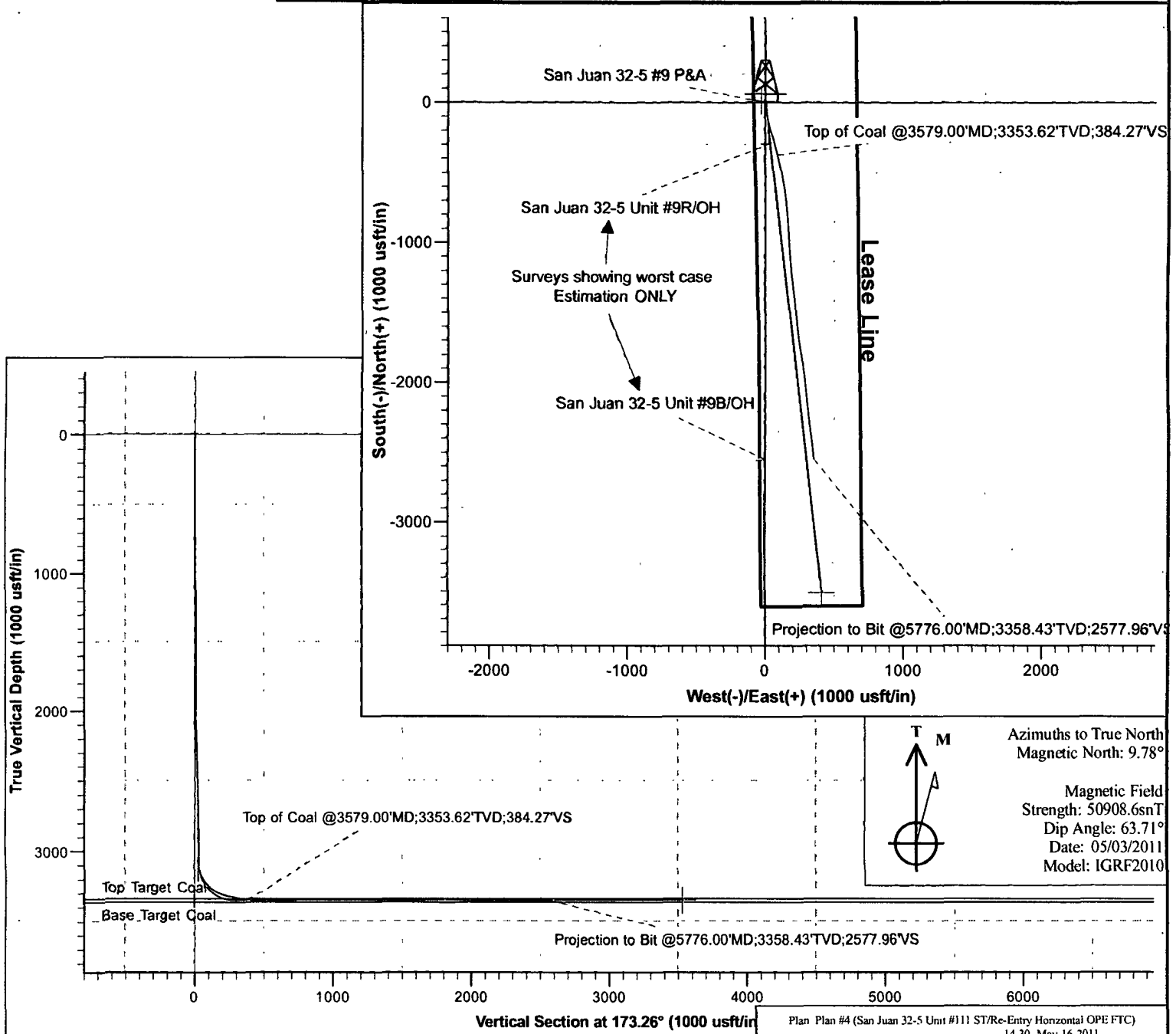
EOW

No H.L. Crossed

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	2163942.86	1305207.83	36° 56' 28.680 N	107° 23' 49.416 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
	13100.00	0.73	210.37	3099.66	-29.56	6.51	0.00	0.00	30.12	
	2501.02	90.00	173.28	3354.00	-284.98	34.63	22.30	-37.09	287.07	
	5748.51	90.00	173.28	3354.00	-3510.16	414.65	0.00	0.00	3534.56	BHL (SJ32-5#111ST)



Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #111 ST
Wellbore: Re-Entry Horizontal OPE FTC
Design: Re-Entry Horizontal OPE FTC

Local Co-ordinate Reference: Well San Juan 32-5 Unit #111 ST
TVD Reference: RKB-15' @ 6669.00usft (D&J #1)
MD Reference: RKB-15' @ 6669.00usft (D&J #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Rio Arriba County
Map System:	US State Plane 1983
Geo Datum:	North American Datum 1983
Map Zone:	New Mexico Central Zone
System Datum:	Mean Sea Level

Site	Eul Canyon				
Site Position:		Northing:	2,173,184.73usft	Latitude:	36° 57' 59.000 N
From:	Lat/Long	Easting:	1,296,505.93usft	Longitude:	107° 25' 38.000 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.71 °

Well	San Juan 32-5 Unit #111 ST					
Well Position	+N/-S	0.00 usft	Northing:	2,163,942.86 usft	Latitude:	36° 56' 28.680 N
	+E/-W	0.00 usft	Easting:	1,305,207.83 usft	Longitude:	107° 23' 49.416 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,654.00usft

Wellbore	Re-Entry Horizontal OPE FTC				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/03/11	9.78	63.71	50,909

Design	Re-Entry Horizontal OPE FTC			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	173.26

Survey Program		Date	05/16/11		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
192.00	2,992.00	GYRO (Re-Entry Horizontal OPE FTC)	NS-GYRO-MS	North sensing gyrocompassing m/s	
3,077.00	5,776.00	MWD (Re-Entry Horizontal OPE FTC)	MWD	MWD - Standard	

Survey								
MD	Inc	Azi	TVD	N/S	E/W	DLeg	V. Sec	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
192.00	0.07	121.13	192.00	-0.06	0.10	0.04	0.07	
392.00	0.15	137.79	392.00	-0.32	0.38	0.04	0.36	
592.00	0.52	191.66	592.00	-1.40	0.37	0.22	1.43	
792.00	0.66	185.99	791.99	-3.43	0.07	0.08	3.42	
992.00	0.72	174.14	991.97	-5.83	0.08	0.08	5.80	
1,192.00	0.45	165.27	1,191.96	-7.84	0.41	0.14	7.83	
1,392.00	0.37	81.12	1,391.96	-8.50	1.24	0.28	8.59	
1,592.00	0.53	56.65	1,591.95	-7.89	2.65	0.12	8.15	
1,792.00	0.46	61.17	1,791.94	-7.00	4.13	0.04	7.43	
1,992.00	0.52	117.84	1,991.94	-7.03	5.64	0.23	7.65	

Company: Energen Resources
 Project: Rio Arriba County
 Site: Eul Canyon
 Well: San Juan 32-5 Unit #111 ST
 Wellbore: Re-Entry Horizontal OPE FTC
 Design: Re-Entry Horizontal OPE FTC

Local Co-ordinate Reference: Well San Juan 32-5 Unit #111 ST
 TVD Reference: RKB-15' @ 6669.00usft (D&J #1)
 MD Reference: RKB-15' @ 6669.00usft (D&J #1)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)
2,192.00	1.09	152.68	2,191.92	-9.15	7.31	0.36	9.94
2,392.00	1.89	178.20	2,391.85	-14.13	8.29	0.51	15.01
2,592.00	1.73	187.08	2,591.75	-20.43	8.02	0.16	21.23
2,792.00	1.02	187.02	2,791.69	-25.19	7.43	0.36	25.89
2,992.00	0.76	190.03	2,991.67	-28.26	6.98	0.13	28.89
3,077.00	0.73	205.95	3,076.66	-29.30	6.65	0.25	29.88
3,152.88	17.94	172.00	3,151.26	-41.40	8.07	22.85	42.06
3,184.65	25.15	177.36	3,180.80	-53.01	9.07	23.50	53.71
3,216.50	31.92	169.29	3,208.77	-68.07	10.95	24.42	68.88
3,248.30	39.75	165.54	3,234.54	-86.20	15.05	25.56	87.37
3,280.15	47.66	165.43	3,257.54	-107.49	20.57	24.84	109.16
3,311.99	54.26	166.23	3,277.59	-131.46	26.61	20.82	133.67
3,343.83	61.20	166.46	3,294.57	-157.60	32.96	21.81	160.38
3,375.66	68.76	163.96	3,308.03	-185.46	40.33	24.79	188.91
3,410.52	76.24	161.01	3,318.51	-217.13	50.35	22.92	221.54
3,442.00	78.79	162.36	3,325.31	-246.31	60.00	9.12	251.65
3,474.00	78.00	164.83	3,331.75	-276.38	68.86	7.95	282.55
3,506.00	77.21	165.39	3,338.62	-306.58	76.89	3.00	313.49
3,538.00	77.29	165.42	3,345.68	-336.78	84.75	0.27	344.40
3,569.00	79.58	165.74	3,351.90	-366.20	92.31	7.46	374.50
3,579.00	80.51	165.84	3,353.62	-375.74	94.73	9.35	384.27
Top of Coal @3579.00'MD;3353.62'TVD;384.27'VS							
3,601.00	82.57	166.07	3,356.86	-396.85	100.01	9.42	405.85
3,633.00	85.91	165.96	3,360.07	-427.74	107.71	10.44	437.43
3,665.00	88.99	166.68	3,361.50	-458.80	115.27	9.88	469.16
3,697.00	90.66	167.29	3,361.59	-489.98	122.47	5.56	500.96
3,729.00	90.92	170.59	3,361.15	-521.38	128.61	10.34	532.87
3,761.00	91.10	170.94	3,360.59	-552.96	133.74	1.23	564.83
3,792.00	91.45	170.84	3,359.90	-583.56	138.65	1.17	595.80
3,823.00	91.89	170.69	3,358.99	-614.14	143.62	1.50	626.75
3,854.00	92.33	170.74	3,357.85	-644.72	148.62	1.43	657.70
3,885.00	92.24	172.40	3,356.62	-675.35	153.16	5.36	688.66
3,915.00	91.10	173.48	3,355.74	-705.11	156.85	5.23	718.65
3,946.00	90.57	174.37	3,355.29	-735.94	160.13	3.34	749.64
3,976.00	91.10	174.51	3,354.85	-765.79	163.04	1.83	779.63
4,005.00	91.28	174.09	3,354.25	-794.64	165.91	1.58	808.62
4,036.00	91.80	174.67	3,353.42	-825.48	168.95	2.51	839.61
4,067.00	92.86	175.78	3,352.16	-856.35	171.53	4.95	870.56
4,098.00	91.10	176.23	3,351.09	-887.25	173.69	5.86	901.51
4,129.00	90.57	176.81	3,350.63	-918.19	175.57	2.53	932.45
4,159.00	89.78	177.58	3,350.54	-948.16	177.04	3.68	962.38
4,190.00	89.96	177.15	3,350.61	-979.12	178.46	1.50	993.30
4,219.00	90.57	175.74	3,350.48	-1,008.07	180.26	5.30	1,022.25
4,250.00	90.57	175.64	3,350.17	-1,038.98	182.59	0.32	1,053.23
4,280.00	89.69	176.44	3,350.10	-1,068.90	184.66	3.96	1,083.19

Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #111 ST
Wellbore: Re-Entry Horizontal OPE FTC
Design: Re-Entry Horizontal OPE FTC

Local Co-ordinate Reference: Well San Juan 32-5 Unit #111 ST
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North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)
4,311.00	89.52	177.04	3,350.32	-1,099.85	186.42	2.01	1,114.13
4,341.00	89.52	175.99	3,350.57	-1,129.80	188.25	3.50	1,144.08
4,372.00	88.81	175.18	3,351.02	-1,160.70	190.63	3.47	1,175.05
4,403.00	88.20	173.06	3,351.83	-1,191.52	193.81	7.11	1,206.04
4,433.00	88.46	172.71	3,352.70	-1,221.28	197.52	1.45	1,236.02
4,464.00	88.20	172.44	3,353.61	-1,252.01	201.53	1.21	1,267.01
4,494.00	88.72	172.52	3,354.41	-1,281.74	205.45	1.75	1,296.99
4,524.00	88.99	172.67	3,355.01	-1,311.48	209.32	1.03	1,326.99
4,555.00	89.08	173.33	3,355.53	-1,342.25	213.09	2.15	1,357.98
4,585.00	88.81	173.48	3,356.09	-1,372.04	216.54	1.03	1,387.98
4,616.00	89.16	174.37	3,356.64	-1,402.86	219.82	3.08	1,418.97
4,646.00	88.55	175.37	3,357.24	-1,432.74	222.50	3.90	1,448.95
4,677.00	87.32	176.04	3,358.35	-1,463.63	224.82	4.52	1,479.90
4,708.00	86.00	175.09	3,360.16	-1,494.48	227.21	5.24	1,510.82
4,739.00	86.88	173.74	3,362.08	-1,525.28	230.23	5.19	1,541.75
4,769.00	87.32	173.66	3,363.60	-1,555.06	233.51	1.49	1,571.72
4,800.00	87.41	173.97	3,365.03	-1,585.84	236.85	1.04	1,602.68
4,830.00	86.97	174.05	3,366.50	-1,615.64	239.98	1.49	1,632.64
4,861.00	87.67	173.44	3,367.95	-1,646.42	243.35	2.99	1,663.61
4,891.00	87.32	172.92	3,369.26	-1,676.18	246.91	2.09	1,693.58
4,921.00	88.02	171.61	3,370.48	-1,705.89	250.94	4.95	1,723.55
4,952.00	88.90	169.04	3,371.31	-1,736.43	256.15	8.76	1,754.49
4,983.00	88.99	169.82	3,371.88	-1,766.90	261.84	2.53	1,785.42
5,012.00	90.13	170.22	3,372.10	-1,795.46	266.86	4.17	1,814.37
5,043.00	90.57	170.84	3,371.91	-1,826.04	271.96	2.45	1,845.33
5,074.00	92.15	170.74	3,371.18	-1,856.63	276.92	5.11	1,876.30
5,104.00	93.39	171.85	3,369.73	-1,886.25	281.46	5.54	1,906.24
5,135.00	93.21	172.42	3,367.94	-1,916.90	285.69	1.93	1,937.18
5,165.00	92.68	173.53	3,366.40	-1,946.64	289.36	4.10	1,967.14
5,196.00	92.86	173.87	3,364.91	-1,977.41	292.75	1.24	1,998.11
5,227.00	92.42	173.69	3,363.48	-2,008.20	296.11	1.53	2,029.07
5,258.00	91.54	173.25	3,362.41	-2,038.98	299.63	3.17	2,060.05
5,289.00	91.71	173.26	3,361.53	-2,069.75	303.27	0.55	2,091.04
5,320.00	91.28	174.15	3,360.72	-2,100.55	306.67	3.19	2,122.03
5,349.00	90.40	174.49	3,360.29	-2,129.41	309.54	3.25	2,151.02
5,380.00	90.40	174.35	3,360.08	-2,160.26	312.55	0.45	2,182.01
5,410.00	90.84	174.09	3,359.75	-2,190.11	315.58	1.70	2,212.01
5,441.00	90.75	173.37	3,359.32	-2,220.92	318.96	2.34	2,243.00
5,472.00	90.40	173.26	3,359.01	-2,251.71	322.57	1.18	2,274.00
5,503.00	91.01	172.90	3,358.63	-2,282.48	326.30	2.28	2,305.00
5,534.00	90.84	172.75	3,358.13	-2,313.23	330.18	0.73	2,335.99
5,564.00	90.57	172.65	3,357.76	-2,342.99	333.99	0.96	2,365.99
5,595.00	90.04	172.75	3,357.60	-2,373.73	337.93	1.74	2,396.99
5,625.00	90.04	172.38	3,357.57	-2,403.48	341.81	1.23	2,426.99

Company: Energen Resources
 Project: Rio Arriba County
 Site: Eul Canyon
 Well: San Juan 32-5 Unit #111 ST
 Wellbore: Re-Entry Horizontal OPE FTC
 Design: Re-Entry Horizontal OPE FTC

Local Co-ordinate Reference: Well San Juan 32-5 Unit #111 ST
 TVD Reference: RKB-15' @ 6669.00usft (D&J #1)
 MD Reference: RKB-15' @ 6669.00usft (D&J #1)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)
5,657.00	89.52	171.38	3,357.70	-2,435.16	346.33	3.52	2,458.98
5,689.00	90.13	172.50	3,357.79	-2,466.84	350.81	3.99	2,490.97
5,727.00	89.43	173.87	3,357.94	-2,504.57	355.32	4.05	2,528.97
5,776.00	89.43	173.87	3,358.43	-2,553.29	360.56	0.00	2,577.96

Projection to Bit @5776.00'MD;3358.43'TVD;2577.96'VS

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,579.00	3,353.62	-375.74	94.73	Top of Coal @3579.00'MD;3353.62'TVD;384.27'VS
5,776.00	3,358.43	-2,553.29	360.56	Projection to Bit @5776.00'MD;3358.43'TVD;2577.96'VS

Checked By: _____ Approved By: _____ Date: _____