

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****As Drilled Plat******WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number 30-039-29839	² Pool Code 72319, 71599	³ Pool Name Blanco-Mesaverde / Basin-Dakota
⁴ Property Code 306755	⁵ Property Name Jicarilla A	⁶ Well Number 8N
⁷ OGRID No. 143199	⁸ Operator Name Enervest Operating, L.L.C.	⁹ Elevation 6665' GL

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
J	17	26N	5W		1420	South	2475	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
J	17	26N	5W		1432	South	2563	East	Rio Arriba

¹² Dedicated Acres MV-E/320ac DK-E/320ac	¹³ Joint or Infill Y	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16				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>Bridget Helfrich</i> 7-26-11 Signature Date Bridget Helfrich Printed Name bhelfrich@enervest.net E-mail Address
	SECTION 17	Blanco-Mesaverde	320ac	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. Date of Survey Signature and Seal of Professional Surveyor Certificate Number
		Basin-Dakota	320 ac	
		2475' (SHL) 2563' (BHL)		
		1420' (SHL) 1432' (BHL)		



A

Operator: EnerVest Operating, L.L.C.
Well: **Jicarilla A #008N**
County: Rio Arriba
API: 30-039-29839
Location: Sec 17 – Twp 26N – Rge 5W
1420' FSL and 2475' FEL (Unit J)

DEVIATION REPORT

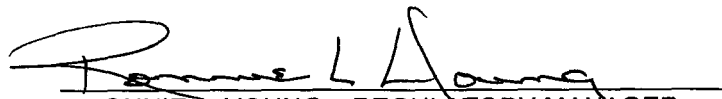
120'	0.25°
240'	0.50°
400'	1.25°
533'	1.75°
757'	.75°
1199'	1.25°
1580'	.25°
2087'	.50°
2563'	.25°
3105'	.50°
3450'	.50°
3991'	2.25°
4247'	4.50°
4470'	.75°
4830'	3.00°
5048'	5.00°
5112'	5.00°
5217'	3.00°
5314'	6.00°
5347'	6.00°
5402'	5.29°
5466'	6.48°
5530'	5.49°
5594'	3.70°
5640'	2.41°
5723'	3.00°
5785'	5.92°
5849'	5.62°
5912'	4.86°
5977'	4.40°
6041'	4.13°
6105'	4.20°
6170'	3.95°

RCVD JUL 29 '11
OIL CONS. DIV.
DIST. 3

6234'	3.37°
6298'	2.67°
6363'	3.15°
6427'	3.23°
6492'	3.10°
6556'	2.83°
6620'	2.11°
6685'	2.81°
6749'	2.93°
6812'	2.77°
6876'	2.39°
6939'	2.24°
7003'	2.03°
7067'	1.90°
7131'	1.77°
7196'	1.83°
7260'	2.03°
7324'	1.82°
7388'	2.06°
7452'	1.92°
7539'	2.06°
7585'	2.06°

TD 7600' 2.00°

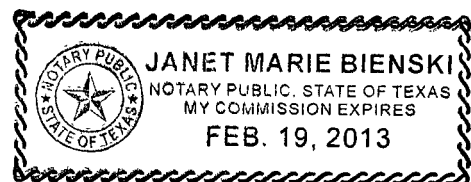
SIGNED BY:


RONNIE L. YOUNG - REGULATORY MANAGER

STATE OF TEXAS §
COUNTY OF HARRIS §

ON THIS 19th DAY OF July, 2011, BEFORE ME, JANET MARIE BIENSKI,
A NOTARY PUBLIC, PERSONALLY APPEARED RONNIE L. YOUNG, WHO ACKNOWLEDGED
AND EXECUTED THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.


NOTARY PUBLIC





Scientific Drilling

EnerVest Operating LLC

Rio Arriba County, NM

Jicarilla

Jicarilla A #8N

OH

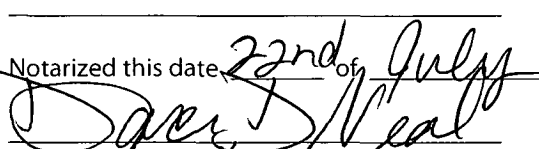
Design: OH

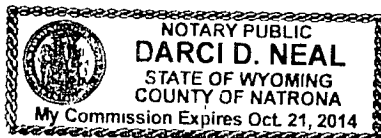
Standard Survey Report

22 July, 2011

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 22nd of July, 2011.


Notary Signature
County of Natrona
State of Wyoming



RCVD JUL 29 '11
OIL CONS. DIV.
DIST. 3



Scientific Drilling

Survey Report

Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicanilla A #8N
Project:	Rio Arriba County, NM	TVD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Site:	Jicanilla	MD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Well:	Jicanilla A #8N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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

Site	Jicanilla				
Site Position:		Northing:	1,995,697.30 usft	Latitude:	36° 29' 1.464 N
From:	Lat/Long	Easting:	2,855,703.11 usft	Longitude:	107° 22' 56.028 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.27 °

Well	Jicanilla A #8N, 1420' FSL 2475' FEL Sec 17 T26N R5W					
Well Position	+N/-S	0.00 ft	Northing:	1,995,697.30 usft	Latitude:	36° 29' 1.464 N
	+E/-W	0.00 ft	Easting:	2,855,703.11 usft	Longitude:	107° 22' 56.028 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,665.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011-05-08	9.71	63.31	50,647

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	277.79	

Survey Program	Date	2011-07-22			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.00	3,400.00	Survey #1 (OH)	Standard Keeper	Standard Wireline Keeper ver 1.0.2	
3,425.00	5,347.00	Survey #2 (OH)	Standard Keeper	Standard Wireline Keeper ver 1.0.2	
5,402.00	7,585.00	Survey #3 - MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50.00	0.36	199.94	50.00	-0.15	-0.05	0.03	0.72	0.72	0.00	
First SDI Gyro Survey										
100.00	0.61	208.10	100.00	-0.53	-0.23	0.16	0.52	0.50	16.32	
150.00	0.66	251.70	150.00	-0.86	-0.63	0.51	0.95	0.10	87.20	
200.00	0.98	277.22	199.99	-0.89	-1.33	1.20	0.96	0.64	51.04	
250.00	1.37	288.25	249.98	-0.65	-2.32	2.21	0.90	0.78	22.06	
300.00	1.47	283.17	299.96	-0.32	-3.51	3.44	0.32	0.20	-10.16	
350.00	1.64	286.52	349.95	0.03	-4.82	4.78	0.39	0.34	6.70	

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Site:	Jicarilla	MD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Well:	Jicarilla A #8N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
400.00	1.78	290.20	399.92	0.50	-6.24	6.25	0.36	0.28	7.36
450.00	1.70	292.52	449.90	1.06	-7.65	7.72	0.21	-0.16	4.64
500.00	1.59	287.14	499.88	1.54	-9.00	9.13	0.38	-0.22	-10.76
550.00	1.44	286.77	549.86	1.93	-10.26	10.43	0.30	-0.30	-0.74
600.00	1.44	286.92	599.85	2.29	-11.47	11.67	0.01	0.00	0.30
650.00	1.31	289.28	649.83	2.67	-12.61	12.85	0.28	-0.26	4.72
700.00	1.20	304.42	699.82	3.15	-13.58	13.88	0.70	-0.22	30.28
750.00	1.20	300.42	749.81	3.71	-14.46	14.83	0.17	0.00	-8.00
800.00	1.22	296.64	799.80	4.21	-15.39	15.82	0.16	0.04	-7.56
850.00	1.26	295.59	849.79	4.69	-16.36	16.85	0.09	0.08	-2.10
900.00	1.24	298.47	899.77	5.19	-17.33	17.88	0.13	-0.04	5.76
950.00	1.20	297.27	949.76	5.68	-18.27	18.88	0.09	-0.08	-2.40
1,000.00	1.21	291.27	999.75	6.12	-19.23	19.88	0.25	0.02	-12.00
1,050.00	1.04	279.46	1,049.74	6.38	-20.17	20.85	0.57	-0.34	-23.62
1,100.00	0.75	268.27	1,099.74	6.45	-20.94	21.63	0.67	-0.58	-22.38
1,150.00	0.46	263.53	1,149.73	6.41	-21.47	22.14	0.59	-0.58	-9.48
1,200.00	0.40	274.34	1,199.73	6.40	-21.84	22.51	0.20	-0.12	21.62
1,250.00	0.33	288.76	1,249.73	6.46	-22.16	22.83	0.23	-0.14	28.84
1,300.00	0.32	297.65	1,299.73	6.58	-22.42	23.10	0.10	-0.02	17.78
1,350.00	0.49	310.01	1,349.73	6.78	-22.70	23.41	0.38	0.34	24.72
1,400.00	0.57	312.19	1,399.73	7.08	-23.05	23.80	0.16	0.16	4.36
1,450.00	0.58	307.40	1,449.72	7.40	-23.44	24.22	0.10	0.02	-9.58
1,500.00	0.62	298.27	1,499.72	7.68	-23.88	24.70	0.21	0.08	-18.26
1,550.00	0.56	289.24	1,549.72	7.89	-24.34	25.19	0.22	-0.12	-18.06
1,600.00	0.57	279.02	1,599.72	8.01	-24.82	25.68	0.20	0.02	-20.44
1,650.00	0.55	291.30	1,649.71	8.14	-25.29	26.16	0.24	-0.04	24.56
1,700.00	0.58	317.58	1,699.71	8.41	-25.68	26.59	0.52	0.06	52.56
1,750.00	0.64	315.18	1,749.71	8.80	-26.05	27.00	0.13	0.12	-4.80
1,800.00	0.61	310.98	1,799.71	9.17	-26.45	27.45	0.11	-0.06	-8.40
1,850.00	0.62	302.30	1,849.70	9.49	-26.88	27.92	0.19	0.02	-17.36
1,900.00	0.59	294.99	1,899.70	9.74	-27.34	28.41	0.17	-0.06	-14.62
1,950.00	0.64	288.32	1,949.70	9.94	-27.84	28.93	0.17	0.10	-13.34
2,000.00	0.60	289.79	1,999.69	10.12	-28.35	29.46	0.09	-0.08	2.94
2,050.00	0.58	288.88	2,049.69	10.29	-28.84	29.96	0.04	-0.04	-1.82
2,100.00	0.46	295.46	2,099.69	10.45	-29.26	30.40	0.27	-0.24	13.16
2,150.00	0.36	313.88	2,149.69	10.65	-29.55	30.72	0.33	-0.20	36.84
2,200.00	0.43	303.69	2,199.69	10.86	-29.82	31.02	0.20	0.14	-20.38
2,250.00	0.48	296.02	2,249.69	11.06	-30.17	31.39	0.16	0.10	-15.34
2,300.00	0.42	292.19	2,299.68	11.22	-30.52	31.76	0.13	-0.12	-7.66
2,350.00	0.46	288.03	2,349.68	11.35	-30.88	32.14	0.10	0.08	-8.32
2,400.00	0.51	286.11	2,399.68	11.47	-31.29	32.56	0.11	0.10	-3.84
2,450.00	0.53	283.38	2,449.68	11.59	-31.73	33.01	0.06	0.04	-5.46
2,500.00	0.38	282.96	2,499.68	11.68	-32.11	33.40	0.30	-0.30	-0.84



Scientific Drilling

Survey Report

Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicanilla A #8N
Project:	Rio Arriba County, NM	TVD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Site:	Jicanilla	MD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Well:	Jicanilla A #8N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,550.00	0.37	289.29	2,549.68	11.77	-32.43	33.72	0.09	-0.02	12.66
2,600.00	0.37	277.60	2,599.68	11.85	-32.74	34.04	0.15	0.00	-23.38
2,650.00	0.33	255.27	2,649.67	11.83	-33.04	34.34	0.28	-0.08	-44.66
2,700.00	0.34	266.77	2,699.67	11.79	-33.33	34.62	0.14	0.02	23.00
2,750.00	0.41	274.13	2,749.67	11.79	-33.65	34.94	0.17	0.14	14.72
2,800.00	0.40	280.38	2,799.67	11.83	-34.00	35.29	0.09	-0.02	12.50
2,850.00	0.34	288.46	2,849.67	11.91	-34.32	35.61	0.16	-0.12	16.16
2,900.00	0.34	293.20	2,899.67	12.02	-34.59	35.90	0.06	0.00	9.48
2,950.00	0.32	294.38	2,949.67	12.13	-34.86	36.18	0.04	-0.04	2.36
3,000.00	0.22	290.46	2,999.67	12.23	-35.07	36.41	0.20	-0.20	-7.84
3,050.00	0.20	280.41	3,049.67	12.27	-35.25	36.59	0.08	-0.04	-20.10
3,100.00	0.30	261.93	3,099.67	12.27	-35.46	36.80	0.25	0.20	-36.96
3,150.00	0.43	242.91	3,149.67	12.17	-35.76	37.08	0.35	0.26	-38.04
3,200.00	0.54	232.57	3,199.66	11.94	-36.12	37.40	0.28	0.22	-20.68
3,250.00	0.49	220.21	3,249.66	11.63	-36.44	37.68	0.24	-0.10	-24.72
3,300.00	0.57	220.65	3,299.66	11.28	-36.74	37.93	0.16	0.16	0.88
3,350.00	0.81	216.79	3,349.66	10.81	-37.11	38.24	0.49	0.48	-7.72
3,400.00	0.87	215.47	3,399.65	10.22	-37.55	38.58	0.13	0.12	-2.64
TIP									
3,425.00	0.82	217.13	3,424.65	9.92	-37.76	38.76	0.22	-0.20	6.64
First SDI Gyro Survey									
3,450.00	0.77	219.84	3,449.65	9.65	-37.98	38.94	0.25	-0.20	10.84
3,475.00	0.71	228.63	3,474.64	9.42	-38.20	39.13	0.51	-0.24	35.16
3,500.00	0.67	238.78	3,499.64	9.24	-38.45	39.34	0.51	-0.16	40.60
3,525.00	0.64	244.48	3,524.64	9.10	-38.70	39.57	0.29	-0.12	22.80
3,550.00	0.61	245.80	3,549.64	8.99	-38.94	39.80	0.13	-0.12	5.28
3,575.00	0.58	247.25	3,574.64	8.89	-39.18	40.02	0.13	-0.12	5.80
3,600.00	0.75	264.18	3,599.64	8.82	-39.46	40.29	1.03	0.68	67.72
3,625.00	0.96	274.58	3,624.63	8.82	-39.83	40.66	1.04	0.84	41.60
3,650.00	1.12	279.37	3,649.63	8.88	-40.28	41.11	0.73	0.64	19.16
3,675.00	1.18	280.85	3,674.62	8.96	-40.78	41.62	0.27	0.24	5.92
3,700.00	1.25	282.17	3,699.62	9.07	-41.30	42.14	0.30	0.28	5.28
3,725.00	1.49	284.64	3,724.61	9.21	-41.88	42.74	0.99	0.96	9.88
3,750.00	1.75	286.56	3,749.60	9.40	-42.56	43.44	1.06	1.04	7.68
3,775.00	2.00	287.83	3,774.59	9.64	-43.34	44.25	1.01	1.00	5.08
3,800.00	2.14	288.41	3,799.57	9.92	-44.20	45.13	0.57	0.56	2.32
3,825.00	2.29	288.92	3,824.55	10.23	-45.11	46.08	0.61	0.60	2.04
3,850.00	2.45	290.38	3,849.53	10.58	-46.09	47.09	0.68	0.64	5.84
3,875.00	2.60	292.16	3,874.51	10.98	-47.11	48.17	0.68	0.60	7.12
3,900.00	2.77	293.33	3,899.48	11.43	-48.19	49.30	0.71	0.68	4.68
3,925.00	3.03	290.90	3,924.45	11.91	-49.36	50.52	1.15	1.04	-9.72
3,950.00	3.30	288.87	3,949.41	12.38	-50.66	51.87	1.17	1.08	-8.12
3,975.00	3.51	289.50	3,974.37	12.87	-52.06	53.33	0.85	0.84	2.52
4,000.00	3.67	292.03	3,999.32	13.42	-53.53	54.85	0.90	0.64	10.12



Scientific Drilling Survey Report

Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicarilla A #8N
Project:	Rio Arriba County, NM	TVD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Site:	Jicarilla	MD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,025.00	3.83	294.35	4,024.26	14.07	-55.03	56.43	0.88	0.64	9.28
4,050.00	3.91	292.87	4,049.21	14.74	-56.58	58.05	0.51	0.32	-5.92
4,075.00	4.00	291.38	4,074.15	15.39	-58.17	59.72	0.55	0.36	-5.96
4,100.00	4.09	290.09	4,099.08	16.02	-59.82	61.44	0.51	0.36	-5.16
4,125.00	4.21	289.05	4,124.02	16.62	-61.53	63.21	0.57	0.48	-4.16
4,150.00	4.32	288.07	4,148.95	17.21	-63.29	65.04	0.53	0.44	-3.92
4,175.00	4.31	287.45	4,173.88	17.79	-65.08	66.89	0.19	-0.04	-2.48
4,200.00	4.28	286.88	4,198.81	18.34	-66.87	68.74	0.21	-0.12	-2.28
4,225.00	4.23	286.53	4,223.74	18.87	-68.65	70.57	0.23	-0.20	-1.40
4,250.00	4.16	286.72	4,248.67	19.40	-70.40	72.38	0.29	-0.28	0.76
4,275.00	4.09	286.91	4,273.61	19.92	-72.12	74.15	0.29	-0.28	0.76
4,300.00	4.01	286.56	4,298.55	20.42	-73.81	75.90	0.33	-0.32	-1.40
4,325.00	3.93	286.00	4,323.49	20.91	-75.47	77.61	0.36	-0.32	-2.24
4,350.00	3.86	285.56	4,348.43	21.37	-77.11	79.29	0.30	-0.28	-1.76
4,375.00	3.86	285.59	4,373.37	21.82	-78.73	80.96	0.01	0.00	0.12
4,400.00	3.86	285.63	4,398.31	22.28	-80.35	82.63	0.01	0.00	0.16
4,425.00	3.91	285.56	4,423.26	22.73	-81.98	84.30	0.20	0.20	-0.28
4,450.00	3.98	285.44	4,448.20	23.19	-83.64	86.01	0.28	0.28	-0.48
4,475.00	4.05	285.36	4,473.14	23.66	-85.32	87.74	0.28	0.28	-0.32
4,500.00	4.13	285.57	4,498.07	24.13	-87.04	89.51	0.33	0.32	0.84
4,525.00	4.21	285.77	4,523.01	24.62	-88.79	91.31	0.33	0.32	0.80
4,550.00	4.25	285.55	4,547.94	25.12	-90.57	93.14	0.17	0.16	-0.88
4,575.00	4.25	284.91	4,572.87	25.61	-92.36	94.98	0.19	0.00	-2.56
4,600.00	4.26	284.28	4,597.80	26.07	-94.15	96.82	0.19	0.04	-2.52
4,625.00	4.29	283.58	4,622.73	26.52	-95.96	98.67	0.24	0.12	-2.80
4,650.00	4.32	282.88	4,647.66	26.95	-97.79	100.54	0.24	0.12	-2.80
4,675.00	4.32	282.26	4,672.59	27.36	-99.63	102.41	0.19	0.00	-2.48
4,700.00	4.30	281.72	4,697.52	27.75	-101.46	104.29	0.18	-0.08	-2.16
4,725.00	4.27	281.17	4,722.45	28.12	-103.29	106.15	0.20	-0.12	-2.20
4,750.00	4.35	280.97	4,747.38	28.48	-105.14	108.03	0.33	0.32	-0.80
4,775.00	4.44	280.83	4,772.30	28.85	-107.02	109.94	0.36	0.36	-0.56
4,800.00	4.56	281.12	4,797.23	29.22	-108.94	111.90	0.49	0.48	1.16
4,825.00	4.76	282.58	4,822.14	29.64	-110.93	113.93	0.93	0.80	5.84
4,850.00	4.95	283.92	4,847.06	30.12	-112.99	116.03	0.89	0.76	5.36
4,875.00	4.97	285.32	4,871.96	30.67	-115.08	118.18	0.49	0.08	5.60
4,900.00	4.91	286.80	4,896.87	31.26	-117.15	120.31	0.56	-0.24	5.92
4,925.00	4.86	288.11	4,921.78	31.90	-119.18	122.41	0.49	-0.20	5.24
4,950.00	4.80	287.52	4,946.69	32.55	-121.19	124.48	0.31	-0.24	-2.36
4,975.00	4.75	286.91	4,971.60	33.16	-123.17	126.53	0.29	-0.20	-2.44
5,000.00	4.78	286.13	4,996.52	33.75	-125.16	128.58	0.29	0.12	-3.12
5,025.00	4.89	285.24	5,021.43	34.32	-127.19	130.67	0.53	0.44	-3.56
5,050.00	4.99	284.40	5,046.33	34.87	-129.27	132.81	0.49	0.40	-3.36
5,075.00	4.87	282.37	5,071.24	35.37	-131.36	134.95	0.85	-0.48	-8.12



Scientific Drilling Survey Report

Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicarilla A #8N
Project:	Rio Arriba County, NM	TVD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Site:	Jicarilla	MD Reference:	GL 6665' & KB 17' @ 6682.00ft (LW #1)
Well:	Jicarilla A #8N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,100.00	4.76	280.23	5,096.15	35.78	-133.42	137.04	0.84	-0.44	-8.56	
5,125.00	4.66	278.44	5,121.07	36.11	-135.45	139.09	0.71	-0.40	-7.16	
5,150.00	4.68	280.77	5,145.99	36.45	-137.45	141.13	0.76	0.08	9.32	
5,175.00	4.70	283.08	5,170.90	36.88	-139.45	143.16	0.76	0.08	9.24	
5,200.00	4.56	283.86	5,195.82	37.35	-141.42	145.17	0.61	-0.56	3.12	
5,225.00	4.33	283.23	5,220.75	37.80	-143.30	147.10	0.94	-0.92	-2.52	
5,250.00	4.41	283.42	5,245.67	38.24	-145.15	149.00	0.33	0.32	0.76	
5,275.00	4.80	283.31	5,270.59	38.70	-147.11	150.99	1.56	1.56	-0.44	
5,300.00	5.06	282.52	5,295.50	39.18	-149.20	153.13	1.07	1.04	-3.16	
5,325.00	5.24	281.40	5,320.40	39.65	-151.39	155.37	0.82	0.72	-4.48	
5,347.00	5.40	280.46	5,342.30	40.03	-153.40	157.41	0.83	0.73	-4.27	
Last SDI Gyro Survey										
5,402.00	5.29	278.68	5,397.06	40.89	-158.45	162.53	0.36	-0.20	-3.24	
First SDI MWD Survey										
5,466.00	6.50	273.47	5,460.73	41.55	-164.98	169.09	2.07	1.89	-8.14	
5,530.00	5.49	283.22	5,524.38	42.47	-171.58	175.75	2.24	-1.58	15.23	
5,594.00	3.70	284.04	5,588.17	43.67	-176.56	180.85	2.80	-2.80	1.28	
5,658.00	1.83	265.83	5,652.09	44.10	-179.59	183.91	3.19	-2.92	-28.45	
5,723.00	3.00	142.09	5,717.06	42.68	-179.58	183.70	6.61	1.80	-190.37	
5,785.00	5.92	121.80	5,778.87	39.71	-175.86	179.62	5.28	4.71	-32.73	
5,849.00	5.62	107.05	5,842.55	37.06	-170.06	173.51	2.36	-0.47	-23.05	
5,912.00	4.86	101.24	5,905.29	35.63	-164.49	167.80	1.47	-1.21	-9.22	
5,977.00	4.49	101.65	5,970.07	34.58	-159.30	162.52	0.57	-0.57	0.63	
6,041.00	4.13	98.04	6,033.89	33.75	-154.56	157.71	0.70	-0.56	-5.64	
6,105.00	4.20	104.55	6,097.72	32.84	-150.01	153.08	0.75	0.11	10.17	
6,170.00	3.95	107.12	6,162.56	31.59	-145.57	148.51	0.48	-0.38	3.95	
6,234.00	3.37	110.59	6,226.43	30.27	-141.70	144.50	0.97	-0.91	5.42	
6,298.00	2.65	112.27	6,290.34	29.05	-138.57	141.23	1.13	-1.13	2.63	
6,363.00	3.15	112.32	6,355.25	27.80	-135.53	138.05	0.77	0.77	0.08	
6,427.00	3.23	109.84	6,419.15	26.52	-132.21	134.58	0.25	0.13	-3.88	
6,492.00	3.10	105.93	6,484.05	25.42	-128.79	131.05	0.39	-0.20	-6.02	
6,556.00	2.83	102.32	6,547.97	24.61	-125.59	127.76	0.51	-0.42	-5.64	
6,620.00	2.11	105.26	6,611.91	23.96	-122.91	125.02	1.14	-1.13	4.59	
6,685.00	2.81	115.01	6,676.85	22.97	-120.31	122.31	1.25	1.08	15.00	
6,749.00	2.93	115.37	6,740.77	21.61	-117.41	119.25	0.19	0.19	0.56	
6,812.00	2.77	108.16	6,803.69	20.44	-114.51	116.22	0.62	-0.25	-11.44	
6,876.00	2.39	109.35	6,867.63	19.52	-111.78	113.39	0.60	-0.59	1.86	
6,939.00	2.24	107.55	6,930.57	18.71	-109.37	110.89	0.26	-0.24	-2.86	
7,003.00	2.03	108.62	6,994.53	17.98	-107.10	108.55	0.33	-0.33	1.67	
7,067.00	1.90	114.79	7,058.49	17.17	-105.06	106.42	0.39	-0.20	9.64	
7,131.00	1.77	119.94	7,122.46	16.23	-103.24	104.49	0.33	-0.20	8.05	
7,196.00	1.83	106.07	7,187.43	15.44	-101.37	102.53	0.67	0.09	-21.34	
7,260.00	2.03	98.53	7,251.39	14.99	-99.27	100.39	0.50	0.31	-11.78	
7,324.00	1.82	104.91	7,315.36	14.56	-97.17	98.25	0.47	-0.33	9.97	



Scientific Drilling Survey Report

Company:	EnerVest Operating LLC	Local Co-ordinate Reference:	Well Jicarilla A #8N
Project:	Rio Arriba County, NM	TVD Reference:	GL 6665' & KB 17' @ 6682 00ft (LW #1)
Site:	Jicarilla	MD Reference:	GL 6665' & KB 17' @ 6682 00ft (LW #1)
Well:	Jicarilla A #8N	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,388.00	2.06	105.42	7,379.32	13.99	-95.08	96.10	0.38	0.38	0.80
7,452.00	1.92	104.40	7,443.28	13.42	-92.93	93.89	0.23	-0.22	-1.59
7,539.00	2.06	107.31	7,530.23	12.59	-90.03	90.90	0.20	0.16	3.34
Last SDI MWD Survey									
7,585.00	2.06	107.31	7,576.20	12.10	-88.45	89.27	0.00	0.00	0.00
Projection to TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
50.00	50.00	-0.15	-0.05	First SDI Gyro Survey
3,490.00	3,489.64	9.23	-38.29	Last SDI Gyro Survey

Checked By: _____ Approved By: _____ Date: _____