State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-4 or 3160-5 form.

Operator Signature Date: December 13, 2013

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC

☐ Location Change ☐ Other: _____

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-039-31179-00-00	JICARILLA APACHE 102	012N	ENERVEST OPERATING L.L.C.	G	N	Rio Arriba	J	H	9	26	N	4	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations

Hold C-104 for directional survey and "as drilled plat"

_____ 12-20-2013

NMOCD Approved by Signature Date

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
DEC 16 2013
Farmington Field Office

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

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.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

5. Lease Serial No.
Jicarilla Contract 102

6. If Indian, Allottee or Tribe Name
Jicarilla Apache

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
Jicarilla Apache 102 #12N

2. Name of Operator
EnerVest Operating, L.L.C.

9. API Well No.
30-039-31179

3a. Address
1001 Fannin Street, Suite 800
Houston, TX 77002

3b. Phone No. *(include area code)*
713-659-3500

10. Field and Pool or Exploratory Area
Blanco Mesaverde/Basin Dakota

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SHL: 1387' FNL & 304' FEL (UL H), Sec. 9 T26N R04W
Proposed BHL: 1070' FNL & 670' FEL (UL A), Sec. 9 T26N R04W

11. County or Parish, State
Rio Arriba, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

RCVD DEC 19 '13
OIL CONS. DIV.
DIST. 3

EnerVest Operating, L.L.C. intends to modify the drilling plan submitted with the original APD dated 2/01/2013. The surface casing will be 8 5/8" 24# J-55 and the production casing will be 4 1/2" 11.6# N-80 with a hole size of 7 7/8".

The modified drilling plan is attached.

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

Title Regulatory Analyst

Signature

Date 12/13/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by
William Tambekou

Title Petroleum Engineer

Date 12/17/2013

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 FFO

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.

(Instructions on page 2)

NMOCD

EnerVest Operating, LLC
Jicarilla Apache 102 # 12N
Surface: 1387' FNL, 304' FEL Unit H, Sec. 9, T26N R04W
Lat: 36.50427, Long: 107.24855
Bottom Hole: 1070' FNL, 670' FEL Unit A, Sec 9, T26N, R04W
Lat: 36.50515, Long: 107.24976
Rio Arriba County, NM
GL Elev: 6946'

Revised Drilling Plan (11-26-2013)

All Lease and /or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations, BLM Onshore orders and NMOCD rules. The operator is fully responsible for the actions of its subcontractors. A copy of the APD and Conditions of Approval will be available to the field representatives to ensure compliance.

4.1, 4.2 ESTIMATED (TVD) FORMATION TOPS (KB) and NOTABLE ZONES:

The following are estimates of formation and proposed casing depths.

Formation Name	Depth (TVD)	Rock Type	Comments
San Jose	Surface	Sandstone	
Ojo Alamo	2948'	Sandstone	Possible Gas, Water
Kirtland	3452'	Shale	
Fruitland	3498'	Coal, Shale, Sandstone	Possible Lost Circ, Gas, Water
Pictured Cliffs	3688'	Sandstone	Possible Lost Circ, Gas, water
Lewis	3935'	Shale	Sloughing Shale
Mesa Verde (Cliffhouse)	5363'	Sandstone	Possible Lost Circ, Gas, Water
Mesa Verde (Menefee)	5454''	Coal, Sandstone, Shale	Possible Lost Circ, Gas, Water
Mesa Verde (Point Lookout)	5874'	Sandstone	Possible Lost Circ, Gas, Water
Mancos	5940'	Shale	Sloughing Shale
Greenhorn	7788'	Limestone	Gas, Oil
Graneros	7823'	Shale	Gas, Oil, Water
Dakota	7841'	Sandstone	Gas, Oil, Water
Proposed Total Depth	8131'		

Fresh water zones will be adequately protected by setting and cementing the surface casing. All zones containing commercial quantities of oil or gas will be cased and cemented.

This well is to be drilled as a directionally drilled "S-shaped" well. The well is to be drilled vertically from surface to a kick off point at +/- 600'. The well will be directionally drilled at a 311 degree azimuth to a point approx 485'north and west of the surface location. At an estimated MD of +/- 3500' the well will be drilled vertically from that point to the estimated TD.

4.3 PRESSURE CONTROL:

Maximum expected pressure is ~1789 (.22 pressure gradient) psi. The drilling contract has not yet been awarded, thus the exact BOP and Choke Manifold model to be used is not yet known. A typical 11" 2000 psi model is pictured in Exhibits A & B.
A remote accumulator will be used, the pressures, capacities location of the remote and manual controls will be identified at the time of the BLM supervised BOP test.

BOP equipment, accumulator, choke manifold and all accessories will meet or exceed BLM requirements as listed in Onshore Order #2 for the 2M systems. The pressure control equipment considerations include but will not be limited to:

1. BOP will be a double gate ram preventer with a set of blind rams and a set of properly-sized pipe rams.
2. Accumulator will have sufficient capacity to close the BOP rams and retain 200 psi above pre charge.
3. Accumulator fluid volume is to be maintained at manufacturer's recommendations.
4. BOP will also have manual closing handles available.
5. 2" minimum kill line and kill line valves (2).
6. Choke manifold (2" lines) with 2 adjustable chokes with valves and gauge.
7. Manually operated Kelly cocks available.
8. Safety valve and sub(s) with adequate opening for all drill strings used.
9. Fill line and flow line above the upper-most BOP rams.

BOPs will be pressure tested; after initial installation, before drilling out from under all set and cemented casing strings and any time a seal is broken. The BOPs will also be pressure tested a minimum of once every 21 days by a 3rd party. Additionally, the BOPs will be operationally checked every 24 hours.
All tests and pressure tests will be recorded on IADC log.

Ram type preventors, choke manifold and related pressure control equipment will be pressure tested to the rated working pressure of 2000 psi (high) and 250 psi (low).

The casing strings will be pressure tested per BLM Onshore Order #2 for 30 min as follows:

a. Surface casing tested to 600 psi prior to drilling out the shoe.
b. Production casing will be tested to 6000 psi at the commencement of completion operations.

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4.4 PROPOSED CASING PROGRAM :

Hole/Casing Description	Hole Size	Casing OD	Weight lb/ft	Grade	Age	Connection	Top	Bottom
Surface	12 $^{1}/_{4}$"	8 $^{5}/_{8}$"	24	J-55	New	ST&C	0	500'
Prod Csg MD	7 $^{7}/_{8}$"	4 ½"	11.6	N-80	New	LT&C	0	8178'
TVD							0	8131'

Surface casing is to be cemented to surface. The production casing is to be cemented in 3 stages covering all zones of production potential and the 3rd stage is intended to circulate cement to surface.

4.5 CASING CEMENT:

A prototypical cementing program is listed as follows, site-specific cement designs will be produced for each well as the hole conditions warrant. The cement program will designed to meet the BLM Onshore Order #2 and NMOCD requirements.

Surface casing will be cemented to the surface.
Cement and properties; Mix and pump 297 sacks (413 cu ft) Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx). Volume will include 100% excess. Cement is to be displaced using a top plug.

Two centralizers will be run on the shoe joint, one centralizer each on the next two joints and then one centralizer on every third joint thereafter.
The surface casing will be pressure tested to 600 psi prior to drilling out the shoe.

Production casing will be cemented in 3 stages covering all zones of production potential and the 3rd stage is intended to circulate cement to surface. Volumes based on 45%-50% OH excess over gauge volume.

Stage 1 cement; mix and pump 520 sacks (1045 cu ft) premium lite high strength cement with CaCl2, cellophane, gilsonite and fluid loss agent. Slurry density is to be 12.5 (yield = 2.01 cu ft/sx).

DV tool at +/- 5025 ft. MD

Stage 2 Lead cement; mix and pump 270 sacks (575 cu ft) premium lite slurry with CaCl2, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 2 Tail cement; mix and pump 50 sacks (70 cu ft) Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx) or equivalent cement.

DV tool at +/- 3185 ft. MD

Stage 3 Lead cement; mix and pump 449 sacks (956 cu ft) premium lite slurry with CaCl2, cello flake and gilsonite. Estimated slurry density is to be 12.1 (yield = 2.13 cu ft/sx).

Stage 3 Tail cement; mix and pump 50 sacks (69 cu ft) Type III cement (or equivalent) cement. Slurry density is to be 14.6 (yield = 1.39 cu ft/sx) or equivalent cement.

Two centralizers will be run on the shoe joint, one centralizer on every third joint into the surface casing.

The production casing will be pressure tested for 30 minutes at the commencement of completion operations as outlined above

Where cement has not been circulated to surface (or to planned depth) a CBL or temperature survey will be run to determine the TOC for that casing string. A CBL log will be run in the production casing prior to the commencement of completion operations.

Cement specifications may vary slightly due to cement type and cement contractor availability.

4.6 MUD PROGRAM

Depth	Type	Wt / pp	Visc	Fluid Loss
0-500'	FW gel/Lime Spud Mud	8.4-9.0	30-40	N/C
500'-8178'	LSND/Gel sweeps, LCM as needed	8.7-9.0	20-32	4-6 cc

The well will be drilled utilizing a closed loop mud handling system. The closed loop system will comply with the NMOCD pit rules pertaining to the use of the system and disposal of the drill cuttings and waste. Drilling mud will be moved for re-use to drill subsequent wells whenever possible.
Viscosity, mud weight and other physical and chemical characteristics of the drilling mud will be varied as required to keep the hole clean, circulate drill cuttings, prevent caving, prevent lost circulation and maximize penetration rate.

Sufficient mud and materials will be kept on site to maintain mud properties and meet lost circulation or mud weight requirements at all times.
Mud design may change depending on well conditions, LCM, fluid loss and viscosity will be determined by the EnerVest representative and the mud engineer on site.

4.7 CORING, TESTING, & LOGGING

No cores or drill stem tests are planned. Well logs to be run are:

Surface to TD; GR/ Cement Bond Log, at the commencement of completion operations.
2500' to TD; Cased hole GR/Neutron

This well will be directionally drilled and a record of the deviation will be run while drilling. A deviation survey will be submitted at the conclusion of the well completion.

4.8 ANTICIPATED PRESSURES AND TEMPERATURES:

a.	Expected bottom hole pressure:	< 1789 psi
b.	Anticipated abnormal pressure:	None
c.	Anticipated abnormal temperatures:	None
d.	Anticipated hazardous gas (H2S):	None

If any of the foregoing conditions are unexpectedly encountered, suitable steps will be taken to mitigate according to accepted industry best practices.

4.9 OTHER INFORMATION:

The anticipated spud date is spring 2014. The spud date will be dependent on the weather conditions, road conditions and the Conditions of Approval.

The dirt work for road and well pad construction will commence upon approval of the APD and will be dependent on weather conditions.

The well will be spud after well pad construction is complete and a suitable rig becomes available. The duration of drilling operations is expected to be from two to three weeks. The drilling rig and associated equipment will be removed and preparations will be made for the completion of the well.

Completion will start about one to four weeks after the finish of the drilling operations. A completion rig will be moved in for the completion phase. The completion phase of the well is expected to +/- two weeks. The completion phase will include; perforating, acidizing, fracture stimulation and well testing.

Some events/situations may arise that could potentially change the starting date or project duration that are out of EnerVest's control. If such events/situations arise, the proper officials will be promptly notified.