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 3160-3 APD form.

Operator Signature Date: 4/3/14
Well information;
Operator Enervest, Well Name and Number Jicarilla Apache 124 #16

API# 30-039-31230, Section 23, Township 25 (N)S, Range 4 E(W)

Conditions of Approval:
(See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for (NSL) NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o 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
- o Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Charlie Perrin
NMOCD Approved by Signature

6-20-2014
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-3
(March 2012)

RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APR 09 2014

Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.	Jicarilla Contract 124
6. If Indian, Allottee or Tribe Name	Jicarilla Apache Tribe
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No.	Jicarilla Apache Tribal 124 #16
9. API Well No.	30-039- 31230
10. Field and Pool, or Exploratory	Lindreth Gallup-Dakota, West
11. Sec., T., R., M., or Blk. And Survey or Area	Sec.23 T25N R04W
12. County or Parish	Rio Arriba
13. State	NM

1a. Type of Work: [X] DRILL [ ] REENTER

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

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

3a. Address: 1001 Fannin St. Suite 800, Houston, Tx 77034

3b. Phone No. *(include area code)*: 713-790-847

4. Location of well *(Report location clearly and In accordance with any State requirements.*)*
At surface: 2420' FNL & 2457' FEL (UL G) Sec.23, T25N, R4W
At proposed prod. zone

14. Distance in miles and direction from the nearest town or post office*: 9 miles NE from Lindreth, NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
2420'	2560 Acres	NE/4 - 160 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/ BIA Bond No. on file**
1322'	7978'	RLB30007886

OIL CONS. DIV DIST. 3
JUN 12 2014

21. Elevations (Show whether DF. RT, GR, etc.)	22. Aproximate date work will start*	23. Estimated duration
7038' GL	6/1/2014	5 weeks

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1 shall be attached to this form:

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 shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by existing bond on file(see item 20 above).
5. Operator certification.
6. Such other site specific information and/ or plans as may be required by the a the BLM

25. Signature	Name *(Printed/ Typed)*	Date
Jeanie McMillan	Jeanie McMillan	4/3/2014

Title: Sr. Regulatory Analyst

Approved By *(Signature)*	Name *(Printed/ Typed)*	Date
Matthew Mankiewicz		6/12/14
Title: AFM	Office: FFO	

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 conduc 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.

* *(Instructions on page 2)*

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

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

NMOCD

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

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

RECEIVED
APR 09 2014
Farmington Field Office
Bureau of Land Management

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	[2] Pool Code	[3] Pool Name
30-039-31230	39189	Lindreth Gallup - Dakota, WEST

[4] Property Code	[5] Property Name	[6] Well Number
301276	JICARILLA APACHE TRIBAL 124	#16

[7] OGRID No.	[8] Operator Name	[9] Elevation
143199	ENERVEST OPERATING, LLC	7038'

[10] Surface Location

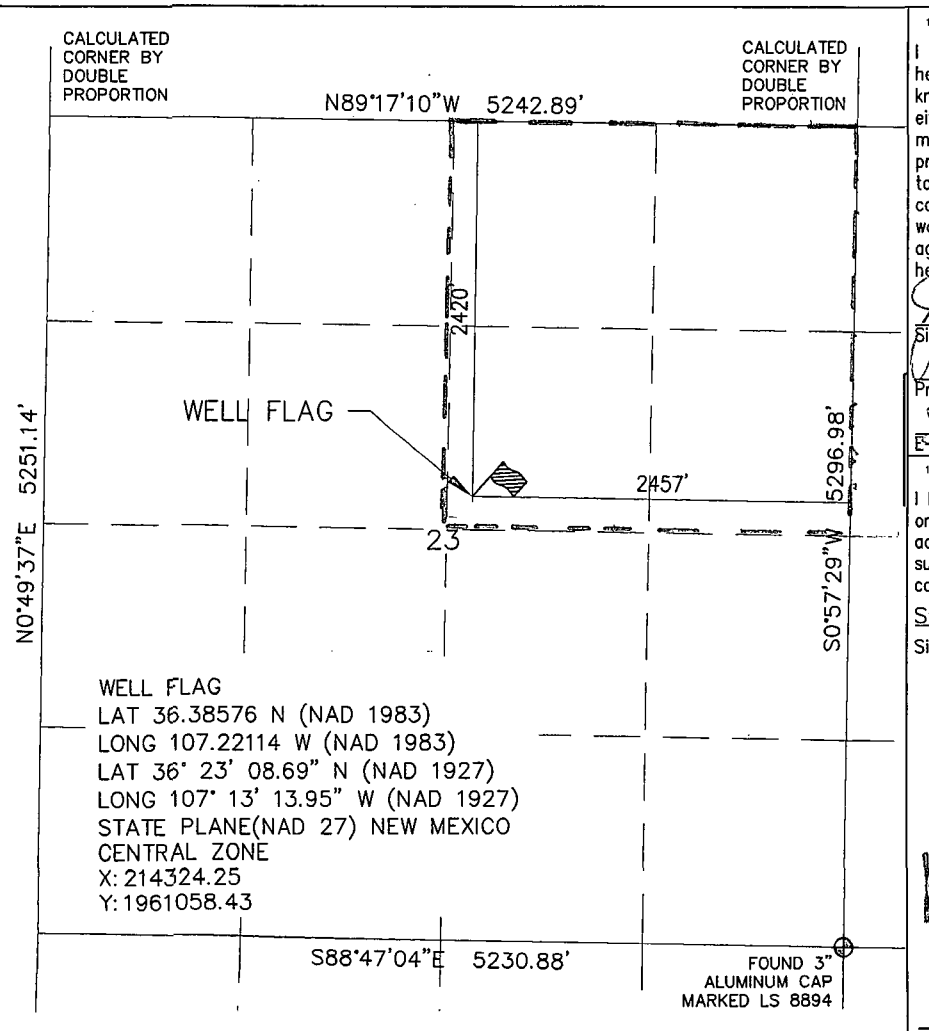
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	23	25 N	4W		2420'	NORTH	2457'	EAST	RIO ARRIBA

[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

[12] Dedicated Acres	[13] Joint of Infill	[14] Consolidation Code	[15] Order No.
NE/4 - 160 ACRES			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jeanie McMillan 4/1/14
Signature Date

Jeanie McMillan
Printed Name

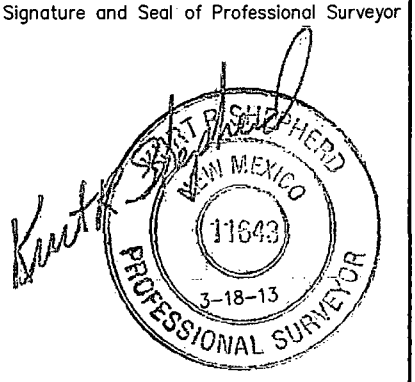
JMcMillan@enervest.net
E-mail Address

[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 behalf.

Survey Date: JANUARY 14, 2014

Signature and Seal of Professional Surveyor



Certificate Number 11643

EnerVest Operating, LLC

Jicarilla Apache Tribal 124 # 016

2420' FNL, 2457' FEL Unit G, Sec. 23, T25N R04W Rio Arriba County, NM

GL Elev: 7038'

Drilling Plan

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 EnerVest's approved Further Development Project Plan. 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 FORMATION TOPS (KB) and NOTABLE ZONES:

The following formation depths and proposed casing depths are estimates only and may be modified as determined by well conditions while drilling.

Formation Name	Depth	Rock Type	Comments
San Jose	Surface	Sandstone	
Ojo Alamo	2997'	Sandstone	Possible Gas, Water
Kirtland	3132'	Sandstone, Shale	
Fruitland	3354'	Coal, Shale, Sandstone	Possible Lost Circ, Gas, Water
Pictured Cliffs	3447'	Sandstone	Possible Lost Circ, Gas, water
Lewis	3531'	Shale	Sloughing Shale
Chacra	4349'	Sandstone	Possible gas
Mesa Verde (Cliffhouse)	5168'	Sandstone	Possible Lost Circ, Gas, Water
Mesa Verde (Menefee)	5191'	Coal, Sandstone, Shale	Possible Lost Circ, Gas, Water
Mesa Verde (Point Lookout)	5625'	Sandstone	Possible Lost Circ, Gas, Water
Mancos	5791'	Shale	Sloughing Shale
Gallup	6772'	Siltstone, Shale	Gas, Oil
Greenhorn	7574'	Limestone	Gas, Oil
Graneros	7638'	Shale	Gas, Oil, Water
Dakota	7665'	Sandstone	Gas, Oil, Water
Proposed Total Depth	7978'		

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.

4.3 PRESSURE CONTROL:

Maximum expected pressure is ~1755 (.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.

4.4 PROPOSED CASING PROGRAM :

Casing Design

Hole/Casing Description	Hole Size	Casing OD	Weight lb/ft	Grade	Age	Connection	Top MD	Bottom MD
Surface	12 1/4"	8 5/8"	24	J-55	New	ST&C	0	500'
Prod Casing	7 7/8"	4 ½"	11.6	N-80	New	LT&C	0	7978'

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% excess over OH gauge volume.

Stage 1 cement; mix and pump 531 sacks (1067 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).

DV tool at +/- 4759 ft.

Stage 2 Lead cement; mix and pump 266 sacks (567 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 +/- 2897 ft.

Stage 3 Lead cement; mix and pump 410 sacks (874 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'- 7978'	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 and solids control 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.
2000' to TD; GR/Induction/Density Neutron. (Cased hole GR/Neutron will be run if the hole conditions do not allow the use of the open hole logs)

Deviation surveys will be run at 500 ft intervals and at the base of each hole section prior to setting casing.

4.8 ANTICIPATED PRESSURES AND TEMPERATURES:

a.	Expected bottom hole pressure:	< 1755 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 late summer 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.

ENERVEST OPERATING, LLC

Jicarilla Apache Tribal 124 # 16 (Proposed)

TYPE	Dakota/MV	RIG	TBD	DATE	23-Feb-2014
FIELD	San Juan	COUNTY	Rio Arriba	ELEVATION	7038' GL; 7051' KB
GAS/OIL	Gas/Oil	MUD	LSND	BHT/BHP	160 deg- <1755 psi
LOCATION	SHL; 2420' FNL & 2457' FEL Unit G, Sec 23, T25N, R4W			SHL: Long: -107.22.542, Lat: 36.385747, (NAD 27)	
	BHL: Same as SHL			BHL: same as SHL	

COMMENTS: OBJECTIVE FORMATION: Dakota and Gallup

NOTES:

	DEPTH TVD	
Surface Section		
12 1/4" Hole >		Cement to surface
8-5/8", 24#,J-55, ST&C	**500'**	Water based bentonite mud Drill w/PDC and 4 1/2" DP
Production Section		
7 7/8" Hole to TD >		Drill w/PDC or Tri-Cone, motor, 4-1/2" DP
		8.7- 9.0 PPG Bentonite Mud
Ojo Alamo >	**2997'**	
	2897'	Stage Collar Cementing Tool
Kirtland >	**3132'**	
Fruitland Coal >	**3354'**	
Pictured Cliffs >	**3447'**	
Lewis Shale >	**3531'**	
	4759'	Stage Collar Cementing Tool
Cliffhouse >	**5168'**	Drill w/PDC bit, motor, 4-1/2" DP 8.7-9.0 PPG Bentonite Mud
Menefee >	**5191'**	
Point Lookout >	**5625'**	
Mancos >	**5791'**	
(Regulatory MancoS) >	6125'	
Gallup >	**6772'**	
Greenhorn >	**7574'**	Logs: As Directed By Geologist GR / Neutron / Density
Graneros Shale >	**7638'**	
Dakota >	**7665'**	
FC >>>>	7938'	
4-1/2", 11.6#, N-80 LT&C - To Surface >>>>	**7978'**	Cement to surface in 3 stages.
TD >>>>	**7978'**	

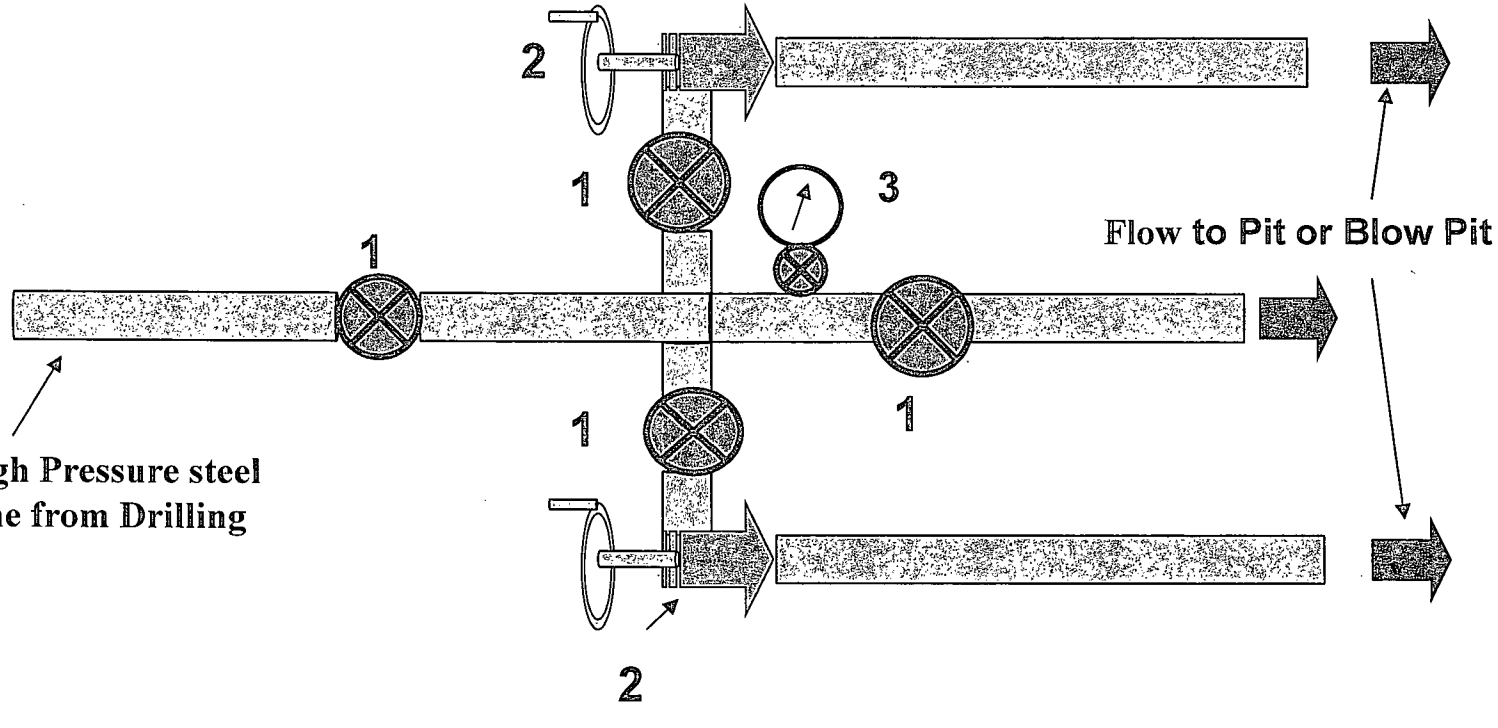
AFE #	CO 1401 211	REGULATORY	Bart Trevino	(713) 495 5355
EV #		ENGINEER	R Trueheart / L Diede	(713) 495 1561 / (505) 334 8867
API #		GEOLOGIST	G Kowalczyk	(713) 495 6590

Exhibit B

EnerVest
Jicarilla 2014 Drilling Program
2000 psi Choke Manifold

Components

1. 2" Valves (2M)
2. Adjustable Chokes
3. Gauge



EnerVest Operating, LLC
Jicarilla Apache Tribal 124 # 16
2420' FNL, 2457' FEL Unit G Sec 23, T25N, R04W Rio Arriba, NM

Surface Use Plan

1. DIRECTIONS & EXISTING ROADS (See attached Vicinity map)

The location is approximately 17 miles N of the intersection of US Hwy 550 and NM Hwy 537
Latitude: N 36.38576
Latitude: W 107.22114

From Intersection of US Hwy 550 and NM State Hwy 537: Turn north on Hwy 537 for 18.4 miles, turn left to well site.

2. ROAD TO BE BUILT OR UPGRADED

A. Drilling of this well will require the construction of 330' of new access road from the existing access road as shown on the Access Plat. After the well is completed as a commercial producer, the need for a pipeline is ascertained, it is proposed to construct 672' of pipeline to tie-in at the west side of the location to an existing Williams pipeline which runs adjacent to the location and the access road.
B. Width: 20 ft running surface; 45 ft total ROW with is applied for to accommodate access and drainage installation along the road.
C. Maximum grade: 0-1%.
D. Turnouts: No turnouts are planned for this access road.
E. Drainage design: The drainage design for the proposed new access road will be in conformance with Jicarilla Apache Tribal and BIA standards – with the agreement of the of the Jicarilla Apache Tribe. It is proposed to build a drainage holding and diversion pond near location if needed to prevent location erosion and divert drainage around the location. Any area used in this fashion will have been reviewed and given clearance for the possible archaeological and environmental impact.
F. Location and size of culverts: None are required.
G. Surface Materials: No gates, cattle guards or fences to be installed along the access road or the location. Road base material may be used as necessary during the drilling and completion phases of this project.

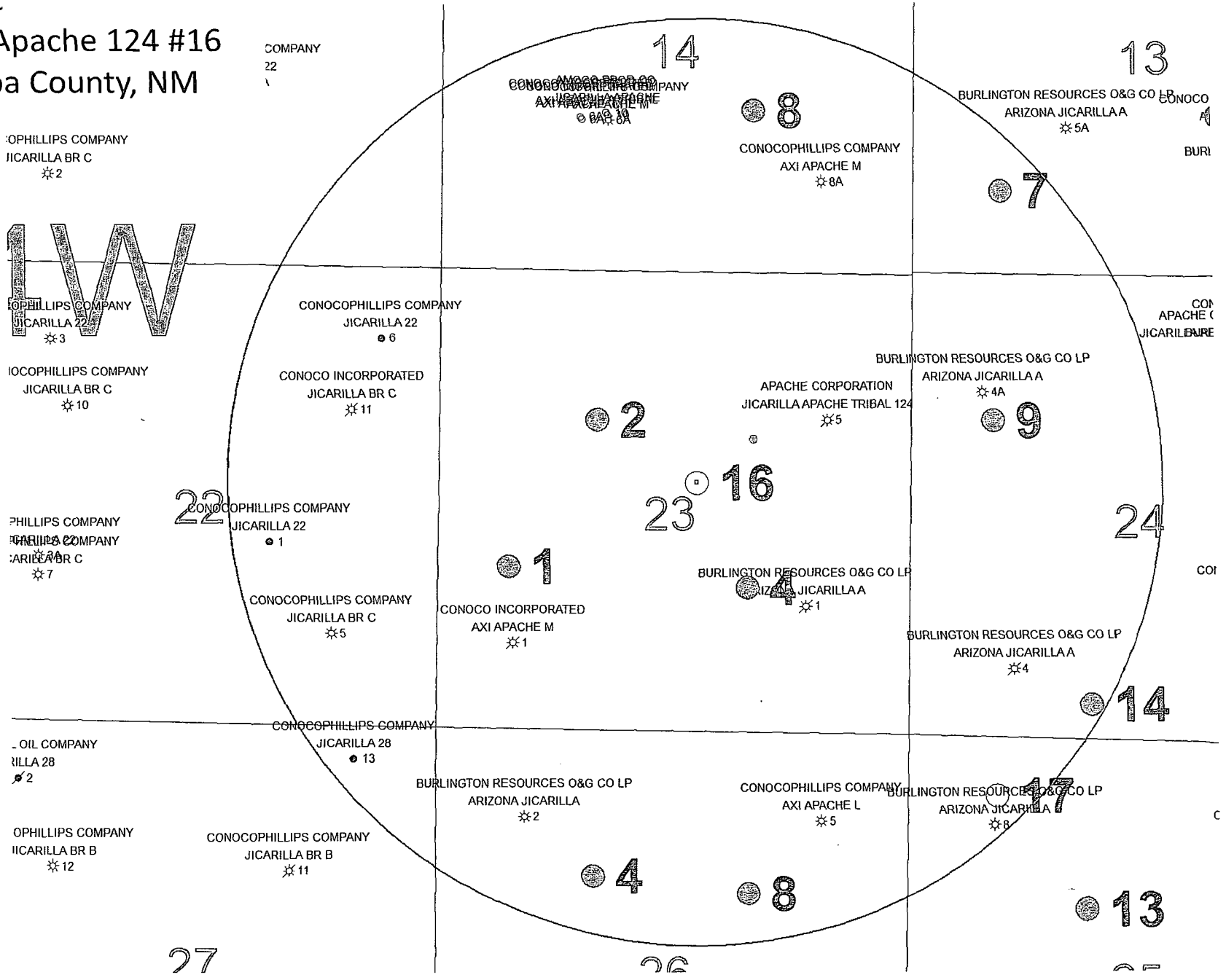
3. SURFACE OWNERSHIP

The surface ownership of the well site location and access roads are all on Jicarilla Apache Nation land.

4. EXISTING WELLS (See the Vicinity map)

This is a development location. There are twenty-eight existing wells within a one-mile radius of the proposed location as shown on the Vicinity map.

EnerVest
Jicarilla Apache 124 #16
Rio Arriba County, NM



EnerVest
Jicarilla 2014
Drilling Program
Blowout Preventer
2000 psi

Exhibit A

Components
1. Wellhead 9 5/8"
2. Drilling Spool
3. Pipe Rams
4. Blind Rams
5. Spool
6. 2" Check Valve
7. 2" Manual Valves