

03/08/2013 DATE IN	SUSPENSE	ENGINEER <i>DO</i>	03/11/2013 LOGGED IN	TYPE <i>NSL</i>	PPAG1307040638 APP NO.
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



30-039-27528

*Sicarilla 96 #003R
Energen Resources*

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
 X NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or X Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

J. Scott Hall
 Montgomery & Andrews, P.A.

J. Scott Hall

Attorney for Applicant

3-08-2008

Print or Type Name

Signature

Title

Date

shall@montand.com
 e-mail Address

RECEIVED OGD
 2013 MAR - 8 P. 4: 01



**MONTGOMERY
& ANDREWS**
LAW FIRM

J. SCOTT HALL

Office: (505) 986-2646

Email: shall@montand.com

Reply To: Santa Fe Office

www.montand.com

RECEIVED OGD

2013 MAR -8 P 4:01

March 8, 2013

Ms. Jami Bailey, Director
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87501

Hand-Delivered

Re: Energen Resources Corporation
Request for Administrative Approval
Unorthodox Well Location
Gavilan-Pictured Cliffs Pool (77360)

Jicarilla 96 Well No. 3R
API No. 30-039-27528
660' FNL and 2500' FEL (B)
Section 12, T26N, R3W
Rio Arriba County, New Mexico

Dear Ms. Bailey:

On behalf of Energen Resources Corporation ("Energen") and pursuant to Division Rule 19.15.15.13 and the applicable rules governing gas well locations for specified areas of the Gavilan-Pictured Cliffs Pool (77360; Order No. R-13350), we request administrative approval for an unorthodox well location for the Jicarilla 96 Well No. 3R previously drilled at the surface and bottom-hole locations reflected above.

This well was drilled in 2004 to the Mesaverde formation (Blanco-Mesaverde Pool) and to the Gallup formation at the unorthodox location referenced above approved by Administrative Order NSL-4986, Exhibit A, attached. The C-102 showing the E/2 spacing unit and the well location is attached as Exhibit B.

REPLY TO:

325 Paseo de Peralta
Santa Fe, New Mexico 87501
Telephone (505) 982-3873 • Fax (505) 982-4289

Post Office Box 2307
Santa Fe, New Mexico 87504-2307

6301 Indian School Road NE, Suite 400
Albuquerque, New Mexico 87110
Telephone (505) 884-4200 • Fax (505) 888-8929

Post Office Box 36210
Albuquerque, New Mexico 87176-6210

Ms. Jami Bailey, Director
March 8, 2013
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The Jicarilla 96 Well No. 3R does not produce from the Gallup formation, but continues to produce from the Mesaverde formation. Energen proposes to re-enter the well and dually complete it in the Pictured Cliffs formation. The C-103 for this proposed procedure is attached as Exhibit C.

This well and the spacing unit are located within the Gavilan-Pictured Cliffs Special Infill Well Development Area established by Order No. R-13621(Exhibit D)¹. Under the Order, the Division issued blanket approval for dual completions and commingled production from both the Pictured Cliffs and Mesaverde formations throughout the Special Infill Well Development Area. Order No. R-13621 also approved unorthodox locations for sixteen Mesaverde wells to which Energen planned to add Pictured Cliffs formation completions. The Jicarilla 96 Well No. 3R was referenced in a number of the exhibits presented at the hearing, but through inadvertence, was not included among the sixteen wells specifically identified for the proposed order offered in the case. Otherwise, the circumstances are identical in all respects.

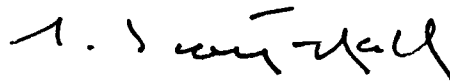
Energen owns and controls 100 percent of the leasehold within the Special Infill Well Development Area, including the NE/4 of Section 12 T26N R3W. Energen is also the operator in the adjoining spacing unit toward which the location encroaches and the underlying mineral interest is identical throughout. No correlative rights are affected and therefore, no further notification is indicated under the Division's rules and practices.

The Division's Administrative Application Checklist is enclosed.

Thank you for your consideration of this request. Should more information be required, please do not hesitate to contact me.

Very truly yours,

MONTGOMERY & ANDREWS, P. A.



J. Scott Hall

Attorneys for Energen Resources Corporation

JSH:kw

¹ Case No. 14878: Application of Energen Resources Corporation for Establishment of a Special Infill Well Development Area in Portions of the Gavilan-Pictured Cliffs Pool, for Exception from Rule 19.15.15.11 NMAC, Approval of Unorthodox Well Locations and for Downhole Commingling, Rio Arriba County, New Mexico

Ms. Jami Bailey, Director
March 8, 2013
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Enclosures:
Exhibit A NSL-4986
Exhibit B C-102
Exhibit C C-103
Exhibit D R-13621

Administrative Application Checklist

cc: Bryan Lewis, Energen-Farmington

450436



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor
Joanna Prukop
Cabinet Secretary

January 27, 2004

Lori Wrotenbery
Director
Oil Conservation Division

**Energen Resources Corporation
2198 Bloomfield Highway
Farmington, New Mexico 87401**

Attention: Richard Corcoran

Administrative Order NSL-4986

Dear Mr. Corcoran:

Reference is made to the following: (i) your application (*administrative application reference No. pMES0-328838737*) submitted to the New Mexico Oil Conservation Division ("Division") on September 30, 2003; (ii) a voice mail message for Mr. Michael E. Stogner, Engineer with the Division in Santa Fe on Tuesday, January 20, 2004 from Gillian in Farmington; and (iii) the Division's records in Santa Fe and Aztec: all concerning Energen Resources Corporation's ("Energen") request for: (i) an exception to the well location requirements provided within the "*Special Rules for the Blanco-Mesaverde Pool*," as promulgated by Division Order No. R-10987-A, issued in Case No. 12069 and dated February 1, 1999, as amended by Division Order No. R-10987-A (1), dated December 2, 2002, for a non-standard replacement gas well location within an existing standard 320-acre gas spacing and proration unit ("GPU") for the Blanco-Mesaverde Pool (72319); and (ii) an unorthodox gas well location in the Gallup formation, for its proposed Jicarilla "96" Well No. 3-R (API No. 30-039-27528) to be drilled 660 feet from the North line and 2500 feet from the East line (Unit B) of Section 12, Township 26 North, Range 3 West, NMPM, Rio Arriba County, New Mexico.

This application has been duly filed under the provisions of: (i) Division Rule 104.F, revised by Division Order No. R-11231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999; (ii) Division Rule 605.B; and (iii) the applicable provisions of the special rules governing the Blanco-Mesaverde Pool.

The E/2 of Section 12, being a standard 320-acre stand-up Mesaverde GPU, is currently simultaneously dedicated to Energen's: (i) Jicarilla "96" Well No. 3-A (API No. 30-039-25291), located at a standard infill gas well location 1650 feet from the South line and 1850 feet from the East line (Unit J) of Section 12; and (ii) Jicarilla "96" Well No. 3-B (API No. 30-039-26354), located at a standard infill gas well location 660 feet from the South line and 1980 feet from the East line (Unit O) of Section 12. Initial development of the Blanco-Mesaverde Pool within this GPU commenced in 1957 when Magnolia Petroleum Company drilled and completed its Jicarilla "H" Well No. 3 (API No. 30-039-06624) at a standard gas well location 990 feet from the North and East lines (Unit A) of Section 12. In 1963 Socony Mobil Oil Company plugged and abandoned this well. Energen's proposed Jicarilla "96" Well No. 3-R is to be this wells replacement for Mesaverde gas production within the northern-half (NE/4) of this GPU.

Oil Conservation Division * 1220 South St. Francis Drive * Santa Fe, New Mexico 87505
Phone: (505) 476-3440 * Fax (505) 476-3462 * <http://www.emnrd.state.nm.us>

EXHIBIT A

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer 00, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code	*Pool Name
		72319 / 97232	BLANCO MESAVERDE / WC:26N3W12E, CALLUP (G)
*Property Code	*Property Name		*Well Number
21938	JICARILLA 96		3R
*GRID No.	*Operator Name		*Elevation
162928	ENERGEN RESOURCES CORPORATION		7081'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot 1st	Feet from the	North/South line	Feet from the	East/West line	County
B	12	26N	3W		660	NORTH	2500	EAST	RIO ARriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 1st	Feet from the	North/South line	Feet from the	East/West line	County

*Dedicated Acres	*Joint or Infill	*Consolidation Code	*Order No.
160 acres 320.0 Acres - (E/2) (Callup) MILES			

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

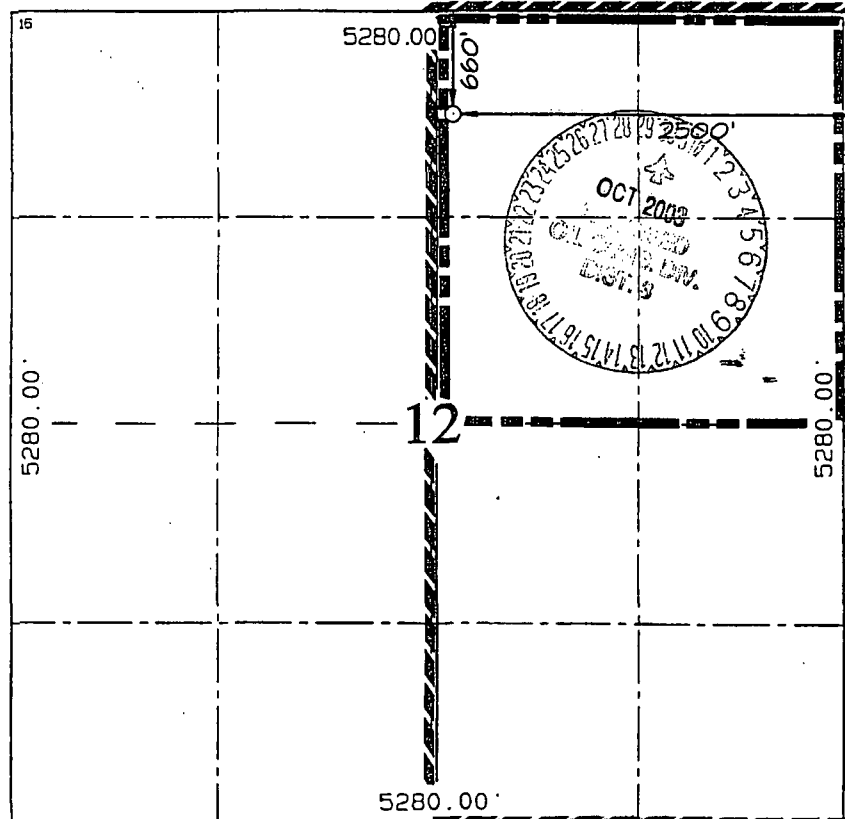

	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature: <u>Don Graham</u> Printed Name: Don Graham Title: Production Superintendent Date: <u>9-27-02</u>
	18 SURVEYOR CERTIFICATION I hereby certify that the 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: <u>JUNE 24, 2002</u> Signature and Seal of Professional Surveyor:  <u>JASON C. EDWARDS</u> Certificate Number 15269

EXHIBIT B

Submit 3 Copies To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 87240
District II
1301 W. Grand Ave., 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 and Natural Resources

Form C-103
June 19, 2008

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-039-27528
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. Jicarilla Contract 96
7. Lease Name or Unit Agreement Name: Jicarilla 96
8. Well Number 3R
9. OGRID Number
10. Pool name or Wildcat Gavilan PC/ Blanco MesaVerde
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 7081' GR

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other
2. Name of Operator ENERGEN RESOURCES CORPORATION
3. Address of Operator 2010 Afton Place, Farmington, NM 87401
4. Well Location Unit Letter <u>B</u> : <u>660</u> feet from the <u>North</u> line and <u>2500</u> feet from the <u>East</u> line Section <u>12</u> Township <u>26N</u> Range <u>3W</u> NMPM County <u>Rio Arriba</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 7081' GR

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: Pay Add & Down-hole Commingle ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance to Case 14878, Order # R-13621, It is intended to downhole commingle the Gavilan PC (77360) and Blanco MesaVerde (72319). Pictured Cliffs perforations 3621'-3671' Est., MV perforations 5404'-5572' and 5774'-5918'. Recommended allocation - Subtraction method following 60 days of stabilized production. Commingling will not reduce the total remaining production's value. The interest owners are identical for each zone. Rates reported to NMOCD-Aztec for final determination. The BLM has been notified of this pay add via Form 3160-5.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE _____ TITLE District Engineer DATE 1/29/2013
aklem@energen.com
Type or print name Adam Klem E-mail address: _____ PHONE 505-324-4163

For State Use Only

APPROVED BY _____ TITLE _____ DATE _____

Conditions of Approval (if any):

EXHIBIT C

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 14878
ORDER NO. R-13621

APPLICATION OF ENERGEN RESOURCES CORPORATION FOR
ESTABLISHMENT OF A SPECIAL INFILL WELL DEVELOPMENT AREA IN
PORTIONS OF THE GAVILAN-PICTURED CLIFFS POOL, FOR EXCEPTION
FROM RULE 19.15.15.11 NMAC, APPROVAL OF UNORTHODOX WELL
LOCATIONS AND FOR DOWNHOLE COMMINGLING, RIO ARriba
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on July 12, 2012, at Santa Fe, New Mexico, before Examiner Richard I. Ezeanyim.

NOW, on this 31st day of August, 2012, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and of the subject matter.

(2) Energen Resources Corporation ("Energen" or "Applicant") seeks an order from the Division to approve the following:

(a) the establishment of the Gavilan-Pictured Cliffs Special Infill Well Development Area in portions of the Gavilan-Pictured Cliffs Pool (77360) in Rio Arriba County, New Mexico;

(b) an exception to the well density development limitations applicable to the pool to allow two producing gas wells per 160-acre spacing and proration unit throughout the Special Infill Well Development Area;

EXHIBIT D

(c) unorthodox well locations pursuant to Rule 19.15.15.13 NMAC for certain existing Mesaverde formation wells to be recompleted in the Pictured Cliffs formation;

(d) the dual completion of new wells to be drilled to both formations throughout the area; and

(e) the area-wide downhole commingling of production from the Gavilan-Pictured Cliffs Pool (77360) and the Blanco-Mesaverde Pool (72319), and in the specific case of three pre-existing wells identified herein, the downhole tri-mingling of production from the Pictured Cliffs, Mesaverde and Mancos formations.

(3) Energen appeared at the hearing through counsel and presented the following land, geologic and engineering testimony.

The Special Infill Well Development Area

(4) Energen proposes that the following lands in Rio Arriba County located entirely within the northern portion of the Gavilan-Pictured Cliffs Pool be designated as the Gavilan-Pictured Cliffs Special Infill Well Development Area:

Township 27 North, Range 3 West, NMPM

Section 11:	All
Section 13:	All
Section 14:	All
Section 15:	S/2
Section 22:	All
Section 23:	All
Section 24:	All
Section 25:	All
Section 26:	All
Section 27:	All
Section 35:	All
Section 36:	All

Township 26 North, Range 3 West, NMPM

Section 1:	All
Section 2:	All
Section 3:	E/2
Section 10:	E/2
Section 11:	All
Section 12:	All
Section 13:	All
Section 14:	E/2, NW/4
Section 23:	NE/4
Section 24:	All

(5) The mineral interests underlying the lands described in Paragraph 4, above, (the Special Infill Well Development Area) are all owned in trust for the benefit of the Jicarilla Apache Nation. Energen owns all of the oil and gas lease record title and operating rights at all depths and formations in the lands. The 12,207.60 acres, more or less, under lease to Energen are contiguous and can be efficiently administered as a single Special Infill Well Development Area. Energen owns each of the drilled and undrilled spacing units within the Special Infill Well Development Area, and ownership in all of the formations is common. Energen is the only operator within the Special Infill Well Development Area.

(6) The operators of all spacing units adjoining the proposed Special Infill Well Development Area were notified of this hearing. For those adjoining spacing units where no operator is designated, the leasehold working interest owners were notified. The Jicarilla Apache Nation (JAN), Bureau of Indian Affairs (BIA), and Bureau of Land Management (BLM) were also notified, and notice of the hearing was published in the Rio Grande Sun Newspaper.

(7) On June 28, 2012, prior to the hearing, Energen's land, geologic and engineering staff met with representatives of the Jicarilla Apache Nation, Bureau of Indian Affairs and Bureau of Land Management to explain the infill development program. The Jicarilla Apache Nation and BIA representatives were supportive of this application.

(8) The Gavilan-Pictured Cliffs Pool is an "unprorated" gas pool, and is currently governed by Division's Statewide Rules, which provide for 160-acre well spacing and proration units, and require wells to be located no closer than 660 feet to the outer boundary of their assigned units nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary. These rules do not provide for the drilling, recompletion, and production of a second gas well within a single 160-acre gas spacing unit.

(9) Order No. R-10987-A issued in Case No. 12069 on February 1, 1999, established Special Pool Rules for the Blanco-Mesaverde Pool (72319), which is a prorated gas pool. Those rules provide for 320-acre standard gas proration units and allow for an initial well and up to three infill wells. Well locations are also subject to a 660 foot setback requirement and may be no closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

(10) The Gavilan-Pictured Cliffs Pool and the Blanco-Mesaverde Pool are not a pool combination that is pre-approved for commingling under Rule 19.15.12.11. E NMAC.

(11) In 2003, Energen, Burlington Resources Oil & Gas Company and BP-Amoco participated in a pilot infill development study on portions of eight San Juan Basin Pictured Cliffs pool, including the Gavilan-Pictured Cliffs Pool, authorized by the Division in Order No. R-11848. Subsequently, in 2011, the Division issued Order No. R-

13347-A approving the establishment of an infill pilot project study area in portions of the Gavilan, Tapacito and South Blanco-Pictured Cliffs Pools operated by Energen. In connection with the pilot project, Energen drilled or recompleted a number of infill wells in 160-acre units located within the Gavilan-Pictured Cliffs Pool and has been successful in finding good quality reservoir and production with its infill development.

(12) Energen has determined that the Pictured Cliffs formation in the area is located deeper than other Pictured Cliffs producing areas in the San Juan Basin. It has also found higher original and remaining bottomhole pressures in the Special Infill Development Area. Energen has concluded that there are additional Pictured Cliffs reserves available to infill development that were not otherwise being efficiently recovered by the original single wells in each of the spacing units it evaluated.

(13) Within the Special Infill Well Development Area, Energen currently operates two (2) wells producing from the Pictured Cliffs formation only, and forty-seven (47) Mesaverde wells which were previously approved for the commingling of production from both the Pictured Cliffs and Mesaverde formations. None of the wells is located any closer than 660 feet to the outer boundary of the Special Infill Well Development Area.

(14) Energen also operates the following fifty-one (51) existing Mesaverde formation wells located in the proposed Special Infill Well Development Area, and plans to add completions in the Pictured Cliffs formation and operate them as new infill wells:

API No.	Well Name	NS Footage	N Dir	EW Footage	EW Dir	Sec	Twp	Rge	Prod Fm
30039265480000	Jicarilla 95 #3C	2340	FNL	990	FWL	35	27N	3W	Mancos/ Mesaverde
30039265510000	Jicarilla 96 #6B	2155	FSL	1845	FWL	2	26N	3W	Mesaverde
30039265710000	Jicarilla 96 #7B	2330	FNL	1145	FWL	1	26N	3W	Mesaverde
30039265880000	Jicarilla 94 #6B	2075	FNL	770	FEL	27	27N	3W	Mesaverde
30039268430000	Jicarilla 96 #8C	2480	FSL	1750	FWL	12	26N	3W	Mesaverde
30039268470000	Jicarilla 115E #14B	2400	FNL	680	FEL	10	26N	3W	Mesaverde
30039268530000	Jicarilla 94 #1C	2400	FSL	1650	FEL	22	27N	3W	Mesaverde
30039268880000	Jicarilla 96 #4Y	1560	FSL	2340	FEL	1	26N	3W	Mesaverde
30039268910000	Jicarilla 96 #7C	2360	FSL	1980	FWL	1	26N	3W	Mesaverde
30039268920000	Jicarilla 95 #6C	660	FSL	2500	FEL	36	27N	3W	Mancos/ Mesaverde
30039269140000	Jicarilla 95 #4C	2405	FNL	1650	FWL	26	27N	3W	Mesaverde
30039273110000	Jicarilla 96 #5C	660	FSL	2600	FWL	11	26N	3W	Mesaverde
30039274370000	Jicarilla 99 #7C	2010	FSL	1600	FWL	13	26N	3W	Mesaverde
30039274830000	Jicarilla 94 #2R	2350	FSL	1125	FWL	27	27N	3W	Mesaverde
30039276720000	Jicarilla 95 #5C	2140	FNL	105	FWL	25	27N	3W	Mesaverde
30039301530000	Jicarilla 96 #4B	2500	FNL	1420	FEL	1	26N	3W	Mesaverde

30039068500000	Jicarilla 95 #7	900	FNL	990	FEL	36	27N	3W	Mesaverde
30039070210000	Jicarilla 94 #4	790	FNL	790	FEL	23	27N	3W	Mesaverde
30039211270000	Jicarilla 95 #7A	990	FNL	990	FWL	36	27N	3W	Mesaverde
30039212360000	Jicarilla 96 #7A	990	FNL	790	FWL	1	26N	3W	Mesaverde
30039212370000	Jicarilla 96 #2A	990	FSL	990	FEL	2	26N	3W	Mesaverde
30039212590000	Jicarilla 96 #1A	990	FSL	990	FEL	11	26N	3W	Mesaverde
30039212600000	Jicarilla 95 #8A	990	FSL	990	FEL	26	27N	3W	Mesaverde
30039212730000	Jicarilla 96 #8A	990	FNL	1190	FWL	12	26N	3W	Mesaverde
30039214820000	Jicarilla 94 #4A	1190	FSL	1090	FEL	23	27N	3W	Mesaverde
30039214840000	Jicarilla 94 #2A	990	FNL	1190	FWL	27	27N	3W	Mesaverde
30039228000000	Jicarilla 89 #5A	1520	FSL	790	FEL	14	27N	3W	Mesaverde
30039228110000	Jicarilla 94 #8	790	FNL	890	FWL	24	27N	3W	Mesaverde
30039262620000	Johnston Shear #1A	1735	FSL	1105	FEL	3	26N	3W	Mancos/ Mesaverde
30039262690000	Jicarilla 99 #3A	1835	FSL	1620	FEL	13	26N	3W	Mesaverde
30039263540000	Jicarilla 96 #3B	660	FSL	1980	FEL	12	26N	3W	Mesaverde
30039263550000	Jicarilla 94 #5B	1980	FSL	1785	FWL	23	27N	3W	Mesaverde
30039265460000	Jicarilla 94 #6C	1065	FSL	1455	FEL	27	27N	3W	Mesaverde
30039265490000	Jicarilla 96 #6C	990	FNL	1970	FWL	2	26N	3W	Mesaverde
30039265730000	Jicarilla 96 #1B	720	FNL	1775	FEL	11	26N	3W	Mesaverde
30039265740000	Jicarilla 95 #6B	1980	FSL	800	FWL	36	27N	3W	Mesaverde
30039265860000	Jicarilla 95 #1C	1285	FNL	1940	FEL	35	27N	3W	Mesaverde
30039268270000	Jicarilla 96 #2C	1750	FNL	1825	FEL	2	26N	3W	Mesaverde
30039268440000	Jicarilla 99 #7B	790	FNL	1600	FWL	13	26N	3W	Mesaverde
30039268450000	Johnston Shear #1C	660	FSL	660	FEL	3	26N	3W	Mesaverde
30039268460000	Johnston Shear #1B	660	FNL	660	FEL	3	26N	3W	Mesaverde
30039268520000	Jicarilla 95 #4B	915	FSL	1975	FWL	26	27N	3W	Mesaverde
30039268560000	Jicarilla 94 #2B	660	FSL	1975	FWL	27	27N	3W	Mesaverde
30039268870000	Jicarilla 94 #4B	1980	FSL	1980	FEL	23	27N	3W	Mesaverde
30039268890000	Jicarilla 95 #5B	660	FSL	1975	FWL	25	27N	3W	Mesaverde
30039268900000	Jicarilla 95 #8C	1865	FNL	1795	FEL	26	27N	3W	Mesaverde
30039274130000	Jicarilla 94 #2C	1600	FNL	1980	FWL	27	27N	3W	Mesaverde
30039274380000	Jicarilla 94 #1B	1600	FNL	660	FEL	22	27N	3W	Mesaverde
30039274820000	Jicarilla 94 #3B	660	FSL	1980	FWL	22	27N	3W	Mesaverde
30039275280000	Jicarilla 96 #3R	660	FNL	2500	FEL	12	26N	3W	Mesaverde
30039301640000	Jicarilla 94 #4C	1000	FNL	1950	FEL	23	27N	3W	

(15) In addition to the re-completions of the existing Mesaverde formation wells, Energen plans to drill the following new Mesaverde wells, which it also proposes

to dually complete and commingle downhole with production from the Pictured Cliffs formation:

API No.	Well Name	NS Footage	NS Dir	EW Footage	EW Dir	Sec	Twp	Rge
NA	Jicarilla 94 #3C	1350	FNL	1350	FWL	22	27N	3W
NA	Jicarilla 99 #2B	1350	FNL	1350	FEL	14	26N	3W
NA	Jicarilla 96 #3D	1350	FSL	1350	FEL	12	26N	3W
NA	Jicarilla 96 #3B	1350	FNL	1350	FEL	13	26N	3W
NA	Jicarilla 96 #3C	1350	FSL	1350	FEL	13	26N	3W
NA	Jicarilla 96 #3C	1350	FNL	1350	FEL	12	26N	3W
NA	Jicarilla 99 #2C	1350	FSL	1350	FEL	14	26N	3W

(16) In addition to the re-completions of the existing Mesaverde wells and the new wells identified in Finding Paragraphs (14) and(15) above, Energen seeks approval for the dual completion and downhole commingling of any future Mesaverde and Pictured Cliffs formation wells it may drill at any available location throughout the Special Infill Well Development Area.

(17) Except for new Mesaverde formation wells that would not be drilled on existing pads, adding infill completions to the existing Mesaverde wells and facilities will cause no additional surface disturbance.

Infill development

(18) Based on the results from the 2003 and 2011 pilot projects, Energen determined that Pictured Cliffs formation reserves can be efficiently and economically developed, without waste or violating correlative rights, by drilling new wells or recompleting existing Blanco-Mesaverde wells on 160-acre spacing and proration units.

(19) Further, waste will not be incurred and correlative rights will be protected by adding commingled production from the Pictured Cliffs formation and producing the dually completed wells as additional infill wells in each of the quarter-section spacing units Energen operates within the Gavilan-Pictured Cliffs Pool.

(20) The 2011 Pilot Project demonstrated that the average increase in the Estimated Ultimate Recovery (EUR) per 160-acre spacing and proration unit attributable to infill development was 448 million cubic feet (448 MMcf).

(21) The 2003 Pilot Project demonstrated that the average increase in the Estimated Ultimate Recovery (EUR) per 160-acre spacing and proration unit attributable to infill development was 45 million cubic feet (45 MMcf).

(22) The bottomhole pressures from the 2003 and 2011 Pilot Projects were obtained from down-hole gauges measuring both pre-fracture and post-fracture data on 30-day pressure build-up tests followed by pressure fall-off tests. The highest pressures

(about 1270 pounds per square inch-psi) were observed in the wells offsetting the areas with lowest cumulative production, while the lowest pressures (about 427 psi) were observed in the wells offsetting the areas with the highest cumulative production.

(23) The original bottomhole pressures in the proposed Special Infill Well Development Area were approximately 1270 psi. Correspondingly, Energen's bottomhole pressure analysis indicates that with historic development densities of one well per 160-acre unit, only forty-seven (47%) percent of the available Pictured Cliffs gas reserves have been depleted. By comparison, increasing the well density in the Pictured Cliffs formation will recover approximately ninety (90%) percent of the gas reserves.

(24) The engineering analysis for the Gavilan-Pictured Cliffs area establishes that increasing well density to two wells per 160-acre spacing and proration unit would recover additional reserves, and that the current one well per 160-acre unit results in a low percentage of the gas in place being produced.

(25) The ability to add infill Pictured Cliffs formation completions to Mesaverde formation wells would provide additional economic support to justify the drilling of new Mesaverde wells throughout the area. Further, approval of infill development in the area will likely result in increased severance tax revenues for the State of New Mexico and increased royalty revenues for the Jicarilla Apache Nation.

Downhole commingling

(26) Energen seeks blanket authorization for the downhole commingling of production from the Pictured Cliffs formation and the Mesaverde formation throughout the Gavilan-Pictured Cliffs Special Infill Development Area, identified in Finding paragraph (4) above. This would include the existing Mesaverde formation wells to be re-completed in the Pictured Cliffs formation, the new wells identified in Finding Paragraphs (14) and (15), and in any new Mesaverde formation wells to be drilled anywhere in the Special Infill Well Development Area.

(27) Energen also seeks authorization for downhole tri-mingling of production from the Pictured Cliffs, Mesaverde and Mancos formation for the following three (3) wells which are currently approved for downhole commingling of production from the Mesaverde and Mancos formation:

API No. No.	Well Name	Location							Order	
30039262620000	Johnston Shear #1A	1A	1735	FSL	1105	FEL	3	26N	3W	DHC-2741
30039265480000	Jicarilla 95 #3C	3C	2340	FNL	990	FWL	35	27N	3W	DHC-3883
30039268920000	Jicarilla 95 #6C	6C	660	FSL	2500	FEL	36	27N	3W	DHC-3231

(28) Energen operates forty-seven (47) wells in the Gavilan field that have been previously approved for downhole commingling and there is sufficient evidence and experience to establish the following information from the operation of these wells.

- (a) The fluids from the Pictured Cliffs and Mesaverde zones are compatible.
- (b) Commingling does not present a risk of reservoir damage.
- (c) Commingling will not jeopardize the efficiency of present or future operations in the pools to be commingled.
- (d) For all of the identified wells, the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone.
- (e) There is adequate bottomhole pressure and other information indicating that the pressure gradient in the Mesaverde formation is at or below 0.15 psi per foot of depth.
- (f) Shut in or flowing well bore pressures will not exceed any commingled formation's fracture parting pressure.
- (g) The relative British Thermal Units (BTU) values for Pictured Cliffs and Mesaverde formation gas are within a reasonable range of 1100 to 1200 BTU and commingling will not reduce the value of production.
- (h) The correlative rights of other owners within the pools will not be adversely affected. Specifically, within the Special Infill Well Development Area, there are no other interest owners, so protection of correlative rights is not an issue.

(29) Energen proposes to allocate production between the Pictured Cliffs and Mesaverde formations using a "subtraction method". For dually completed wells, it is Energen's practice to isolate the Mesaverde formation by a bridge plug and then produce Pictured Cliffs gas for sixty days to obtain a stabilized flow rate before removing the plug and commingling the two formations. The increased production after commingling is attributed to the Mesaverde formation and is used as the basis for allocating production between the two formations on a percentage basis for the remaining producing life of the well.

(30) Experience in the area indicated that adding Pictured Cliffs formation gas to the commingled production from the Mesaverde and Mancos formations will satisfy all the criteria of Rule 19.15.12.11 A. NMAC. Further, the subtraction method can be utilized for the inclusion and attribution of Pictured Cliffs gas to production from the Mesaverde and Mancos formations.

Unorthodox well locations

(31) Sixteen (16) of the Mesaverde formation wells which Energen proposes to re-complete to add Pictured Cliffs formation production will result in unorthodox locations for the Gavilan-Pictured Cliffs Pool. These wells and their locations are as follow:

Well Name	Location	Footage	Dir	Footage	Dir	Sec	Twp	Rge
JICARILLA 95 #3C	SE SW NW	2340	FNL	990	FWL	35	27N	3W
JICARILLA 98 #6B	NW NE SW	2155	FSL	1845	FWL	2	26N	3W
JICARILLA 98 #7B	SE SW NW	2330	FNL	1145	FWL	1	26N	3W
JICARILLA 94 #6B	SW SE NE	2075	FNL	770	FEL	27	27N	3W
JICARILLA 98 #8C	NW NE SW	2480	FSL	1750	FWL	12	26N	3W
JICARILLA 115E #14B	SW SE NE	2400	FNL	880	FEL	10	26N	3W
JICARILLA 94 #1C	NE NW SE	2400	FSL	1650	FEL	22	27N	3W
JICARILLA 98 #4Y	SW NW SE	1580	FSL	2340	FEL	1	26N	3W
JICARILLA 98 #7C	N2 NE SW	2360	FSL	1980	FWL	1	26N	3W
JICARILLA 95 #6C	W2 SW SE	680	FSL	2500	FEL	36	27N	3W
JICARILLA 95 #4C	SW SE NW	2405	FNL	1650	FWL	26	27N	3W
JICARILLA 98 #5C	E2 SE SW	680	FSL	2600	FWL	11	26N	3W
JICARILLA 99 #7C	NW NE SW	2010	FSL	1600	FWL	13	26N	3W
JICARILLA 94 #2R	NE NW SW	2350	FSL	1125	FWL	27	27N	3W
JICARILLA 95 #5C	SW SW NW	2140	FNL	105	FWL	25	27N	3W
JICARILLA 98 #4B	SE SW NE	2500	FNL	1420	FEL	1	26N	3W

(32) Energen is the owner of the leases and operator of the offsetting unit toward which the unorthodox locations encroach in each case, and therefore no correlative rights will be affected. The mineral interest ownership underlying each of the offsetting units in the Special Infill Well Development area is identical.

(33) None of the unorthodox locations is closer than 660 feet to the outer boundaries of the proposed Special Infill Well Development Area, and therefore the correlative rights of offsetting operators and interest owners will not be adversely affected.

(34) NM&O Operating Company appeared at the hearing through counsel but did not oppose the granting of this application. Representatives of the Jicarilla Apache Nation and the Bureau of Indian Affairs (BIA) appeared at the hearing, made comments, but did not oppose the granting of this application. No other party appeared at the hearing to oppose this application.

The Division Concludes as Follows:

(35) In the interest of conservation, prevention of waste, and protection of correlative rights, there is need to establish the Gavilan-Pictured Cliffs Special Infill Well Development Area in portions of the Gavilan-Pictured Cliffs Pool. Ownership in the Gavilan-Pictured Cliffs Special Infill Well Development Area is common and identical, and Energen is the only working interest owner in this Area.

(36) The results of the 2003 and 2011 Infill Pilot Project in this area demonstrate that additional reserves will be recovered by drilling a new well, or re-completing a well in the 160-acre spacing and proration units in the Gavilan-Pictured

Cliffs Infill Well Development Area. These additional reserves would not have been recovered without any form of infill development in this area.

(37) Pursuant to Division Rule 19.15.12.11 A NMAC, the Director may grant an exception to Rule 19.15.12.9 NMAC to permit the commingling of multiple producing pools in existing or proposed well bores when the following conditions are met:

(a) The fluids from each pool are compatible and combining the fluids will not damage the pools.

(b) The commingling will not jeopardize the efficiency of present or future secondary recovery operations in the pools to be commingled.

(c) The bottom perforation of the lower zone is within 150 percent of the depth of the top perforation in the upper zone and the lower zone is at or below normal pressure with normal pressure assumed to be 0.433 psi per foot of depth. If the pools to be commingled are not within this vertical interval, then evidence is required to demonstrate that commingling will not result in shut in or flowing well bore pressures in excess of any commingled pool's fracture parting pressure. The fracture parting pressure is assumed to be 0.65 psi per foot of depth unless the applicant submits other measured or calculated pressure data acceptable to the division.

(d) The commingling will not result in the permanent loss of reserves due to cross-flow in the well bore.

(e) Fluid-sensitive formations that may be subject to damage from water or other produced liquids are protected from contact with the liquids produced from other pools in the well.

(f) If any of the pools being commingled is prorated, or the well's production has been restricted by Division order in any manner, the allocated production from each producing pool in the commingled well bore shall not exceed the top oil or gas allowable rate for a well in that pool or rate restriction applicable to the well.

(g) The commingling will not reduce the value of the total remaining production.

(h) Correlative rights will not be violated.

(38) The engineering evidence presented by the applicant at the hearing demonstrates that the above criteria will be met in any downhole commingling, or trimming operations in the Gavilan-Pictured Cliffs Special Infill Well Development Area.

(39) Further, Rule 19.15.12.11 D(1) authorizes the Division to pre-approve downhole commingling on an area-wide or pool-wide basis by establishing a reference case where the existence of sufficient data for a lease, pool, formation or geographical area makes it unnecessary for an operator to provide redundant information on Form C-107-A. Further, the Division can specify the criteria for commingling and may provide that C-107-A filings can reflect the Division order number pre-approving commingling for the area or pools involved.

(40) This case should be designated as "a Reference Case" for area-wide approval for the Gavilan-Pictured Cliffs Special Infill Well Development Area, for the purpose of downhole commingling or tri-mingling operations. The ownership in all the zones of the Gavilan-Pictured Cliffs Special Infill Well Development area is common and identical in all respects, therefore, no correlative rights will be violated. Accordingly, blanket approval should be granted to the applicant to implement commingling operations in the Gavilan-Pictured Cliffs Special Infill Well Development Area without further approval.

(41) The applicant would be required to file Form C-107-A for informational purposes only with the Aztec District Office. The Form C-107-A will contain the allocation method, the order number and reference case.

(42) This blanket approval will improve processes and procedures, and will reduce the regulatory burdens for both the operator and the Division.

(43) Correlative right is not an issue in this application as there are no other owners of any rights to produce gas anywhere in the Gavilan-Pictured Cliffs Special Infill Development Area, the engineering evidence presented at the hearing is satisfactory, waste will be prevented, therefore, this application should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The Application of Energen Resources Corporation to establish the Gavilan-Pictured Cliffs Special Infill Well Development Area described in Finding Paragraph (4) of this Order in Rio Arriba County, New Mexico, is hereby approved.

(2) The Gavilan-Pictured Cliffs Special Infill Well Development Area is excepted from the well development density limitations of Rule 19.15.15.11 C NMAC to allow two producing gas wells per 160-acre spacing and proration unit.

(3) The unorthodox locations in the Pictured Cliffs formation for the sixteen (16) wells described in Finding Paragraph (31) of this Order are approved.

(4) The Applicant is authorized to dually complete new wells to be drilled in both the Pictured Cliffs and Mesaverde formations in the Gavilan-Pictured Cliffs Special Infill Well Development Area.

(5) The Applicant is authorized to commingle oil and gas production from the Mesaverde formation with production from the Pictured Cliffs formation in those wells described in Findings Paragraphs (14) and (15) of this order, as well as in any future Mesaverde and Pictured Cliffs formation wells it may drill at any available location throughout the Gavilan-Pictured Cliffs Special Infill Well Development Area. In addition, the Applicant is authorized to commingle production from the Mesaverde formation, the Pictured Cliffs formation and the Mancos formation in the wells described in Finding Paragraph (27).

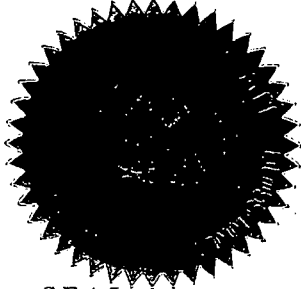
(6) The operator shall notify the Aztec District Office of the Division on determination of the allocation of production among formations by filing a form C-107-A for each well described in Findings Paragraphs (14), (15) and (27) of this Order or any wells which are subsequently drilled in the Gavilan-Pictured Cliffs Special Infill Well Development Area.

(7) In order to reduce the regulatory burdens for both the operator and the Division, the Form C-107-A which shall be filed with the Aztec District Office is for informational purposes only, and no further authorizations or approvals shall be required.

(8) The Form C-107-A shall make reference to this order and shall include the information for the Fixed Percentage Allocation Formula line item and supporting data.

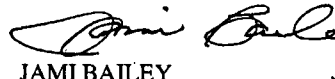
(9) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JAMI BAILEY
Director