Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM92160

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM111040

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

8. Well Name and No.
CHOSA DRAW 27 FEDERAL COM 1

2. Name of Operator
CIMAREX ENERGY COMPANY OF CO
Contact: AMITHY E CRAWFORD
E-Mail: acrawford@cimarex.com

9. API Well No.
30-015-32918-00-D1

3a. Address
202 S CHEYENNE AVE SUITE 1000
TULSA, OK 74103.4346

3b. Phone No. (include area code)
Ph: 432-620-1909

10. Field and Pool, or Exploratory
COTTON DRAW

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 27 T25S R26E NWNE 330FNL 1980FEL

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK 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
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Subsurface Commingling
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex respectfully requests approval to plugback the Morrow, add additional perfs in the Penn and recomplete to the Wolfcamp pool. Cimarex also proposes downhole commingle production from the Penn and Wolfcamp zones. Please see attached recompletion procedure for your review and approval.

The 2016 White City Area Downhole Commingling Field Study included the referenced wells for commingling. The Field study was submitted and approved by the BLM on 7/6/16.

DHC-3990-A approves the commingling of the Cisco and Wolfcamp zones by the NMOCD.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Attachments:

C102s, Recompletion and Commingling Procedure, current & proposed wellbore schematic, oil, water, &

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 29 2016

RECEIVED

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #344955 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad
Committed to AFMSS for processing by CHRISTOPHER WALLS on 07/22/2016 (16CRW0075SE)

Name *(Printed/Typed)* AMITHY E CRAWFORD — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 07/18/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By [signature] — Title Eng — Date 7/22/16

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 CFO

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #344955 that would not fit on the form

32. Additional remarks, continued

gas analysis and commingling worksheet form.

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

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
30-015-32916	97354	Cotton Draw; Upper Penn (G)

[4] Property Code	[5] Property Name	[6] Well Number
32670	Chosa Draw 27 Federal Com	#1

[7] OGRID No.	[8] Operator Name	[9] Elevation
162683	Cimarex Energy Co. of Colorado	3265'

[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
B	27	25-S	26-E		330'	North	1980'	East	Eddy

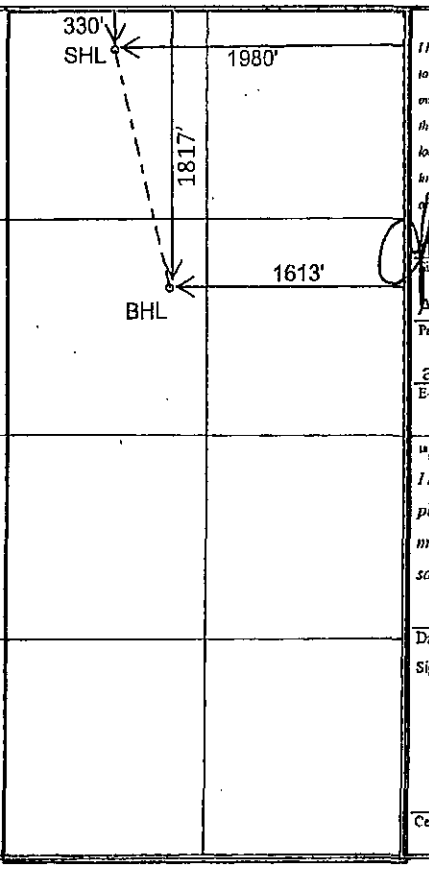
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	27	25-S	26-E		1817'	North	1613'	East	Eddy

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320	N	C	

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.

Signature — Date: 6/23/2016

Amithy Crawford
Printed Name

acrawford@clmarex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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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

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
30-015-32918	96890	Sage Draw; Wolfcamp, East (G)

[4] Property Code	[5] Property Name	[6] Well Number
32670	Chosa Draw 27 Federal Com	#1

[7] OGRID No.	[8] Operator Name	[9] Elevation
162683	Cimarex Energy Co. of Colorado	3265'

[10] Surface Location

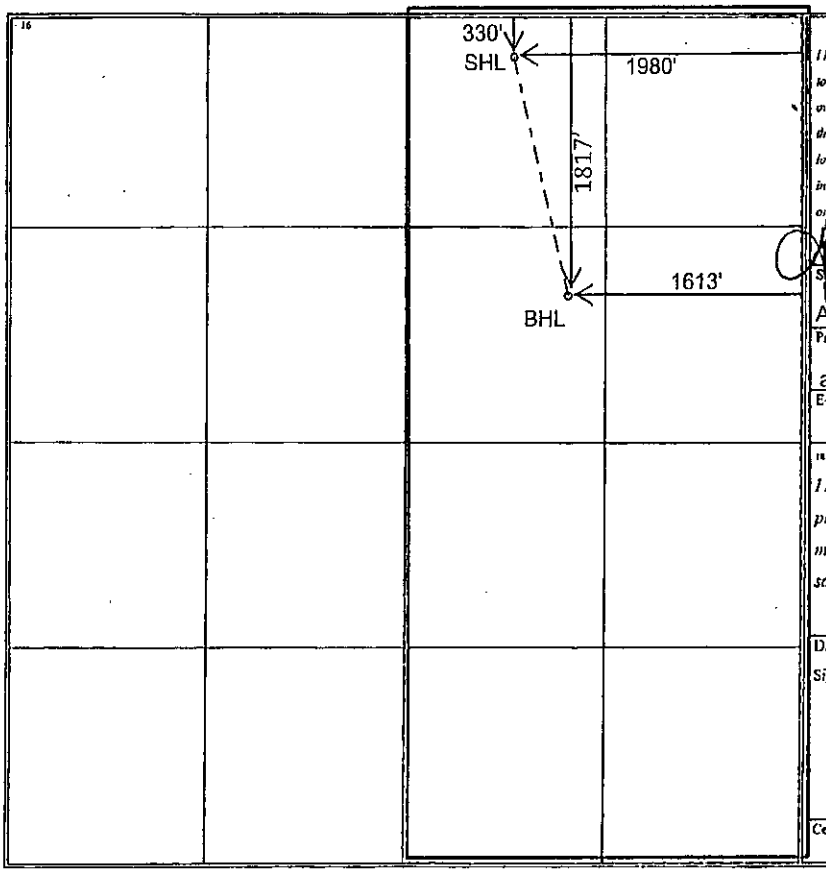
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	27	25-S	26-E		330'	North	1980'	East	Eddy

[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
G	27	25-S	26-E		1817'	North	1613'	East	Eddy

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320	N	C	

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.

Amithy Crawford 5/23/2016
Signature Date

Amithy Crawford
Printed Name

acrawford@cimarex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

Downhole Commingling Worksheet

Operator:	Cimarex Energy
Lease/Well Name/API Number/Location:	Chosa Draw 27 Fed Com 1/30-015-32918/Sec. 27, T25S, R26E
Date:	

Data	Bottom Formation	Middle Formation	Upper Formation	Estimated Combined Production Data
Pool name	Cottonwood Draw; Upper Penn		Wolfcamp	
Pool Code	97354			
State Form C-102 with dedicated Acres Provided	320 acres		320 acres	320 acres
Formation Name	Cisco Canyon		Wolfcamp	
Top and Bottom of Pay Section (Perforated or open-Hole interval)	10372'-10412'		8570'-9950'	8570'-10412'
Method of production	Flowing		Flowing	Flowing
Bottom Hole Pressure	Within 150% of top perf		Within 150% of top perf	Within 150% of top perf
Reservoir Drive mechanism	Gas Drive		Gas Drive	Gas Drive
Oil gravity and/or BTU	Oil: 53.5° API Gas: 1142.4 BTU dry / 1122.6 BTU wet @ 14.73 psi		Oil: 51.8° API Gas: 1225.8 BTU dry / 1204.6 BTU wet	Oil: 52.2° API Gas: 1208.3 BTU dry / 1187.4 BTU wet @ 14.7 psi
Average Sulfur Content (Wt %)	0		0	0
Oil sample Analysis provided	Yes		Yes	
Gas Analysis provided	Yes		Yes	
Produce Water Analysis provided	Yes		Yes	
H2S present	No		No	No
Producing, Shut-In or New Zone	Producing plus New Zone		New Zone	
Date and Oil/Gas/Water rates of Last Production (new zones or no production history Operator shall attached production estimated and supporting data)	Date: 5/13/2016 Expected Rate: 17 BOPD, 575 MCFPD, 137 BWPD		Date: N/A Expected Rate: 65 BOPD, 2165 MCFD, 516 BWPD	Date: N/A Expected Rate: 82 BOPD, 2740 MCFD, 653 BWPD
Average decline % (provide back up data)	7% (terminal)		7% (terminal)	7% (teterminal)
Fixed Allocation Percentage	Oil: 21% Gas: 21%		Oil: 79% Gas: 79%	Oil: 100% Gas: 100%

Remarks:	Production history for analogs for all three zones provided in appendix.
Operator Signature:	Stacy Crawford
Date:	7/18/16

Attached Supporting documents

State Form C-102 with dedicated Acres Provided

Oil sample Analysis provided (Must be current)

Gas Analysis provided (Must be current)

Produce Water Analysis provided (Must be current)

Any additional supporting data (i.e. offset well production and decline curves etc..)

*Utilize weighted average.

CIMAREX

APPENDIX D

Chosa Draw 27 Fed Com 1
Recomplete to Cisco Canyon and Wolfcamp
Michael Karner 7-14-2016
AFE 3616121RC

Well Data

KB	10' above GL
TD	12,300'
PBTD	12,267'
Casing	13-3/8" 48 & 54.5# H-40 & J-55 csg @ 431'. Cmt'd w/ 490 sx, cmt circ. 9-5/8" 40# NS-110HC csg @ 3,200'. Cmt'd w/ 1,050 sx, cmt circ. 7" 26# P-110HC csg @ 10,745'. Cmt'd w/ 550 sx. TOC @ 7,956'. DV @ 5,448'. Cmt'd w/ 400 sx. No cmt above DV tool per CBL. 4-1/2" 11.6# P-110 @ 12,300'. Cmtd w/ 160 sx. TOL @ 10,492'.
Tubing	2-3/8" 4.7# L-80 8rd @ ± 11,726' (360 jts)
Prod. Perfs	Morrow (11,836' – 12,233') Cisco Canyon (10,372' – 10,412')
Proposed Perfs	Wolfcamp (8,570' – 9,950') & Cisco Canyon (10,082' – 10,642')

Procedure

Notify BLM 24 hours prior to start of workover operations.

1. Test anchors prior to MIRU PU.
2. MIRU PU, rental flare, and choke manifold.
3. Kill well with FW as necessary.
4. ND WH, NU 10K BOP
5. TOOH w/ 2-3/8" 4.7# L-80 tbg. Stand back tubing.
   Note: No packer in well
6. PU 4" bit, casing scraper for 4-1/2" 11.6# P-110 csg, and casing scraper for 7" 26# P-110HC csg to perform bit and scraper run with bottomhole assembly as follows from downhole up:
   a. 3-7/8" bit
   b. Casing scraper for 4-1/2" csg
   c. 1,294' 2-3/8" 4.7# L-80 tbg
   d. Casing scraper for 7" csg
   e. 2-3/8" 4.7# L-80 tbg (note: 49' / 2 additional joints of 2-3/8" 4.7# L-80 tbg will be necessary if tbg is in good condition in order for 7" casing scraper to tag 4-1/2" liner top).
7. TIH w/ 4-1/2" x 2-3/8" CIBP on 2-3/8" 4.7# L-80 tbg to set CIBP @ +/- 11,786' (50' above current Morrow perforations at 11,836').
8. TOOH w/ 2-3/8" 4.7# L-80 tubing and stand back tubing.

9. TIH w/ 7" x 2-3/8" 10k AS-1X packer on 2-3/8" 4.7# L-80 tbg to set packer at +/- 10,322' (50' above current Cisco Canyon perfs)
10. RU pump truck to casing annulus and test casing to 8,000 psi (max treating pressure, 80% of 7" 26# P-110HC csg burst). This test must be held for 30 minutes with no more than 10% leakoff and the results must be submitted to the BLM
11. Release packer and TIH to set packer at +/- 10,462' (50' below current Cisco Canyon perfs at 10,412' / 30' uphole of top of 4-1/2" 11.6# P-110 liner).
12. RU 10K TIW valve to 2-3/8" 4.7# L-80 tbg and RU pump truck and test casing to 8,000 psi (max treating pressure, 80% of 7" 26# P-110HC csg burst, 75% of 4-1/2" 11.6# P-110 burst). This test must be held for 30 minutes with no more than 10% leakoff and the results must be submitted to the BLM
    Note: If casing does not test plan to TOOH and run casing inspection log.
13. Release 7" x 2-3/8" 10k AS-1X packer and TOOH laying down tubing on racks.
14. MIRU WL and 5k short lubricator
15. RIH w/ GR/JB/CCl for 7" 26# P-110HC casing to tag liner top at 10,492'
16. RIH w/ GR/JB/CCl for 4-1/2" 11.63 P-110 casing to tag CIBP @ +/- 11,786'
17. RIH w/ ~~dump bailer~~ Tubing to ~~dump 35'~~ Pump 25 Sx of cement on top of CIBP @ 11,786'. Abandon Morrow zone.
18. RIH w/ Weatherford Ultrasonic Cement Scanner to +/- 9,000'
19. ND BOP, NU WH, RDMO pulling unit
20. MIRU water transfer with frac tanks to contain water to be pumped from frac pond
21. MIRU WL and 5k short lubricator
22. Test frac valves and flow cross prior to job. Arrange for these items, manlift, forklift, and Pace testers to be on location the day before the frac job to test so that we do not have the frac waiting on a successful test the following day.
23. Perforate stage one Cisco Canyon as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
1	10640	10642	2	6
	10608	10610	2	6
	10582	10584	2	6
	10546	10548	2	6
	10529	10531	2	6
	10501	10503	2	6
	10462	10464	2	6
	10425	10427	2	6
Top Existing	10372	10372	NA	NA
Totals		270		48

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

24. RU frac and flowback equipment.

25. Acidize and frac stage 1 Cisco Canyon perfs down casing w/ 2,500 gallons acid and 164,362 gallons slick water containing 50,000# 100 mesh and 100,000 40/70 sand.
26. Set 10k flow through composite plug at 10,322'
27. Test to 8,000 psi
28. Perforate stage two Cisco Canyon as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
2	10316	10318	2	6
	10285	10287	2	6
	10247	10249	2	6
	10180	10182	2	6
	10144	10146	2	6
	10082	10084	2	6
Totals		234		36

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

29. Acidize and frac stage 2 Cisco Canyon perfs down casing w/ 2,500 gallons acid and 135,761 gallons slick water containing 40,000# 100 mesh and 80,000 40/70 sand.
30. Set 10k flow through composite plug at 10,032'
31. Test to 8,000 psi
32. Perforate stage three Wolfcamp as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
3	9948	9950	2	6
	9919	9921	2	6
	9883	9885	2	6
	9853	9855	2	6
	9825	9827	2	6
	9804	9806	2	6
	9763	9765	2	6
Totals		187		42

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

33. Acidize and frac stage 3 Wolfcamp perfs down casing w/ 2,500 gallons acid and 238,543 gallons slickwater followed containing 75,000# 100 mesh and 150,000 40/70 sand.
34. Set 10k flow through composite plug at 9,745'
35. Test to 8,000 psi
36. Perforate stage four Wolfcamp as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
4	9726	9728	2	6
	9696	9698	2	6
	9662	9664	2	6
	9637	9639	2	6
	9615	9617	2	6
	9580	9582	2	6
	9543	9545	2	6
Totals		185		42

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

37. Acidize and frac Stage 4 Wolfcamp perfs down csg w/ 2500 gals acid & 214,102 gals slick water containing 67,000# 100 mesh & 133,000# 40/70 sand.
38. Set 10k flow through composite plug at 9,519'
39. Test to 8,000 psi
40. Perforate stage five Wolfcamp as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
5	9495	9497	2	6
	9471	9473	2	6
	9440	9442	2	6
	9413	9415	2	6
	9392	9394	2	6
	9364	9366	2	6
	9338	9340	2	6
Totals		159		42

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

41. Acidize and frac Stage 5 Wolfcamp perfs down csg w/ 2500 gals acid & 213,926 gals slick water containing 67,000# 100 mesh & 133,000# 40/70 sand.
42. Set 10k flow through composite plug at 9,288'
43. Test to 8,000 psi
44. Perforate stage six Wolfcamp as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
6 Wolfcamp A	9018	9020	2	6
	8967	8969	2	6
	8923	8925	2	6
	8888	8890	2	6
	8859	8861	2	6
	8825	8827	2	6
Totals		195		36

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

45. Acidize and frac Stage 6 Wolfcamp perfs down csg w/ 2500 gals acid & 179,616 gals slick water containing 56,000# 100 mesh & 108,000# 40/70 sand.
46. Set 10k flow through composite plug at 8,796'
47. Test to 8,000 psi
48. Perforate stage seven Wolfcamp as per design below. Depth reference Halliburton Spectral Density Dual Spaced Neutron Log dated December 19, 2005:

Stage	Top Depth	Bottom Depth	Interval Length	Number Shots @ 3/ft
7 Wolfcamp A	8767	8769	2	6
	8729	8731	2	6
	8695	8697	2	6
	8653	8655	2	6
	8630	8632	2	6
	8607	8609	2	6
	8570	8572	2	6

Totals	199	42

Note: Monitor 9-5/8" x 7" annulus throughout entire frac job with pressure transducer. If any unexpected pressure is seen on annulus shut down and contact office for go forward procedure.

49. Acidize and frac Stage 7 Wolfcamp perfs down csg w/ 2500 gals acid & 237,665 gals slick water containing 75,000# 100 mesh & 150,000# 40/70 sand.
50. RD frac
51. MIRU 2" coiled tbg unit.
52. TIH w/ tri cone bit & extreme downhole motor on 2" CT and drill out sand and composite plugs leaving flow through plug above Morrow at +/- 11,786'. Make a minimum of 2 gel sweeps while drilling out composite plugs.
53. Clean out to PBTD
54. TOOH w/ tri cone bit, motor & CT
55. RDMO coiled tbg unit.
56. Flow back well for 24 hours, then SI well overnight.
57. RU wireline and full 10k lubricator.
58. RIH w/ GR/JB to tag flow through plug +/- 50' above Morrow.
59. RIH w/ 2-3/8" WEG, 2-3/8" pump out plug pinned for 1,500 – 2,000 psi differential pressure, 10' 2-3/8" 4.7# L-80 tbg sub w/ 1.875" XN profile nipple w/ blanking plug in place, 7" Arrowset 1X packer and on-off tool stinger w/ 1.875" X profile nipple. Set packer +/- 50' uphole of top perf. From downhole up:
    a. 2-3/8" WEG
    b. 2-3/8" pump out plug pinned for 1,500 – 2,000 psi differential pressure
    c. 1.875" XN profile nipple w/ blanking plug
    d. 10' 2-3/8" 4.7# L-80 tbg sub
    e. 7" x 2-3/8" Arrowset 1X packer and on-off tool stinger w/ 1,875" X profile nipple
60. RD WL and 10k lubricator
61. MIRU PU
62. ND goat head and frac valve, NU BOP
63. TIH w/ on/off tool overshot, GLVs, and new 2-3/8" 4.7# L-80 tbg.
64. Latch overshot onto on-off tool and space out tubing
65. ND BOP, NU WH
66. RDMO pulling unit
67. RU pump truck and pump out plug. Put well on production.
68. **Run Production Log for allocation purposes after recovering load. Run additional production logs if actual production varies significantly from expected performance. Send copies of these logs to BLM and file for an adjustment of allocation factor if necessary.**

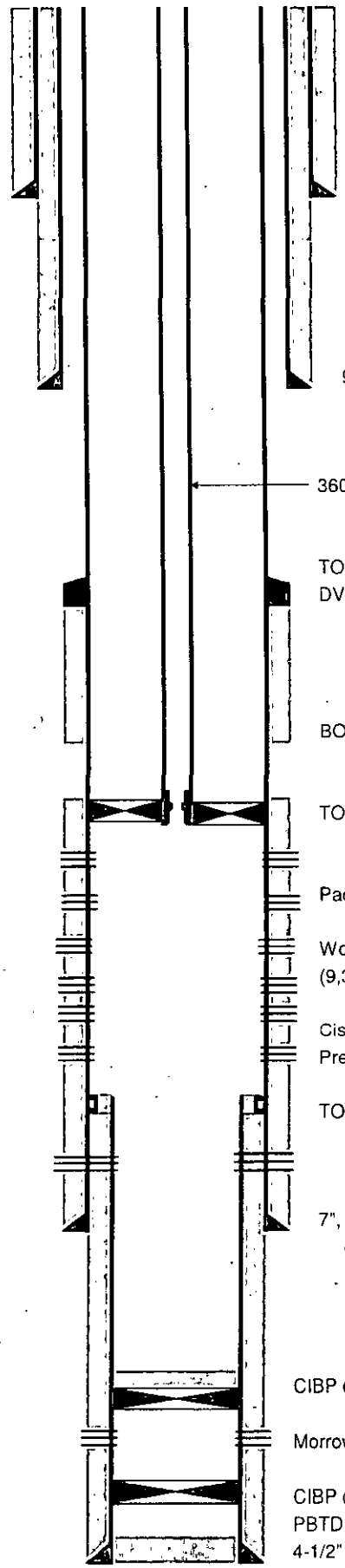
CIMAREX

Proposed WBD

KB - 23' above GL

Cimarex Energy Co. of Colorado
Chosa Draw 27 Federal Com #1
SHL - 330' FNL & 1980' FEL
BHL - 1817' FNL & 1613' FEL
Sec. 27, T-25-S, R-26-E, Eddy Co., NM
M. Karner 07/14/2016

DIRECTIONAL WELL>20 deg 9370-TD



13-3/8", 48 & 54.5# H-40 & J-55 csg @ 431'
cmtd w/ 490 sx, cmt circ

9-5/8", 40# NS-110HC csg @ 3200'
cmtd w/ 1050 sx, cmt circ

360 jts 2-3/8" 4.7# L-80 tbg

TOC @ 5448' per CBL
DV Tool @ 5448'
cmtd w/ 400 sx

BOC @ 7196' per CBL

TOC @ 7956' per CBL

Packer Depth 8,520'

Wolfcamp perfs (8,570' - 8,769'), (8,825' - 9,020'), (9,338' - 9,497'), (9,543' - 9,728'), and (9,763' - 9,950')

Cisco Canyon perfs (10,082' - 10,318'), (10,372' - 10,642')
Previous Cisco Canyon perfs (10372' - 10412')

TOL @ 10492'

7", 26# P-110HC csg @ 10745'
cmtd w/ 550 sx

Top of Morrow 11,600

25 Sx Pumped
CIBP @ +/- 11,786' with ~~35~~ of cement ~~bailed~~ on top

Morrow perfs (11836' - 12233')

CIBP @ 12267'
PBTD @ 12287'
4-1/2" 11.6# P-110 @ 12300' cmtd w/ 160 sx
TD @ 12300'

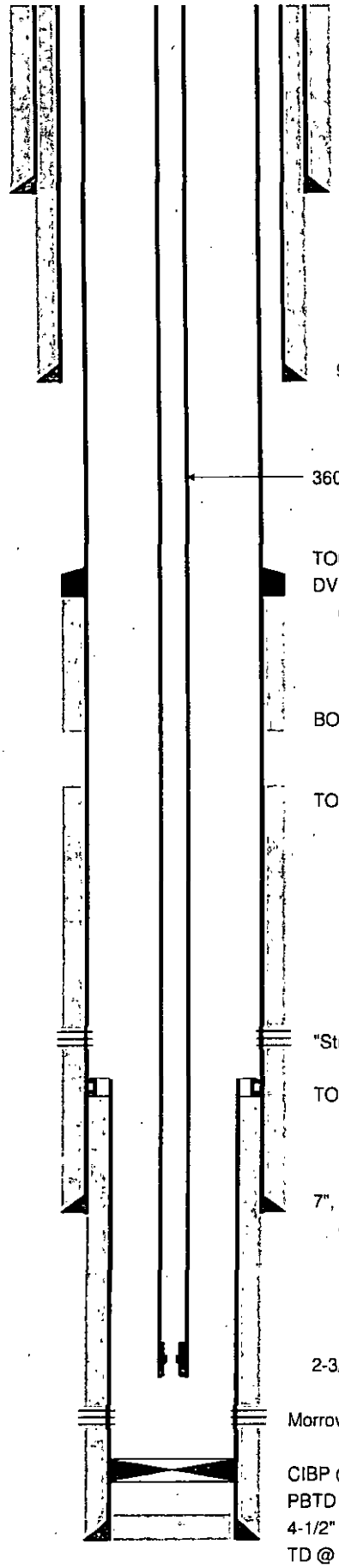
Printed 7/14/2016

Current WBD

KB - 23' above GL

Cimarex Energy Co. of Colorado
Chosa Draw 27 Federal Com #1
SHL - 330' FNL & 1980' FEL
BHL - 1817' FNL & 1613' FEL
Sec. 27, T-25-S, R-26-E, Eddy Co., NM
S. Gengler/DP 03/10/2010; 7/7/14

DIRECTIONAL WELL>20 deg 9370-TD



13-3/8", 48 & 54.5# H-40 & J-55 csg @ 431'
cmtd w/ 490 sx, cmt circ

9-5/8", 40# NS-110HC csg @ 3200'
cmtd w/ 1050 sx, cmt circ

360 jts 2-3/8" 4.7# L-80 tbg

TOC @ 5448' per CBL
DV Tool @ 5448'
cmtd w/ 400 sx

BOC @ 7196' per CBL

TOC @ 7956' per CBL

Cisco or
"Strawn" perfs (10372' - 10412')

TOL @ 10492'

7", 26# P-110HC csg @ 10745'
cmtd w/ 550 sx

2-3/8" SN @ 11737'

Morrow perfs (11836' - 12233')

CIBP @ 12267'
PBTD @ 12287'
4-1/2" 11.6# P-110 @ 12300' cmtd w/ 160 sx
TD @ 12300'

Printed 5/20/2016

LABORATORY SERVICES
Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For:	Cimarex Energy	Sample:	Sta. # 309588185
	Attention: Mark Cummings	Identification:	Wigeon 23 Fed Com 1
	600 N. Marienfeld, Suite 600	Company:	Cimarex Energy
	Midland, Texas 79701	Lease:	
		Plant:	

Sample Data:	Date Sampled	7/30/2013	12:25 PM	
	Analysis Date	7/31/2013		
	Pressure-PSIA	900	Sampled by:	Taylor Ridings
	Sample Temp F	107	Analysis by:	Vicki McDaniel
	Atmos Temp F	85		

H2S = 0.3 PPM

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S		
Nitrogen	N2	0.677	
Carbon Dioxide	CO2	0.123	
Methane	C1	82.764	
Ethane	C2	9.506	2.536
Propane	C3	3.772	1.037
I-Butane	IC4	0.640	0.209
N-Butane	NC4	1.185	0.373
I-Pentane	IC5	0.335	0.122
N-Pentane	NC5	0.374	0.135
Hexanes Plus	C6+	0.624	0.270
		100.000	4.681

REAL BTU/CU.FT.		Specific Gravity	
At 14.65 DRY	1219.2	Calculated	0.6973
At 14.65 WET	1197.9		
At 14.696 DRY	1223.0		
At 14.696 WET	1202.1	Molecular Weight	20.1966
At 14.73 DRY	1225.8		
At 14.73 Wet	1204.6		

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121

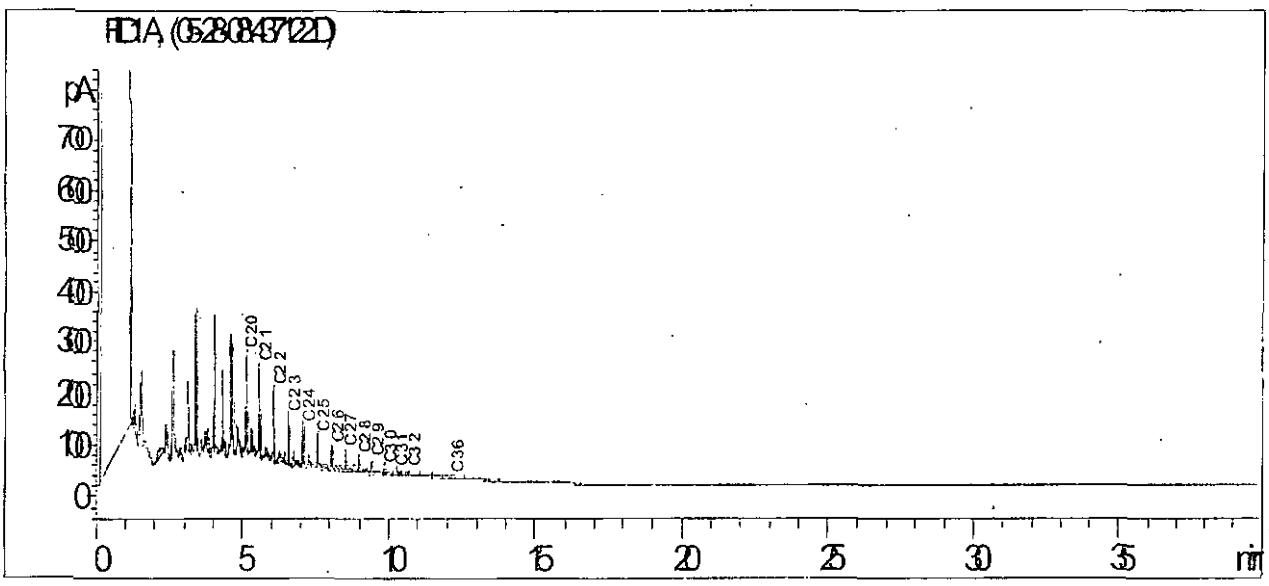
Lab Team Leader - Sheila Hernandez
(432) 495-7240

OIL ANALYSIS

Company:	CIMAREX ENERGY	Sales RDT:	44212
Region:	PERMIAN BASIN	Account Manager:	WAYNE PETERSON (575) 910-9389
Area:	CARLSBAD, NM	Analysis ID #:	3208
Lease/Platform:	WIGEON '23' FEDERAL	Sample #:	437122
Entity (or well #):	1	Analyst:	SHEILA HERNANDEZ
Formation:	WOLFCAMP	Analysis Date:	5/30/08
Sample Point:	FRAC TANK 234	Analysis Cost:	$100.00
Sample Date:	5/13/08		

Cloud Point:	<68 °F
Weight Percent Paraffin (by GC)*:	1.49%
Weight Percent Asphaltenes:	0.03%
Weight Percent Oily Constituents:	98.41%
Weight Percent Inorganic Solids:	0.07%

*Weight percent paraffin and peak carbon number includes only n-alkanes (straight chain hydrocarbons) greater than or equal to C20H42.



North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
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Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	CIMAREX ENERGY	Sales RDT:	44212
Region:	PERMIAN BASIN	Account Manager:	WAYNE PETERSON (505) 910-9389
Area:	CARLSBAD, NM	Sample #:	43887
Lease/Platform:	WIGEON UNIT	Analysis ID #:	82014
Entity (or well #):	23 FEDERAL 1	Analysis Cost:	$80.00
Formation:	UNKNOWN		
Sample Point:	SEPARATOR		

Summary	
Sampling Date:	05/14/08
Analysis Date:	05/15/08
Analyst:	WAYNE PETERSON
TDS (mg/l or g/m3):	90873.3
Density (g/cm3, tonne/m3):	1.062
Anion/Cation Ratio:	1
Carbon Dioxide:	150 PPM
Oxygen:	
Comments:	
TEST RAN IN THE FIELD	

Analysis of Sample 43887 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**55040.0**	**1552.48**	**Sodium:**	**32207.4**	**1400.94**
Bicarbonate:	**329.4**	**5.4**	**Magnesium:**	**268.0**	**22.05**
Carbonate:	**0.0**	**0.**	**Calcium:**	**2780.0**	**138.72**
Sulfate:	**225.0**	**4.68**	**Strontium:**		
Phosphate:			**Barium:**		
Borate:			**Iron:**	**23.5**	**0.85**
Silicate:			Potassium:		
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		7.31	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**7.31**	Manganese:		
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.94	27.24	-1.11	0.00	-1.14	0.00	0.00	0.00	0.00	0.00	0.13
100	0	0.97	31.09	-1.16	0.00	-1.12	0.00	0.00	0.00	0.00	0.00	0.19
120	0	0.99	35.26	-1.20	0.00	-1.08	0.00	0.00	0.00	0.00	0.00	0.28
140	0	1.02	39.74	-1.23	0.00	-1.02	0.00	0.00	0.00	0.00	0.00	0.38

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

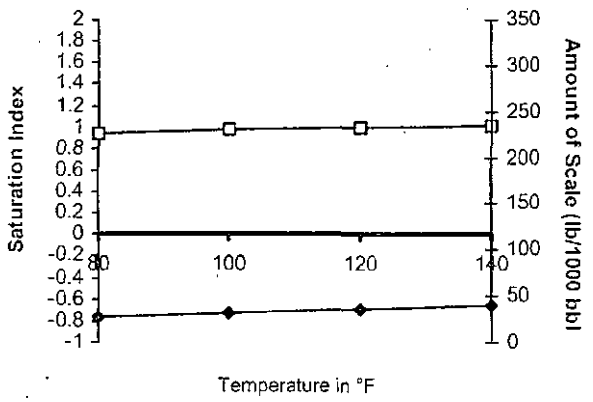
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

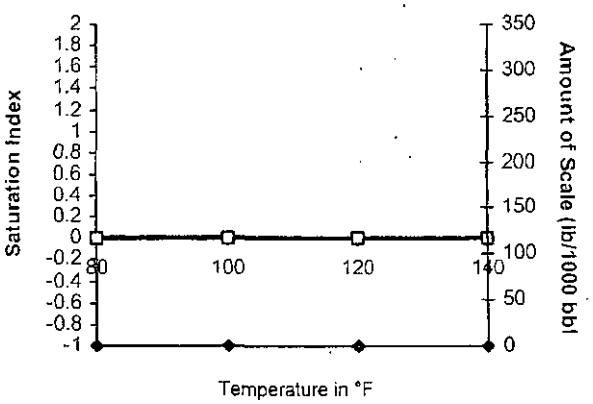
Scale Predictions from Baker Petrolite

Analysis of Sample 43887 @ 75 °F for CIMAREX ENERGY, 05/15/08

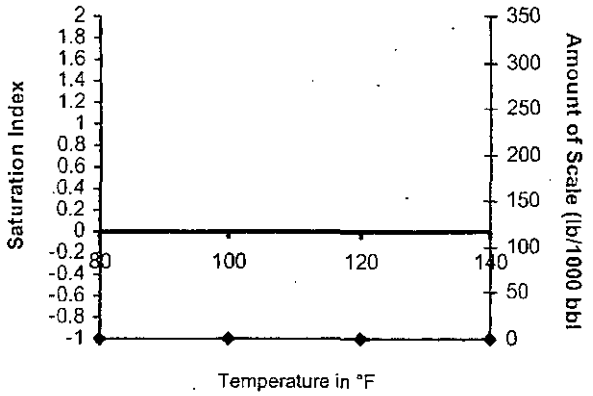
Calcite - CaCO3



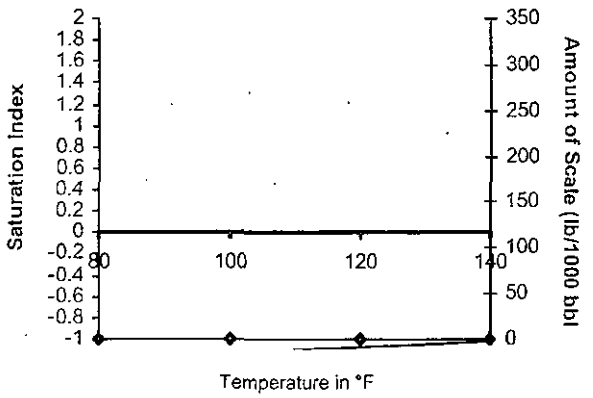
Barite - BaSO4



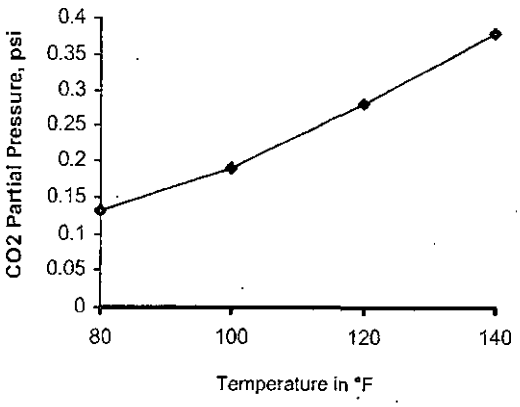
Gypsum - CaSO4*2H20



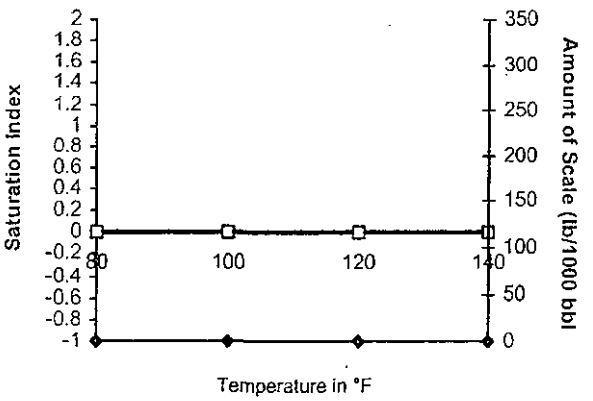
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



LABORATORY SERVICES
Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For:	Cimarex Energy	Sample:	Sta. # 309588438
	Attention: Mark Cummings	Identification:	Taos Fed. #3 Sales
	600 N. Marienfeld, Suite 600	Company:	Cimarex Energy
	Midland, Texas 79701	Lease:	
		Plant:	

Sample Data:	Date Sampled	7/2/2014	10:30 AM		
	Analysis Date	7/9/2014			
	Pressure-PSIA	83		Sampled by:	K. Hooten
	Sample Temp F	76.4		Analysis by:	Vicki McDaniel
	Atmos Temp F	76			

H2S =

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S		
Nitrogen	N2	0.618	
Carbon Dioxide	CO2	0.172	
Methane	C1	88.390	
Ethane	C2	7.080	1.889
Propane	C3	1.966	0.540
I-Butane	IC4	0.355	0.116
N-Butane	NC4	0.569	0.179
I-Pentane	IC5	0.198	0.072
N-Pentane	NC5	0.213	0.077
Hexanes Plus	C6+	0.439	0.190
		100.000	3.063

REAL BTU/CU.FT.		Specific Gravity	
At 14.65 DRY	1136.2	Calculated	0.6445
At 14.65 WET	1116.4		
At 14.696 DRY	1139.7		
At 14.696 WET	1120.3	Molecular Weight	18.6673
At 14.73 DRY	1142.4		
At 14.73 Wet	1122.6		

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
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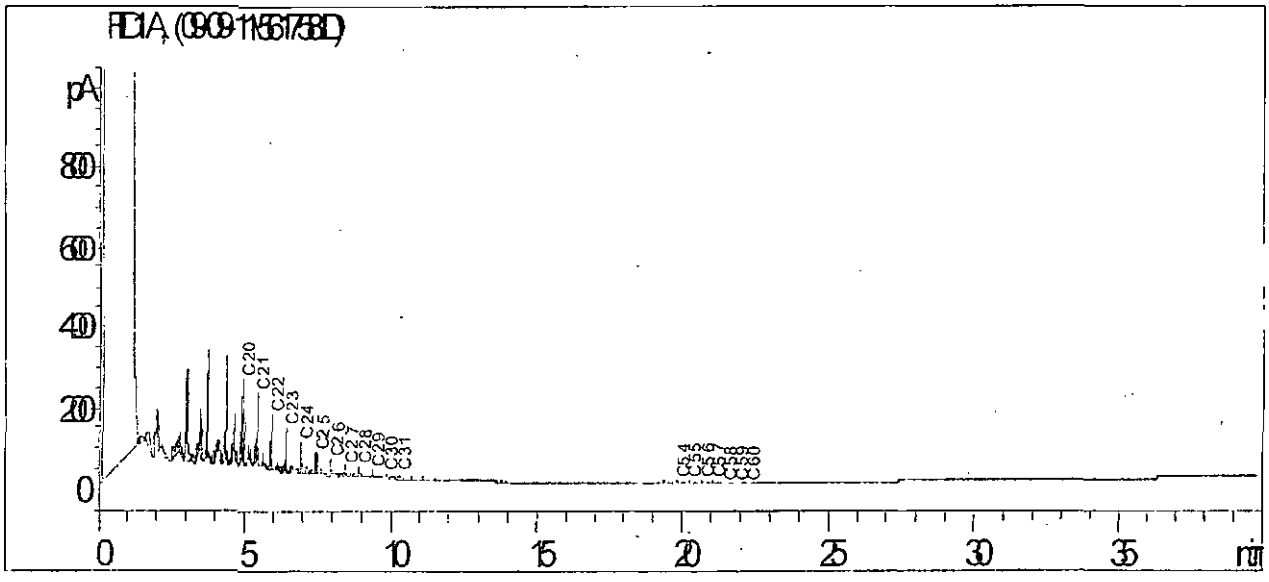
OIL ANALYSIS

Company:	CIMAREX ENERGY	Sales RDT:	33521
Region:	PERMIAN BASIN	Account Manager:	STEVE HOLLINGER (575) 910-9393
Area:	LOCO HILLS, NM	Analysis ID #:	5419
Lease/Platform:	TAOS FEDERAL LEASE	Sample #:	561758
Entity (or well #):	3	Analyst:	SHEILA HERNANDEZ
Formation:	UNKNOWN	Analysis Date:	09/13/11
Sample Point:	TANK	Analysis Cost:	$125.00
Sample Date:	08/24/11		

Cloud Point:	89 °F
Weight Percent Paraffin (by GC)*:	1.03%
Weight Percent Asphaltenes:	0.01%
Weight Percent Oily Constituents:	98.93%
Weight Percent Inorganic Solids:	0.03%

*Weight percent paraffin and peak carbon number includes only n-alkanes (straight chain hydrocarbons) greater than or equal to C20H42.



North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
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Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	CIMAREX ENERGY	Sales RDT:	33521
Region:	PERMIAN BASIN	Account Manager:	STEVE HOLLINGER (575) 910-9393
Area:	CARLSBAD, NM	Sample #:	535681
Lease/Platform:	TAOS FEDERAL LEASE	Analysis ID #:	113272
Entity (or well #):	3	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	SEPARATOR		

Summary	
Sampling Date:	09/28/11
Analysis Date:	10/13/11
Analyst:	SANDRA GOMEZ
TDS (mg/l or g/m3):	86836.7
Density (g/cm3, tonne/m3):	1.063
Anion/Cation Ratio:	1
Carbon Dioxide:	150 PPM
Oxygen:	
Comments:	
RESISTIVITY 0.083 OHM-M @ 75℉	

Analysis of Sample 535681 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**52535.0**	**1481.82**	**Sodium:**	**28338.7**	**1232.66**
Bicarbonate:	**146.0**	**2.39**	**Magnesium:**	**417.0**	**34.3**
Carbonate:	**0.0**	**0.**	**Calcium:**	**3573.0**	**178.29**
Sulfate:	**83.0**	**1.73**	**Strontium:**	**1472.0**	**33.6**
Phosphate:			**Barium:**	**22.0**	**0.32**
Borate:			**Iron:**	**34.0**	**1.23**
Silicate:			Potassium:	215.0	5.5
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		6	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**6**	Manganese:	1.000	0.04
			Nickel:		

Conditions — **Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl**

Temp	Gauge Press:	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.61	0.00	-1.46	0.00	-1.49	0.00	-0.05	0.00	1.22	11.59	1.14
100	0	-0.51	0.00	-1.51	0.00	-1.47	0.00	-0.07	0.00	1.04	10.94	1.44
120	0	-0.40	0.00	-1.54	0.00	-1.43	0.00	-0.07	0.00	0.89	10.30	1.76
140	0	-0.28	0.00	-1.57	0.00	-1.36	0.00	-0.06	0.00	0.75	9.66	2.07

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972

Permanent Abandonment of Production Zone Conditions of Approval

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plug back operations shall commence within **ninety (90)** days from this approval. **If you are unable to plug back the well by the 90th day provide this office, prior to the 90th day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged back. Failure to do so will result in enforcement action.**

2. **Notification: Contact the appropriate BLM office at least 24 hours prior to the commencing of any plug back operations. For wells in Eddy County, call 575-361-2822. For wells in Lea County, call 575-393-3612**

3. Blowout Preventers: A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.

4. Mud Requirement: Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of **brine** water. Minimum nine (9) pounds per gallon.

5. Cement Requirement: Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.
In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. **Before pumping cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.**

Unless otherwise specified in the approved procedure, the cement plug shall consist of either **Neat Class "C"**, for up to 7,500 feet of depth or **Neat Class "H"**, for deeper than 7,500 feet plugs.

6. Subsequent Plug back Reporting: Within 30 days after plug back work is completed, file one original and three copies of the Subsequent Report, Form 3160-5 to BLM. The report should give in detail the manner in which the plug back work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date work was completed.** If plugging back to a new zone submit a Completion Report, form 3160-4 with the Subsequent Report.

7. Trash: All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.