

**Carlsbad Field Office**  
**OCD Artesia**  
**HOBBS OCD**

Form 3160-3  
 (March 2012)

UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 BUREAU OF LAND MANAGEMENT

**JUL 11 2018**

**RECEIVED**

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No.
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. <b>(316077)</b> EK 31 BS2 FEDERAL COM 2H
2. Name of Operator MCELVAIN ENERGY INCORPORATED <b>(22044)</b>		9. API Well No. <b>30-025-44976</b>
3a. Address 1050 17th St #2500 Denver CO 80265	3b. Phone No. (include area code) (303)893-0933	10. Field and Pool, or Exploratory BONESPRING <b>(21650)</b>
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface SESE / 76 FSL / 817 FEL / LAT 32.7116689 / LONG -103.5937025 At proposed prod. zone SWSE / 150 FSL / 1989 FEL / LAT 32.6973556 / LONG -105.5974667		11. Sec., T. R. M. or Blk. and Survey or Area SEC 30 / T18S / R34E / NMP
14. Distance in miles and direction from nearest town or post office* 28 miles		12. County or Parish LEA
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 150 feet		13. State NM
16. No. of acres in lease 1111.44	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, 30 feet applied for, on this lease, ft.	19. Proposed Depth 10051 feet / 14957 feet	20. BLM/BIA Bond No. on file FED: COB000010
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3894 feet	22. Approximate date work will start* 06/16/2018	23. Estimated duration 24 days

**24. Attachments**

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

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification   |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature (Electronic Submission)	Name (Printed/Typed) Natalie Stallsworth / Ph: (303)857-9999	Date 12/04/2017
Title Regulatory Technician/Permitting Agent		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 06/12/2018
Title Supervisor Multiple Resources		
Office CARLSBAD		

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 conduct 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.

(Continued on page 2)

*SCP Rec 07/16/18*

**APPROVED WITH CONDITIONS**  
 Approval Date: 06/12/2018

**NM OIL CONSERVATION**  
 ARTESIA DISTRICT

JUN 27 2018

RECEIVED

*Ke*  
*07/16/18*  
*Dubin added*

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM 1:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications.

Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

### **Location of Well**

1. SHL: SESE / 76 FSL / 817 FEL / TWSP: 18S / RANGE: 34E / SECTION: 30 / LAT: 32.7116689 / LONG: -103.5937025 ( TVD: 0 feet, MD: 0 feet )  
PPP: SESE / 1320 FSL / 1980 FEL / TWSP: 18S / RANGE: 34E / SECTION: 31 / LAT: 32.7005353 / LONG: -103.597222 ( TVD: 10023 feet, MD: 13800 feet )  
PPP: SWNE / 2640 FNL / 1980 FEL / TWSP: 18S / RANGE: 34E / SECTION: 31 / LAT: 32.7038325 / LONG: -103.597222 ( TVD: 9929 feet, MD: 10219 feet )  
PPP: NWNW / 330 FNL / 1989 FEL / TWSP: 18S / RANGE: 34E / SECTION: 31 / LAT: 32.7105556 / LONG: -103.5975111 ( TVD: 9929 feet, MD: 10219 feet )  
BHL: SWSE / 150 FSL / 1989 FEL / TWSP: 18S / RANGE: 34E / SECTION: 31 / LAT: 32.6973556 / LONG: -105.5974667 ( TVD: 10051 feet, MD: 14957 feet )

## **BLM Point of Contact**

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Application Data Report

06/12/2018

**APD ID:** 10400024964

**Submission Date:** 12/04/2017

**Operator Name:** MCELVAIN ENERGY INCORPORATED



**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

## Section 1 - General

**APD ID:** 10400024964

**Tie to previous NOS?**

**Submission Date:** 12/04/2017

**BLM Office:** CARLSBAD

**User:** Natalie Stallworth

**Title:** Regulatory

**Federal/Indian APD:** FED

**Is the first lease penetrated for production Federal or Indian?** FED

Technician/Permitting Agent

**Lease number:** NMNM0245247

**Lease Acres:** 1111.44

**Surface access agreement in place?**

**Allotted?**

**Reservation:**

**Agreement in place?** NO

**Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** YES

**Permitting Agent?** YES

**APD Operator:** MCELVAIN ENERGY INCORPORATED

**Operator letter of designation:**

Agent\_Letter\_signed\_20171127164248.PDF

## Operator Info

**Operator Organization Name:** MCELVAIN ENERGY INCORPORATED

**Operator Address:** 1050 17th St #2500

**Zip:** 80265

**Operator PO Box:**

**Operator City:** Denver

**State:** CO

**Operator Phone:** (303)893-0933

**Operator Internet Address:** chris.caplis@mcelvain.com

## Section 2 - Well Information

**Well in Master Development Plan?** NO

**Master Development Plan name:**

**Well in Master SUPO?** EXISTING

**Master SUPO name:** EK 30 and 31 Multi-pad

**Well in Master Drilling Plan?** NO

**Master Drilling Plan name:**

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Well API Number:**

**Field/Pool or Exploratory?** Field and Pool

**Field Name:** BONESPRING

**Pool Name:**

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Describe other minerals:**

**Is the proposed well in a Helium production area?** N    **Use Existing Well Pad?** YES    **New surface disturbance?** N

**Type of Well Pad:** MULTIPLE WELL

**Multiple Well Pad Name:** EK 31    **Number:** 1H

BS2 FEDERAL COM

**Well Class:** HORIZONTAL

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** EXPLORATORY (WILDCAT)

**Describe sub-type:**

**Distance to town:** 28 Miles

**Distance to nearest well:** 30 FT

**Distance to lease line:** 150 FT

**Reservoir well spacing assigned acres Measurement:** 160 Acres

**Well plat:** EK\_31\_BS2\_Fed\_Com\_\_2H\_plat\_20171201103215.pdf

**Well work start Date:** 06/16/2018

**Duration:** 24 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NAVD88

**Survey number:**

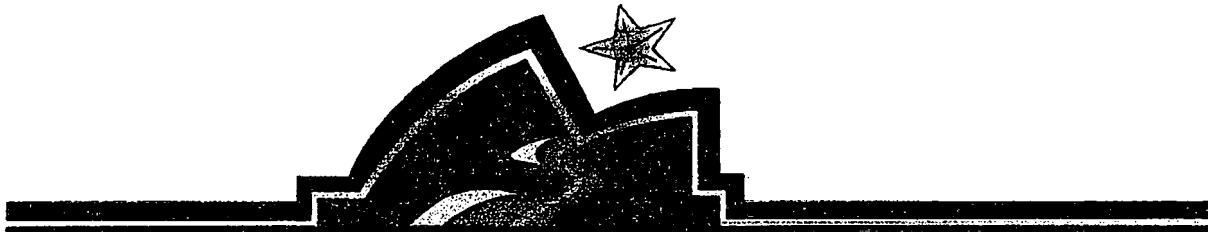
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	76	FSL	817	FEL	18S	34E	30	Aliquot SESE	32.71166 89	- 103.5937 025	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 024524 7	389 4	0	0
KOP Leg #1	10	FNL	198 0	FEL	18S	34E	31	Aliquot NWNE	32.71139 39	- 103.5972 22	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 024524 7	- 556 9	957 5	946 3
PPP Leg #1	330	FNL	198 9	FEL	18S	34E	31	Aliquot NWNE	32.71055 56	- 103.5975 111	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 024524 7	- 603 5	102 19	992 9

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	264 0	FNL	198 0	FEL	18S	34E	31	Aliquot SWNE 25	32.70383 25	- 103.5972 22	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 092780	- 603 5	102 19	992 9
PPP Leg #1	132 0	FSL	198 0	FEL	18S	34E	31	Aliquot SESE 53	32.70053 53	- 103.5972 22	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 107396	- 612 9	138 00	100 23
EXIT Leg #1	150	FSL	198 9	FEL	18S	34E	31	Aliquot SWSE 56	32.69735 56	- 103.5974 667	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 107396	- 615 3	147 77	100 47
BHL Leg #1	150	FSL	198 9	FEL	18S	34E	31	Aliquot SWSE 56	32.69735 56	- 105.5974 667	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 107396	- 615 7	149 57	100 51



**MCELVAIN ENERGY, INC.**  
**1050 17TH STREET, SUITE 2500**  
**DENVER, COLORADO 80265**

**CHRIS CAPLIS**  
**VICE PRESIDENT OF DRILLING AND COMPLETION**

**OFFICE: 303-962-6475      FAX: 303-893-0914**  
**E-MAIL: CHRIS.CAPLIS@MCELVAIN.COM**

Bureau of Land Management  
Carlsbad Field Office  
620 E. Greene St.  
Carlsbad, NM 88220

Attn: Minerals Division

Re: All McElvain Energy Inc. wells in New Mexico

Gentlemen:

This letter is to inform you that Permitco Inc. is authorized to act as Agent and to sign documents on behalf of McElvain Energy Inc. when necessary for filing county, state and federal permits including Onshore Order No. 1, Right of Way applications, etc., for the above mentioned well.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production or compliance with regulations.

McElvain Energy Inc. agrees to accept full responsibility for operations conducted in order to drill, complete and produce the above-mentioned well.

Sincerely,

Chris Caplis  
MCELVAIN ENERGY, INC.  
1050 17TH STREET, SUITE 2500  
DENVER, COLORADO 80265



**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Casing Attachments**

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**Casing ID:** 1      **String Type:** CONDUCTOR

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

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**Casing ID:** 2      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

EK\_31\_BS2\_Fed\_Com\_2H\_\_\_Casing\_Safety\_Factor\_Calculations\_20171130163236.pdf

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**Casing ID:** 3      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

EK\_31\_BS2\_Fed\_Com\_2H\_\_\_Casing\_Safety\_Factor\_Calculations\_20171130163246.pdf

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**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Pressure Rating (PSI):** 5M

**Rating Depth:** 6000

**Equipment:** 5000 PSI BOP

**Requesting Variance?** NO

**Variance request:**

**Testing Procedure:** As outlined in Onshore Order #2

**Choke Diagram Attachment:**

Choke\_Manifold\_Diagrams\_20171128095620.pdf

**BOP Diagram Attachment:**

5K\_BOP\_20171128095654.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	CONDUCTOR	26	20.0	NEW	API	N	0	80	0	80			80	OTHER	0	N/A						
2	SURFACE	17.5	13.375	NEW	API	N	0	1809	0	1809			1809	J-55	54.5	STC	1.42	2.67	DRY	5.55	DRY	5.55
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4929	0	4929			4929	L-80	40	OTHER - BTC	1.21	1.84	DRY	4.67	DRY	4.67
4	PRODUCTION	8.5	5.5	NEW	API	N	0	14777	0	10047			14777	P-110	20	OTHER - BTC	1.52	1.32	DRY	3.17	DRY	3.17

### Casing Attachments

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Pit volume totalizer equipment will be on each pit to monitor pit levels

**Describe the mud monitoring system utilized:** A trip tank with a PVT will be used to monitor trip volumes. Sufficient mud materials will be kept on location to weight mud up to 11.0 ppg if required. Additional material will also be available to combat lost circulation and high torque/drag.

### Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1807	OTHER : Native Fresh Water Based	8.4	9.4							Viscosity: 36-40, Fluid loss: NC, pH: 8.5-9.0
1807	4929	SALT SATURATED	9.9	10.1							Viscosity: 29-30, Fluid loss: NC, pH: 10-10.5
4929	10047	OTHER : Cut Brine, Ancozan PAC	8.8	9.4							Viscosity: 40-50, pH: 10-10.5

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

None

**List of open and cased hole logs run in the well:**

CBL,GR,MWD

**Coring operation description for the well:**

None

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Casing Attachments**

**Casing ID:** 4      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

EK\_31\_BS2\_Fed\_Com\_2H\_\_\_Casing\_Safety\_Factor\_Calculations\_20171130163257.pdf

**Section 4 - Cement**

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
CONDUCTOR	Lead		0	80	200	0	0	0		Redi-mix	n/a

SURFACE	Lead		0	1200	1050	1.66	13.7	1743	100	Extendacem	n/a
SURFACE	Tail		1200	1809	730	1.34	14.8	978.2	100	Halcem	1% CaCl <sub>2</sub>
INTERMEDIATE	Lead		0	4400	1300	1.96	12.5	2548	100	Econocem	3 lb/gal Kcl Seal 0.125 lb/gal Microbonds
INTERMEDIATE	Tail		4400	4929	300	1.33	14.8	399	100	Halcem	0.125 lb/gal Microbonds
PRODUCTION	Lead		4400	9523	580	2.9	11	1450	100	Neocem	3 lb/gal Microbonds
PRODUCTION	Tail		9523	14777	1625	1.25	14.5	2031.25	100	Versacem	0.5% Haloc-324 0.2% Haloc-322 0.2% CER-3 0.1% HR-600 1 lb/gal Seal

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

## **Section 7 - Pressure**

**Anticipated Bottom Hole Pressure:** 4313

**Anticipated Surface Pressure:** 2101.78

**Anticipated Bottom Hole Temperature(F):** 175

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

McElvain\_Energy\_H2S\_Contingency\_Plan\_5\_8\_2017\_2\_20171128104437.pdf

## **Section 8 - Other Information**

**Proposed horizontal/directional/multi-lateral plan submission:**

EK\_31\_BS2\_Fed\_Com\_2H\_dir\_plan\_1\_13Nov17\_kjs\_20171130163656.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Waste\_Minimization\_Plan\_Venting\_and\_Flaring\_\_2\_\_2\_20180511112823.pdf

**Other Variance attachment:**

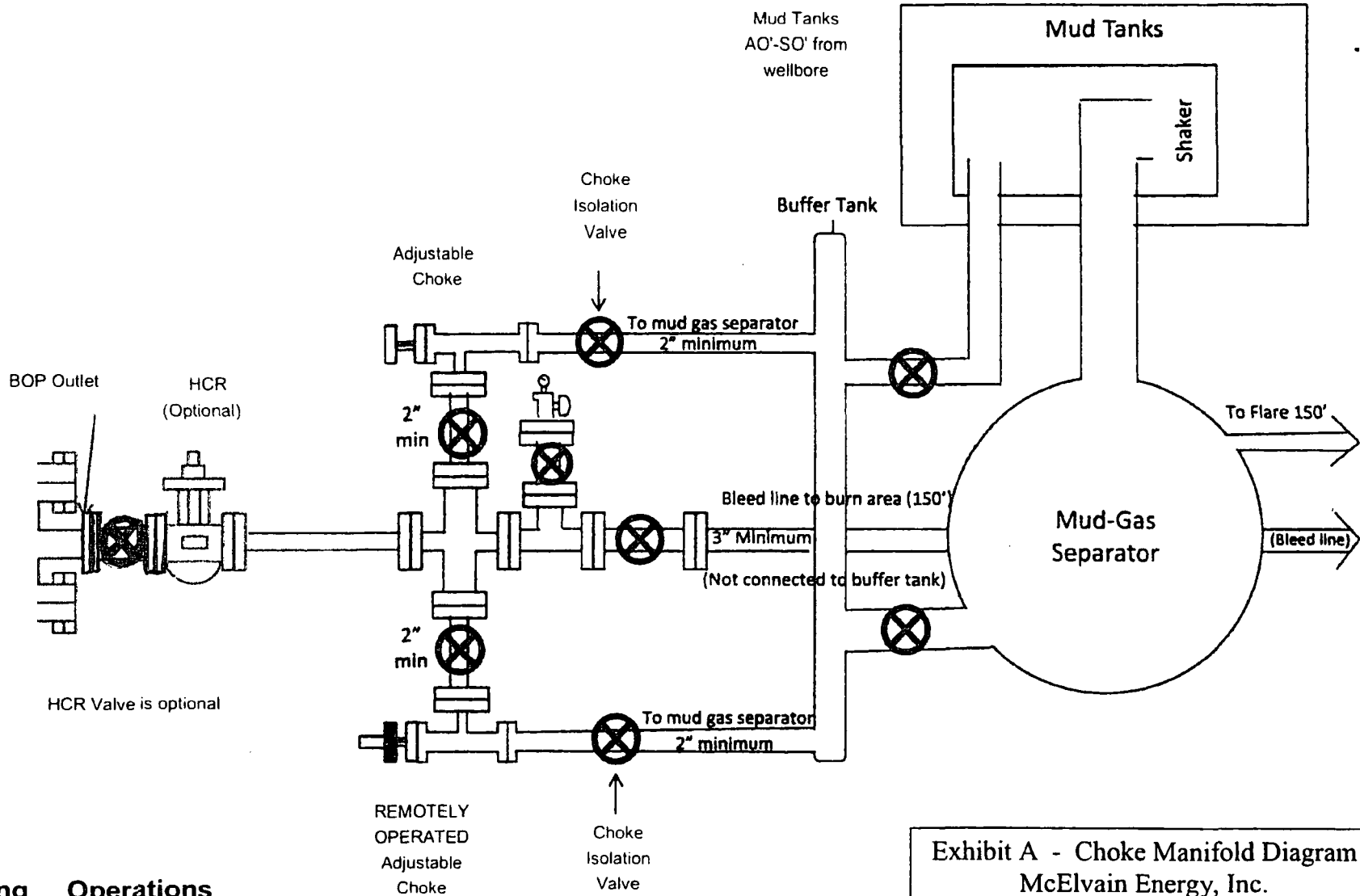


Exhibit A - Choke Manifold Diagram  
McElvain Energy, Inc.

**Drilling Operations  
Choke Manifold**

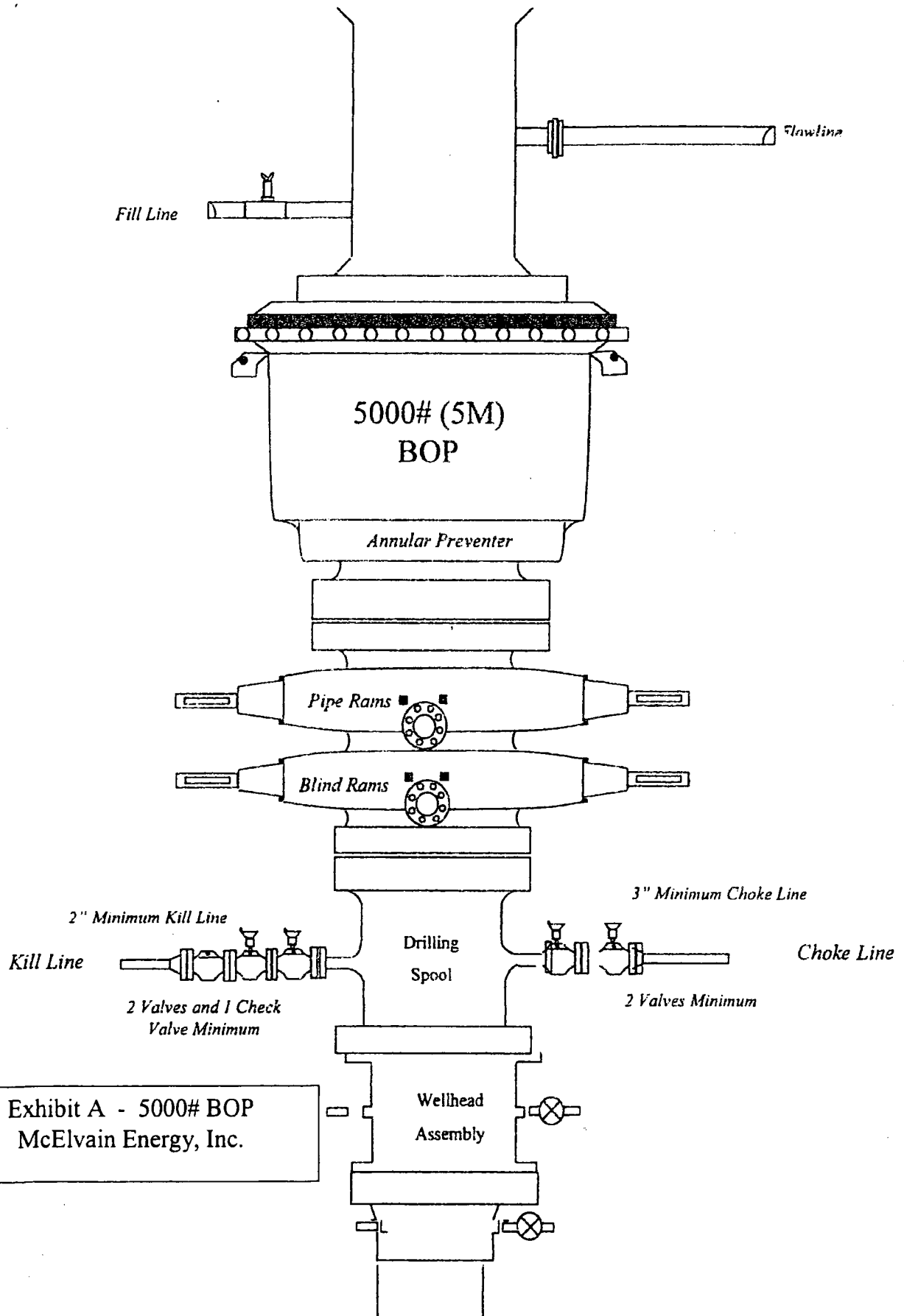
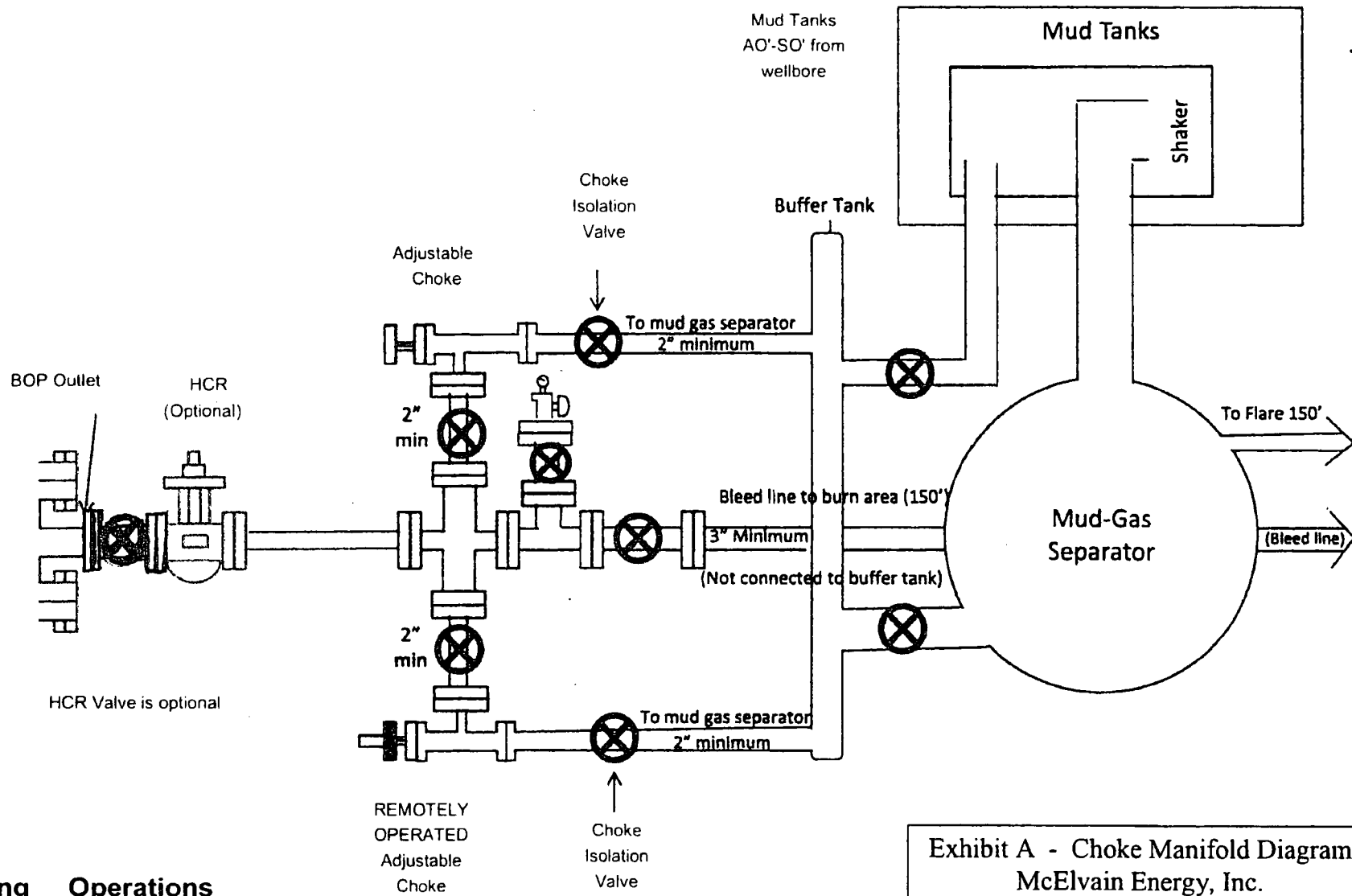


Exhibit A - 5000# BOP  
 McElvain Energy, Inc.

**Drilling Operations  
Choke Manifold**



**Exhibit A - Choke Manifold Diagram  
McElvain Energy, Inc.**



**INTERMEDIATE**

9-5/8" 40# L-80 BTC	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
				Minimum Optimum Maximum	Torque pipe to base of triangle
100%	3,090 psi	5,750 psi	916,000 lbs	Minimum Optimum Maximum	Torque pipe to base of triangle
70%	2,163 psi	4,025 psi	641,200 lbs		

**Design Factors:**

Burst:  $(FG \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$   
 $(14.2 \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$  (gas gradient to surface)  
 3,128 psi, MASP  
 $5,750 / 3,128 = \underline{1.84}$

Collapse:  $(MW \cdot 0.052 \cdot 4,900') - (MW \cdot 0.052 \cdot 4,900' \cdot (1 - \% \text{ evac}))$   
 $(10.0 \cdot 0.052 \cdot 4,900') - (10.0 \cdot 0.052 \cdot 4,900' \cdot 0)$  (100% evacuated)  
 2,548 psi – 0 psi = 2,548 psi  
 $3,090 / 2,548 = \underline{1.21}$

Tension:  $(Wt, \text{ lbs/ft} \cdot 4,900')$  (wt in air)  
 $(40 \text{ lbs/ft} \cdot 4,900')$   
 196,000 lbs  
 $916,000 / 196,000 = \underline{4.67}$

**PRODUCTION**

5-1/2" 17# P-110 BPN	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
				Minimum Optimum Maximum	Torque pipe to base of triangle
100%	7,500 psi	10,640 psi	546,000 lbs	Minimum Optimum Maximum	10,000 11,000
70%	5,250 psi	7,448 psi	382,200 lbs		

**Design Factors:**

**Un-cemented Burst Case:**

$(FG \cdot 0.052 \cdot \text{Max. TVD}') - (0.10 \text{ psi/ft} \cdot \text{Max TVD}')$   
 $(17.3 \cdot 0.052 \cdot 10,119') - (0.10 \text{ psi/ft} \cdot 10,119')$  (gas gradient to surface)  
 9,103 psi – 1,011.9 psi = 8,091 psi  
 $10,640 / 8,091 = \underline{1.32}$

## EK 31 BS2 Federal Com 2H

### Casing Safety Factor Calculations

Design assumptions are as follows:

- For the surface casing, the design is based on a setting depth of 1,700' MD/TVD in 8.7 ppg fluid and a FG of 0.7 psi/ft per BLM Onshore Order #2.
- For the intermediate casing, the design is based on a setting depth of 4,900' MD/4,900' TVD in a 10.0 ppg fluid (saturated brine) and a FG of 0.74 psi/ft per Hubbert & Willis' graphical determination of FG's.
- For the production casing, the design is based on a setting depth of 14,832' MD/10,119' TVD in a 9.4 ppg fluid (cut brine) and a MASP of 9,500 psi during completions.

#### SURFACE

13-3/8" 54.5# J-55 STC	Collapse	Burst	Tension (based on STC joint strength)	Make-Up Torque (ft-lbs)	
100%	1,130 psi	2,730 psi	514,000 lbs	Minimum	5,140
70%	791 psi	1,911 psi	359,800 lbs	Optimum Maximum	

Design Factors:

Burst:  $(FG \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$   
 $(13.5 \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$  (gas gradient to surface)  
 1,023 psi, MASP  
 $2,730 / 1,023 = \underline{2.67}$

Collapse:  $(MW \cdot 0.052 \cdot 1,700') - (MW \cdot 0.052 \cdot 1,700' \cdot (1 - \% \text{ evac}))$   
 $(9.0 \cdot 0.052 \cdot 1,700') - (9.0 \cdot 0.052 \cdot 1,700' \cdot 0)$  (100% evacuated)  
 796 psi – 0 psi = 796 psi  
 $1,130 / 796 = \underline{1.42}$

Tension:  $(Wt, \text{ lbs/ft} \cdot 1,700')$  (wt in air)  
 $(54.5 \text{ lbs/ft} \cdot 1,700')$   
 92,650 lbs  
 $514,000 / 92,650 = \underline{5.55}$

Injection Down Casing Burst Case:

MASP during stimulation = 9,500 psi (10,640 psi \* 90% = 9,576 psi)

Therefore, 10,640 psi/9,500 psi = 1.12

Collapse:  $(MW \cdot 0.052 \cdot \text{Max TVD}') - (MW \cdot 0.052 \cdot \text{Max TVD}' \cdot (1 - \% \text{ evac}))$

$(9.4 \cdot 0.052 \cdot 10,119') - (9.4 \cdot 0.052 \cdot 10,119' \cdot 0)$  (100% evacuated)

4,946 psi – 0 psi = 4,946 psi

•  $7,500/4,946 = \underline{1.52}$

Tension:  $(Wt, \text{ lbs/ft} \cdot \text{Max TVD}') \text{ (wt in air)}$

$(17 \text{ lbs/ft} \cdot 10,119')$

172,023 lbs

$546,000/170,136 = \underline{3.17}$

INTERMEDIATE

9-5/8" 40# L-80 BTC	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
100%	3,090 psi	5,750 psi	916,000 lbs	Minimum	Torque pipe to base of triangle
70%	2,163 psi	4,025 psi	641,200 lbs	Maximum	

Design Factors:

Burst:  $(FG \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$   
 $(14.2 \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$  (gas gradient to surface)  
 3,128 psi, MASP  
 $5,750 / 3,128 = 1.84$

Collapse:  $(MW \cdot 0.052 \cdot 4,900') - (MW \cdot 0.052 \cdot 4,900' \cdot (1 - \% \text{ evac}))$   
 $(10.0 \cdot 0.052 \cdot 4,900') - (10.0 \cdot 0.052 \cdot 4,900' \cdot 0)$  (100% evacuated)  
 2,548 psi – 0 psi = 2,548 psi  
 $3,090 / 2,548 = 1.21$

Tension:  $(Wt, \text{ lbs/ft} \cdot 4,900')$  (wt in air)  
 $(40 \text{ lbs/ft} \cdot 4,900')$   
 196,000 lbs  
 $916,000 / 196,000 = 4.67$

PRODUCTION

5-1/2" 17# P-110 BPN	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
100%	7,500 psi	10,640 psi	546,000 lbs	Optimum Maximum	10,000
70%	5,250 psi	7,448 psi	382,200 lbs		11,000

Design Factors:

Un-cemented Burst Case:

$(FG \cdot 0.052 \cdot \text{Max. TVD}') - (0.10 \text{ psi/ft} \cdot \text{Max TVD}')$   
 $(17.3 \cdot 0.052 \cdot 10,119') - (0.10 \text{ psi/ft} \cdot 10,119')$  (gas gradient to surface)  
 9,103 psi – 1,011.9 psi = 8,091 psi  
 $10,640 / 8,091 = 1.32$

## EK 31 BS2 Federal Com 2H

### Casing Safety Factor Calculations

Design assumptions are as follows:

- For the surface casing, the design is based on a setting depth of 1,700' MD/TVD in 8.7 ppg fluid and a FG of 0.7 psi/ft per BLM Onshore Order #2.
- For the intermediate casing, the design is based on a setting depth of 4,900' MD/4,900' TVD in a 10.0 ppg fluid (saturated brine) and a FG of 0.74 psi/ft per Hubbert & Willis' graphical determination of FG's.
- For the production casing, the design is based on a setting depth of 14,832' MD/10,119' TVD in a 9.4 ppg fluid (cut brine) and a MASP of 9,500 psi during completions.

#### SURFACE

13-3/8" 54.5# J-55 STC	Collapse	Burst	Tension (based on STC joint strength)	Make-Up Torque (ft-lbs)	
100%	1,130 psi	2,730 psi	514,000 lbs	Minimum	5,140
70%	791 psi	1,911 psi	359,800 lbs	Maximum	

Design Factors:

Burst:  $(FG \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$   
 $(13.5 \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$  (gas gradient to surface)  
 1,023 psi, MASP  
 $2,730 / 1,023 = \underline{2.67}$

Collapse:  $(MW \cdot 0.052 \cdot 1,700') - (MW \cdot 0.052 \cdot 1,700' \cdot (1\% \text{ evac}))$   
 $(9.0 \cdot 0.052 \cdot 1,700') - (9.0 \cdot 0.052 \cdot 1,700' \cdot 0)$  (100% evacuated)  
 796 psi – 0 psi = 796 psi  
 $1,130 / 796 = \underline{1.42}$

Tension:  $(Wt, \text{ lbs/ft} \cdot 1,700')$  (wt in air)  
 $(54.5 \text{ lbs/ft} \cdot 1,700')$   
 92,650 lbs  
 $514,000 / 92,650 = \underline{5.55}$

Injection Down Casing Burst Case:

MASP during stimulation = 9,500 psi (10,640 psi \* 90% = 9,576 psi)

Therefore, 10,640 psi/9,500 psi = 1.12

Collapse:  $(MW \cdot 0.052 \cdot \text{Max TVD}') - (MW \cdot 0.052 \cdot \text{Max TVD}' \cdot (1 - \% \text{ evac}))$

$(9.4 \cdot 0.052 \cdot 10,119') - (9.4 \cdot 0.052 \cdot 10,119' \cdot 0)$  (100% evacuated)

4,946 psi – 0 psi = 4,946 psi

7,500/4,946 = 1.52

Tension:  $(Wt, \text{ lbs/ft} \cdot \text{Max TVD}') \text{ (wt in air)}$

$(17 \text{ lbs/ft} \cdot 10,119')$

172,023 lbs

546,000/170,136 = 3.17

INTERMEDIATE

9-5/8" 40# L-80 BTC	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
				Minimum <del>Optimum</del>	Torque pipe to base of triangle Maximum
100%	3,090 psi	5,750 psi	916,000 lbs		
70%	2,163 psi	4,025 psi	641,200 lbs		

Design Factors:

Burst:  $(FG \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$   
 $(14.2 \cdot 0.052 \cdot 4,900') - (0.10 \text{ psi/ft} \cdot 4,900')$  (gas gradient to surface)  
 3,128 psi, MASP  
 $5,750 / 3,128 = \underline{1.84}$

Collapse:  $(MW \cdot 0.052 \cdot 4,900') - (MW \cdot 0.052 \cdot 4,900' \cdot (1 - \% \text{ evac}))$   
 $(10.0 \cdot 0.052 \cdot 4,900') - (10.0 \cdot 0.052 \cdot 4,900' \cdot 0)$  (100% evacuated)  
 2,548 psi – 0 psi = 2,548 psi  
 $3,090 / 2,548 = \underline{1.21}$

Tension:  $(Wt, \text{ lbs/ft} \cdot 4,900')$  (wt in air)  
 $(40 \text{ lbs/ft} \cdot 4,900')$   
 196,000 lbs  
 $916,000 / 196,000 = \underline{4.67}$

PRODUCTION

5-1/2" 17# P-110 BPN	Collapse	Burst	Tension (based on yield strength)	Make-Up Torque (ft-lb)	
				<del>Optimum</del> Maximum	10,000 11,000
100%	7,500 psi	10,640 psi	546,000 lbs		
70%	5,250 psi	7,448 psi	382,200 lbs		

Design Factors:

Un-cemented Burst Case:

$(FG \cdot 0.052 \cdot \text{Max. TVD}') - (0.10 \text{ psi/ft} \cdot \text{Max TVD}')$   
 $(17.3 \cdot 0.052 \cdot 10,119') - (0.10 \text{ psi/ft} \cdot 10,119')$  (gas gradient to surface)  
 9,103 psi – 1,011.9 psi = 8,091 psi  
 $10,640 / 8,091 = \underline{1.32}$

## EK 31 BS2 Federal Com 2H

### Casing Safety Factor Calculations

Design assumptions are as follows:

- For the surface casing, the design is based on a setting depth of 1,700' MD/TVD in 8.7 ppg fluid and a FG of 0.7 psi/ft per BLM Onshore Order #2.
- For the intermediate casing, the design is based on a setting depth of 4,900' MD/4,900' TVD in a 10.0 ppg fluid (saturated brine) and a FG of 0.74 psi/ft per Hubbert & Willis' graphical determination of FG's.
- For the production casing, the design is based on a setting depth of 14,832' MD/10,119' TVD in a 9.4 ppg fluid (cut brine) and a MASP of 9,500 psi during completions.

#### SURFACE

13-3/8" 54.5# J-55 STC	Collapse	Burst	Tension (based on STC joint strength)	Make-Up Torque (ft-lbs)	
100%	1,130 psi	2,730 psi	514,000 lbs	Minimum	5,140
70%	791 psi	1,911 psi	359,800 lbs	Optimum	
				Maximum	

Design Factors:

Burst:  $(FG \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$   
 $(13.5 \cdot 0.052 \cdot 1,700') - (0.10 \text{ psi/ft} \cdot 1,700')$  (gas gradient to surface)  
 1,023 psi, MASP  
 $2,730 / 1,023 = \underline{2.67}$

Collapse:  $(MW \cdot 0.052 \cdot 1,700') - (MW \cdot 0.052 \cdot 1,700' \cdot (1\% \text{ evac}))$   
 $(9.0 \cdot 0.052 \cdot 1,700') - (9.0 \cdot 0.052 \cdot 1,700' \cdot 0)$  (100% evacuated)  
 796 psi – 0 psi = 796 psi  
 $1,130 / 796 = \underline{1.42}$

Tension:  $(Wt, \text{ lbs/ft} \cdot 1,700')$  (wt in air)  
 $(54.5 \text{ lbs/ft} \cdot 1,700')$   
 92,650 lbs  
 $514,000 / 92,650 = \underline{5.55}$



**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

## **Section 12 - Other Information**

**Right of Way needed?** NO

**Use APD as ROW?**

**ROW Type(s):**

### **ROW Applications**

**SUPO Additional Information:** Due to the current workload of the Bureau of Land Management and the fact that there will be NO NEW SURFACE DISTURBANCE at this location, McElvain respectfully requests that the BLM consider waiving the onsite inspection for this additional well on the existing pad. A Class III Archeological Survey was previously conducted by Doralene Sanders of SNMAS Inc. and is on file with the Bureau of Land Management.

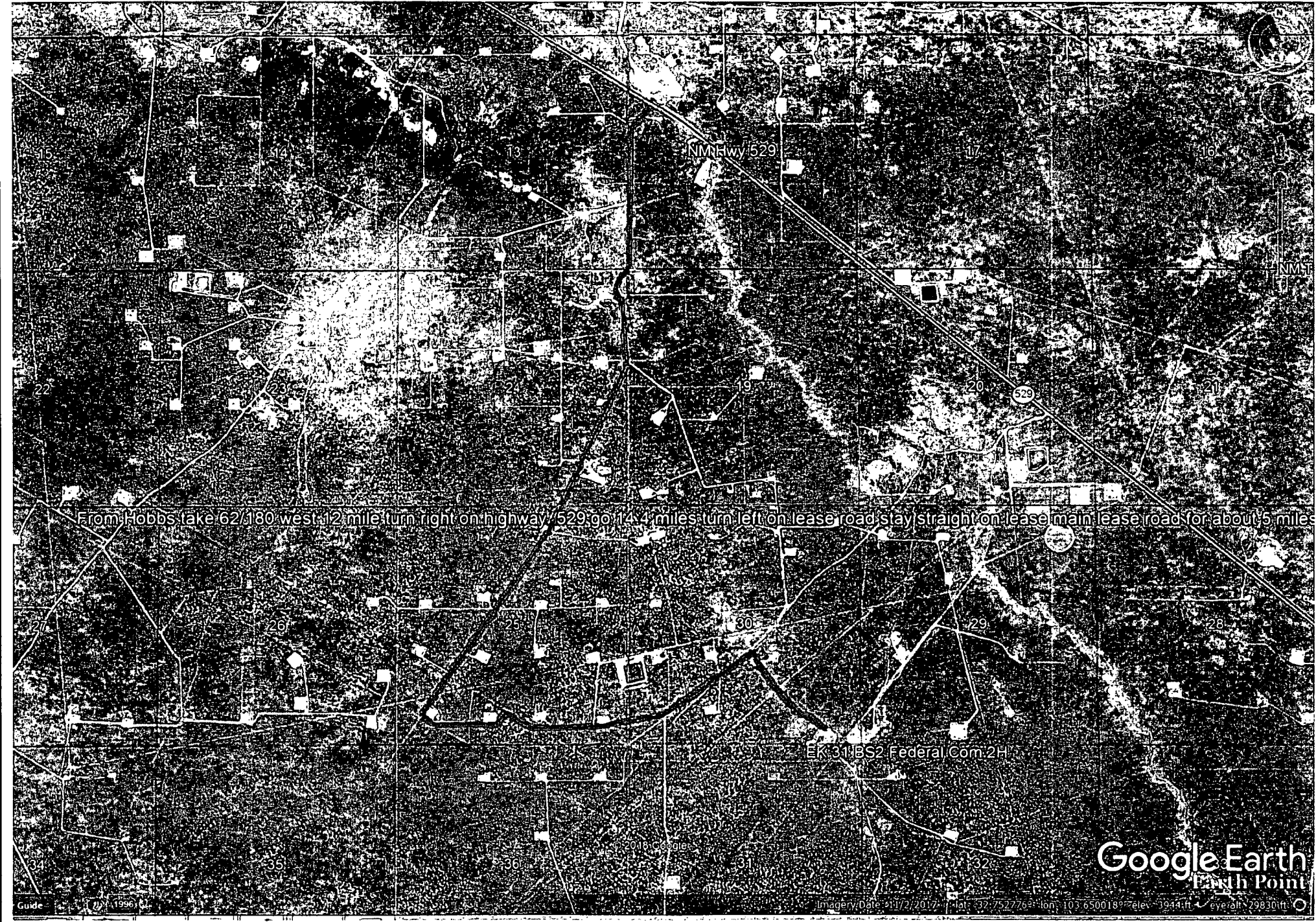
**Use a previously conducted onsite?** YES

**Previous Onsite information:** An onsite inspection was performed on November, 2014 with Trishia Bad Bear.

### **Other SUPO Attachment**

12\_SUP\_Certification\_2017\_20171204150429.pdf

12\_SUPO\_EK\_31\_BS2\_Federal\_Com\_\_2H\_existing\_pad\_20171204154820.pdf



From Hobbs take 62/180 west 12 mile turn right on highway 529 go 14.4 miles turn left on lease road stay straight on lease main lease road for about 5 miles

EK 31 BS2 Federal Com 2H

© 2018 Google

Google Earth  
Earth Point

Imagery Date: 11/2/2017 Lat: 32.752776° Lon: 103.650018° elev: 3944 ft eye alt: 29830 ft

Guide 1996

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

### Seed Summary

**Total pounds/Acre:**

Seed Type	Pounds/Acre
-----------	-------------

**Seed reclamation attachment:**

10. Seed Mixture and Reclamation\_20171204133833.pdf

### Operator Contact/Responsible Official Contact Info

**First Name:** Tony

**Last Name:** Cooper

**Phone:** (303)893-0933

**Email:** tony.cooper@mcelvain.com

**Seedbed prep:** Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted areas. Final seedbed preparation will consist of recontouring and cultivating along the contours to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. The seed mix will be used on all disturbed surfaces including pipelines and road cut/fill slopes.

**Seed BMP:** Seeding the access road, pipeline, or any reclaimed surfaces will occur in early spring or immediately after seedbed preparation when ideal seed germination conditions are expected. An early spring seeding (March 15-May 10) is preferred. Fall seedings, after October 20th may be accomplished if agreed to by the Bureau of Land Management.

**Seed method:** Seed will be drilled on the contour with a seed drill equipped with a depth regulator in order to ensure even depths of planting. Seeding depth will be maintained between ¼ to ½ inch deep. The seed bed should be firmly packed (footprints left in the soil should be less than ½ inch deep). A drill designed specifically for native grass seeding will give the best seeding results. The seed should be planted at a depth of ½ to 1 inch. Precaution must be taken not to plant the seed too deeply in the soil or poor germination will result.

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** Noxious Weeds: Noxious weeds that have been identified during monitoring will be promptly treated and controlled.

**Weed treatment plan attachment:**

**Monitoring plan description:** Weed Monitoring: A weed monitoring and control program will be implemented beginning the first growing season after the location is built and interim and final reclamation.

**Monitoring plan attachment:**

**Success standards:** Success Standards: Reclamation will be considered successful if the following criteria are met: - 80 percent of pre-disturbance cover; at that time a Sundry Notice will be filed requesting final abandonment status for the well.

**Pit closure description:** N/A - There will be no pit since this well will be drilled utilizing a closed loop system.

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Topsoil redistribution:** Only 50% of the topsoil will be placed back on the reclaimed areas. Topsoil will be re-spread and re-vegetated over the entire disturbed area not needed for all-weather operations including road cuts/fills. Any remaining topsoil not utilized during interim reclamation will be stockpiled in a low pile. The topsoil storage stockpile will be not exceed 2' in height for aesthetic and seeding purposes. It will be stored for final reclamation near the perimeter of the pad. Re-vegetation will be accomplished by planting mixed grasses as specified by the Bureau of Land Management. For the protection of the topsoil, interim reclamation will not occur until all proposed wells have been drilled from this pad.

**Soil treatment:** No soil treatments are anticipated at this time.

**Existing Vegetation at the well pad:** Vegetation at the wellsite consists of native grasses and shrubs.

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** Native grasses and shrubs

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:** N/A

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** N/A

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

Operator Name: MCELVAIN ENERGY INCORPORATED

Well Name: EK 31 BS2 FEDERAL COM

Well Number: 2H

## Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

## Section 9 - Well Site Layout

Well Site Layout Diagram:

09.\_Typical\_Closed\_Loop\_Rig\_Layout\_20171204131057.PDF

09.\_Well\_pad\_Diagrams\_EK\_31\_BS2\_FEDERAL\_COM\_2H\_33383\_20171204131058.pdf

09.\_Figure\_1\_\_\_Fencing\_20171204131059.pdf

Comments: A drawing of the well site is attached. The location was previously constructed, no additional construction will be necessary at this time.

## Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance Multiple Well Pad Name: EK 31 BS2 FEDERAL COM

Multiple Well Pad Number: 1H

Recontouring attachment:

10.\_Reclamation\_Diagram\_31\_2H\_added\_\_\_Copy\_20180515103238.pdf

Drainage/Erosion control construction: Best efforts will be made to re-contour and reestablish pre-disturbance drainage systems and flow of storm water.

Drainage/Erosion control reclamation: The location is relatively flat and additional erosion control features are not anticipated. However, if needed, berms, or straw waddles could be incorporated around the perimeter of the pad.

Well pad proposed disturbance (acres): 0	Well pad interim reclamation (acres):	Well pad long term disturbance (acres):
Road proposed disturbance (acres): 0	Road interim reclamation (acres):	Road long term disturbance (acres):
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 0	Pipeline interim reclamation (acres):	Pipeline long term disturbance (acres):
Other proposed disturbance (acres): 0	Other interim reclamation (acres):	Other long term disturbance (acres):
Total proposed disturbance: 0	Total interim reclamation:	Total long term disturbance:

Disturbance Comments: All areas not needed for production equipment and future workover operations will be reclaimed to the original contour.

Reconstruction method: The southern 0.6 acres of this well pad will be reclaimed within 6 months after drilling and completion operations are completed. After interim reclamation the remaining well pad will be approximately 360' x 360' or 2.8 acres in size. This is the minimum size the pad can be for McElvain to safely carry out production operations on the 4 horizontal oil wells on the pad. The pad is expected to be producing a combined 1200 bbls. per day of crude oil and 1800 bbls of produced water. We will need this operational area to safely direct truck traffic, well service units, and other production related equipment on all the well pad. Rehabilitation of unused, previously disturbed areas will consist of back filling, back sloping and contouring all downhill slopes. These areas will be re-seeded.

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Section 7 - Methods for Handling Waste**

**Waste type:** DRILLING

**Waste content description:** Water Based Drilling Mud - See Drilling Waste Disposal Attachment (covering all drilling wastes) attached.

**Amount of waste:** 18000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel tanks (closed loop) on location

**Safe containmant attachment:**

07.\_Drilling\_Waste\_Disposal\_Information\_Sheet\_20171204152053.pdf

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** R360 Halfway Facility 6601 Hobbs Highway Carlsbad, NM 88220

**Reserve Pit**

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

**Cuttings Area**

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** NO

**Description of cuttings location** Cuttings will be stored in steel tanks on location and hauled to a commercial disposal facility.

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Cuttings area depth (ft.)** **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Water source and transportation map:**

05.\_Water\_Source\_Map\_20171204130641.pdf

**Water source comments:** Fresh water used for drilling and cementing operations will be produced from a McElvain owned water well, McElvain 29 Water Well, NMOSE CP-1563 located in the NW/4 of Section 29, T18S - R34E. The Caviness fresh water station (Permit No. CP-00072) located in the NW SW Sec. 10, T18S – R33E will be used as a secondary source of fresh water, in the event that there are problems with the McElvain Water Well. The Seeley Recycle Containment Facility Proposed Water (Sec. 20, T18S – R33E) will be used for fracking the wells. (Permit No. NM-136166.

**New water well?** NO

### **New Water Well Info**

**Well latitude:**

**Well Longitude:**

**Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):**

**Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):**

**Well casing type:**

**Well casing outside diameter (in.):**

**Well casing inside diameter (in.):**

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

### **Section 6 - Construction Materials**

**Construction Materials description:** If possible, construction material will be obtained from the leveling of the drill site. Additional caliche (if necessary) will either be purchased locally from Kenneth Smith Ranch or McElvain may have its own source from the excavation of a proposed produced water recycle containment facility in section 25 18S 33E. If additional material is required, it will be obtained from a local source and transported over access roads shown on Attachment A.

**Construction Materials source location attachment:**



**Operator Name:** MCELVAIN ENERGY INCORPORATED

**Well Name:** EK 31 BS2 FEDERAL COM

**Well Number:** 2H

**Existing Wells description:**

### Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** Refer to the Production and Reclamation Diagram attached for the layout of production facilities. All facilities are existing with the exception of an additional separator to be installed. Production facilities will be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location. The original well pad occupies and area of 3.7 acres. Approximately 0.6 acres will be reclaimed.

**Production Facilities map:**

04. Facility Diagram\_31\_2H\_added\_20180515103155.pdf

### Section 5 - Location and Types of Water Supply

#### Water Source Table

**Water source use type:** DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, SURFACE CASING  
**Describe type:**

**Water source type:** GW WELL

**Source latitude:**

**Source longitude:**

**Source datum:**

**Water source permit type:** WATER RIGHT,WATER WELL

**Source land ownership:** FEDERAL

**Water source transport method:** PIPELINE,TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 30000

**Source volume (acre-feet):** 3.866793

**Source volume (gal):** 1260000

**Water source use type:** DUST CONTROL, STIMULATION

**Water source type:** RECYCLED

**Describe type:**

**Source latitude:**

**Source longitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT,WATER WELL

**Source land ownership:** PRIVATE

**Water source transport method:** PIPELINE

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 250000

**Source volume (acre-feet):** 32.223274

**Source volume (gal):** 10500000



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# SUPO Data Report

06/12/2018

APD ID: 10400024964

Submission Date: 12/04/2017

Operator Name: MCELVAIN ENERGY INCORPORATED

Well Name: EK 31 BS2 FEDERAL COM

Well Number: 2H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes

[Show Final Text](#)

## Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

01. \_Access\_Road\_Map\_and\_Directions\_\_EK31BS22H\_AccessRoad\_20180515104050.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? YES

### ROW ID(s)

ID: NMNM-135054

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

## Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

## Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

03. \_Wells\_within\_a\_1\_mile\_radius\_20171204150921.pdf

## SEED MIXTURE AND RECLAMATION

### McElvain Energy Inc.

Operator shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

<i>Species</i>	<i>Lbs. Pure Live Seed (PLS)* /acre</i>
Plains Bristlegrass	5
Sand bluestem	5
Little Bluestem	3
Big Bluestem	6
Plains Coreopsis	2
Sand Dropseed	1
<b>TOTAL</b>	<b>22</b>

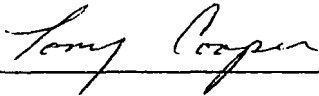
\*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed.

Seed bed Preparation: Initial seedbed preparation will consist of ripping all compacted areas. Final seedbed preparation will consist of recontouring and cultivating along the contours to a depth of 4 to 6 inches. The specified seed mix will be used on all disturbed surfaces including pipelines and road cut/fill slopes.

McElvain Energy, Inc.  
EK 31 BS2 Federal Com 2H  
P 30 18S 34E  
Lea County, NM

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge, of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 15th \_\_\_ day of \_\_\_ November \_\_\_, 2017.

A handwritten signature in cursive script that reads "Tony Cooper". The signature is written in black ink and is positioned above a solid horizontal line.

Tony Cooper  
McElvain Energy Inc.  
1050 17<sup>th</sup> Street Suite 2500  
Denver Colorado 80265  
303-962-6489  
tony.cooper@mcelvain.com

### **Section 3 - Unlined Pits**

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

### **Section 4 - Injection**

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## **Section 5 - Surface Discharge**

**Would you like to utilize Surface Discharge PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## **Section 6 - Other**

**Would you like to utilize Other PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



• U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

**Bond Information**

**Federal/Indian APD: FED**

**BLM Bond number: COB000010**

**BIA Bond number:**

**Do you have a reclamation bond? NO**

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**



## Section 1 - General

Would you like to address long-term produced water disposal? NO

## Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bb/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:



**FEDERAL STIPULATIONS**

Any timing limitation stipulations which apply to this lease will be included as a Condition of Approval by the Bureau of Land Management.



U. S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

06/12/2018

APD ID: 10400024964

Submission Date: 12/04/2017

Operator Name: MCELVAIN ENERGY INCORPORATED

Well Name: EK 31 BS2 FEDERAL COM

Well Number: 2H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3894	1671	1671		NONE	No
2	TOP SALT	2163	1731	1731		NONE	No
3	YATES	673	3221	3221		USEABLE WATER,NATURAL GAS,OIL	No
4	SEVEN RIVERS	173	3721	3726		NONE	No
5	QUEEN	-527	4421	4440		USEABLE WATER,NATURAL GAS,OIL	No
6	PENROSE	-788	4682	4706		USEABLE WATER,NATURAL GAS,OIL	No
7	SAN ANDRES	-1353	5247	5283		USEABLE WATER,NATURAL GAS,OIL	No
8	DELAWARE	-1578	5472	5512		USEABLE WATER,NATURAL GAS,OIL	No
9	CHERRY CANYON	-1588	5482	5523		USEABLE WATER,NATURAL GAS,OIL	No
10	CHERRY CANYON	-1978	5872	5921		USEABLE WATER,NATURAL GAS,OIL	No
11	BONE SPRING	-3749	7643	7728		USEABLE WATER,NATURAL GAS,OIL	No
12	BONE SPRING 1ST	-5049	8943	9054		USEABLE WATER,NATURAL GAS,OIL	No
13	BONE SPRING 2ND	-5599	9493	9607		USEABLE WATER,NATURAL GAS,OIL	Yes

## Section 2 - Blowout Prevention