

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

1097409

Form ACO-4 Form must be typed March 2009

APPLICATION FOR COMMINGLING OF Commingling ID # _ PRODUCTION (K.A.R. 82-3-123) OR FLUIDS (K.A.R. 82-3-123a)

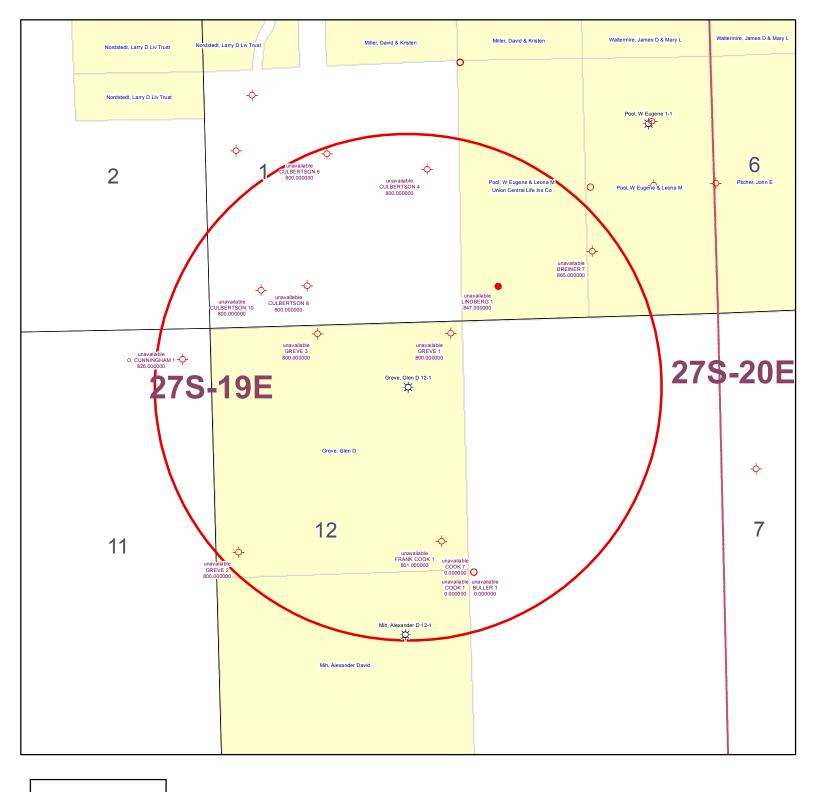
OPERAT	OR: License #	API No. 15		
Name:_		Spot Description:		
Address	1:		Sec Twp	S. R East West
Address	2:		Feet from No	orth / South Line of Section
City:	State: Zip:+		Feet from Ea	st / West Line of Section
Contact	Person:	County:		
Phone:	()	Lease Name:	Wel	l #:
1.	Name and upper and lower limit of each production interval to	be commingled:		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
	Formation:	(Perfs): _		
2.	Estimated amount of fluid production to be commingled from		MOEDD	DWDD
	Formation:			BWPD:
	Formation:			BWPD:
	Formation:		-	BWPD:
	Formation:			BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
3.	Plat map showing the location of the subject well, all other we the subject well, and for each well the names and addresses		•	ses within a 1/2 mile radius of
4.	Signed certificate showing service of the application and affid	lavit of publication as required	in K.A.R. 82-3-135a.	
For Con	nmingling of PRODUCTION ONLY, include the following:			
<u> </u>	Wireline log of subject well. Previously Filed with ACO-1:	Yes No		
6.	Complete Form ACO-1 (Well Completion form) for the subject	t well.		
For Con	nmingling of FLUIDS ONLY, include the following:			
7.	Well construction diagram of subject well.			
8.	Any available water chemistry data demonstrating the compa	tibility of the fluids to be comm	ningled.	
current ir mingling	/IT: I am the affiant and hereby certify that to the best of mynformation, knowledge and personal belief, this request for comistrue and proper and I have no information or knowledge, which istent with the information supplied in this application.	Su	bmitted Electron	ically
KCC	C Office Use Only	Protests mav be filed bv anv	party having a valid interesi	t in the application. Protests must be
	nied Approved			e filed wihin 15 days of publication of

Date: _

Denied Approved

15-Day Periods Ends:

Approved By:



KGS STATUS

- → DA/PA
- EOR
- **⇔** GAS
- △ INJ/SWD
- OIL
- **♦** OIL/GAS
- OTHER

Greve, Glen D 12-1 12-27S-19E 1" = 1,000'

-	Α	В	С	D	Е	F	G	Н	1		K
1	Produced Fluids #	В	1	2	3	4	5	11	•	<u> </u>	
	Parameters	Units	Input	Input	Input	Input	Input		Click he	re	Click
3	Select the brines	Select fluid		Ī		V	Ī	Mixed brine:	to run SS	-	
4	Sample ID	by checking						Cell H28 is	to ruii oc	•	Click
5	Date	the box(es),	3/19/2012	3/4/2012	3/14/2012	1/20/2012	1/20/2012	STP calc. pH.	————		
6	Operator	Row 3	PostRock	PostRock	PostRock	PostRock	PostRock	Cells H35-38			Click
7	Well Name		Ward Feed	Ward Feed	Clinesmith	Clinesmith	Clinesmith	are used in	Goal Seek	SSP	
8	Location		#34-1	#4-1	#5-4	#1	#2	mixed brines	0.00		Click
9	Field		CBM	CBM	Bartles	Bartles	Bartles	calculations.			
10	Na ⁺	(mg/l)*	19,433.00	27,381.00	26,534.00	25689.00	24220.00	24654.20	Initial(BH)	Final(WH)	SI/SR
11	K ⁺ (if not known =0)	(mg/l)						0.00	Saturation Index	values	(Final-Initial)
	Mg ²⁺	(mg/l)	1,096.00	872.00	1,200.00	953.00	858.00	995.91		lcite	
	Ca ²⁺	(mg/l)	1,836.00	2,452.00	2,044.00	1920.00	1948.00	2040.23	-0.73	-0.60	0.13
	Sr ²⁺		1,050.00	2,432.00	2,044.00	1720.00	1740.00				0.13
	Ba ²⁺	(mg/l)						0.00	Da	rite	
.,		(mg/l)						0.00			
	Fe ²⁺	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn ²⁺	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb ²⁺	(mg/l)						0.00	Gyp	sum	
19	Cl	(mg/l)	36,299.00	48,965.00	47,874.00	45632.00	43147.00	44388.44	-3.19	-3.18	0.00
20	SO ₄ ²⁻	(mg/l)	1.00	1.00	8.00	1.00	1.00	2.40	Hemil	ıydrate	
21	F.	(mg/l)						0.00	-3.96	-3.90	0.06
	Br'	(mg/l)						0.00		ydrite	
	SiO2	(mg/l) SiO2						0.00	-3.47	-3.36	0.12
_	HCO3 Alkalinity**	(mg/l as HCO3)	190.00	234.00	259.00	268.00	254.00	241.03		estite	
	CO3 Alkalinity	(mg/l as CO3)	170.00	434.00	237,00	200.00	234.00	241.03	Cen		
_	Carboxylic acids**	(mg/l)						0.00	Inor 6	Sulfide	
27	Ammonia	(mg/L) NH3						0.00	-0.16	-0.22	-0.06
											-0.00
	Borate	(mg/L) H3BO3						0.00	Zinc	Sulfide	
	TDS (Measured)	(mg/l)	4.040	4.0=4				72781	~		
	Calc. Density (STP) CO ₂ Gas Analysis	(g/ml)	1.038 19.97	1.051 18.76	1.050 22.41	1.048 35.53	1.045	1.047	Calcium	fluoride	
	- ,	(%)		0.0292			33.79	26.16	I C.	-l	
	H ₂ S Gas Analysis*** Total H2Saq	(%)	0.0289	1.00	0.0296	0.0306	0.0151 0.50	0.0269	-0.74	rbonate -0.51	0.23
_	_	(mgH2S/l)	1.00 5.67	5.76	1.00 5.72	1.00 5.54	5.55	5.63		eeded (mg/L)	0.23
34	pH, measured (STP)	pH 0-CO2%+Alk,	5.07	5./6	5.72	5.54	5.55	5.03	Calcite	NTMP	
	Choose one option								Calcite	NIMI	
35	to calculate SI?	2-CO2%+pH	0	0	0	0	0				
36	Gas/day(thousand cf/day)	(Mcf/D)						0	0.00	0.00	
	Oil/Day	(B/D)	0	0	1	1	1	4	Barite	BHPMP	
	Water/Day	(B/D)	100	100	100	100	100	500	0.00	0.00	
	For mixed brines, enter val			mag in Calle (H	(40 H42)						
-	Initial T			` .		44.0	40.0	(Enter H40-H43)		Н	
		(F)	66.0	71.0	70.0	41.0	49.0	60.0	5.69	5.60	1
	Final T	(F) (F)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (5.60 CentiPoise)	
42	Final T Initial P	(F) (F) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196	5.60 CentiPoise) 0.826	
42 43	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0	71.0 71.0	70.0 70.0	41.0	49.0	60.0 89.0	5.69 Viscosity (1.196 Heat Capaci	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44	Final T Initial P Final P Use TP on Calcite sheet?	(F) (F) (psia) (psia) I-Yes;0-No	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959	
42 43 44 45	Final T Initial P Final P	(F) (F) (psia) (psia)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0	5.69 Viscosity (1.196 Heat Capaci 0.955	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C)	
42 43 44 45 46	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav.	(F) (F) (psia) (psia) I-Yes;0-No API grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor no	5.60 CentiPoise) 0.826 ty (cal/ml/ ⁰ C) 0.959 eeded (mg/L)	
42 43 44 45 46 47 48	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav.	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00	
42 43 44 45 46 47 48 49 50	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG//Day Conc. Multiplier H* (Strong acid) *	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) †	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP:	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH' (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/l) (pH)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP)	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated SCations= EAnions=	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I)	66.0 66.0 25.0	71.0 71.0 25.0	70.0 70.0 25.0	41.0 25.0	49.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= ECations= Calc TDS=	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH* (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textit{\Sigma}\$ (STP) Exhions= \$\textit{\Sigma}\$ (STD)= Inhibitor Selection	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time	(F) (F) (Psia) (psia) (1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I)	66.0 66.0 25.0 25.0	71.0 71.0 25.0 25.0	70.0 70.0 25.0 25.0	41.0 25.0 25.0 Unit Converter	49.0 25.0 25.0	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 60 61 62 63	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated 2Cations= £Anions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you?	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	# 1 2 3	Inhibitor NTMP BHPMP PAA	Unit Converter From Unit C m³	49.0 25.0 25.0 25.0 (From metric Value 80 100	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\textstyle \text{Calcite}\$ acid \$\text{Lacite}\$ acid \$\text	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0	71.0 71.0 25.0 25.0 4 1 1 2	70.0 70.0 25.0 25.0 25.0 Inhibitor NTMP BHPMP	41.0 25.0 25.0 Unit Converter From Unit	49.0 25.0 25.0 25.0 (From metric Value 80	60.0 89.0 25.0 120.0 30.00 0.60 0	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Eanions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is:	(F) (F) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120	66.0 66.0 25.0 25.0 0 0 0	71.0 71.0 25.0 25.0 1 1 1 2 3 4	Inhibitor NTMP BHPMP PAA DTPMP	Unit Converter From Unit °C m³ m³ MPa	49.0 25.0 25.0 25.0 (From metric Value 80 100 1,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH (Strong base) * Quality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= ZAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor # is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit C m MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) † OH (Strong base) † Quality Control Checks at H ₂ S Gas Total H ₂ Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed,	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/l) as HCO3 (equiv./I) (equiv./I) (mg/l) Input 120 1 4 1 50	0 0 0 Unit min 1-Yes;0-No #	## 1 2 3 4 4 5 6 6 7	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA HEDP	Unit Converte From Unit C m³ m³ MPa Bar Torr	49.0 25.0 25.0 25.0 25.0 Value 80 100 1,000 496 10,000	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit °F ft³ bbl(42 US gal) psia psia psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194 193	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	
42 44 45 46 47 48 49 50 51 52 53 54 55 56 60 61 62 63 64 65 66 67 68 69	Final T Initial P Final P Use TP on Calcite sheet? API Oil Grav. Gas Sp.Grav. MeOH/Day MEG/Day Conc. Multiplier H* (Strong acid) * OH* (Strong base) * OH* (Strong base) * Ouality Control Checks at H ₂ S Gas Total H2Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated ECations= EAnions= Calc TDS= Inhibitor Selection Protection Time Have ScaleSoftPitzer pick inhibitor for you? If No, inhibitor # is: If you select Mixed, 1st inhibitor is: % of 1st inhibitor is:	(F) (F) (Psia) (psia) (psia) 1-Yes;0-No API grav. Sp.Grav. (B/D) (N) (N) STP: (%) (mgH2S/I) (pH) (%) (mg/I) as HCO3 (equiv./I) (equiv./I) (mg/I) Input 120 1 4	0 0 0 0 Unit min 1-Yes;0-No # # %	## 1 2 3 4 5 6	Inhibitor NTMP BHPMP PAA DTPMP PPCA SPA	Unit Converter From Unit C m MPa Bar	49.0 25.0 25.0 25.0 	60.0 89.0 25.0 120.0 30.00 0.60 0 0 To Unit "F ft ³ bbl(42 US gal) psia	5.69 Viscosity (1.196 Heat Capaci 0.955 Inhibitor ne Gypsum 0.00 Anhydrite 0.00 Value 176 3,531 629 145,074 7,194	5.60 CentiPoise) 0.826 ty (cal/ml/°C) 0.959 ceded (mg/L) HDTMP 0.00 HDTMP	

Saturation Index Calculations

Champion Technologies, Inc. (Based on the Tomson-Oddo Model)

Brine 1: Ward Feed Yard 34-1
Brine 2: Ward Feed Yard 4-1
Brine 3: Clinesmith 5-4
Brine 4: Clinesmith 1
Brine 5: Clinesmith 2

			Ratio			
	20%	20%	20%	20%	20	
Component (mg/L)	Brine 1	Brine 2	Brine 3	Brine 4	Brine 5	Mixed Brine
Calcium	1836	2452	2044	1920	1948	1952
Magnesium	1096	872	1200	953	858	865
Barium	0	0	0	0	0	0
Strontium	0	0	0	0	0	0
Bicarbonate	190	234	259	268	254	253
Sulfate	1	1	8	1	1	1
Chloride	36299	48965	47874	45632	43147	43206
CO ₂ in Brine	246	220	264	422	405	401
Ionic Strength	1.12	1.48	1.46	1.38	1.31	1.31
Temperature (°F)	89	89	89	89	89	89
Pressure (psia)	50	50	120	120	120	119

Saturation Index

Calcite	-1.71	-1.41	-1.48	-1.68	-1.69	-1.69
Gypsum	-3.71	-3.64	-2.82	-3.73	-3.72	-3.69
Hemihydrate	-3.70	-3.65	-2.83	-3.74	-3.71	-3.69
Anhydrite	-3.89	-3.79	-2.97	-3.89	-3.88	-3.85
Barite	N/A	N/A	N/A	N/A	N/A	N/A
Celestite	N/A	N/A	N/A	N/A	N/A	N/A

PTB

Calcite	N/A	N/A	N/A	N/A	N/A	N/A
Gypsum	N/A	N/A	N/A	N/A	N/A	N/A
Hemihydrate	N/A	N/A	N/A	N/A	N/A	N/A
Anhydrite	N/A	N/A	N/A	N/A	N/A	N/A
Barite	N/A	N/A	N/A	N/A	N/A	N/A
Celestite	N/A	N/A	N/A	N/A	N/A	N/A

CONFIDENTIAL KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION WELL COMPLETION

ORIGINAL Form ACO-1
September 1999
Form Must Be Typed

WICHITA, KS

WELL HISTORY - DESCRIPTION OF WELL & LEASE

County Nonze County Nonze No. County Nonze County Nonze No. County Nonze County Nonze No. County No	Operator: License # 33344	API No. 15 - 133-26822-0000
Address: 211 W. 14th Street City/Stata/Dp. Charute, KS 66720 Purchaser, Bluestem Pipeline, LLC State from S	Name: Quest Cherokee, LLC	
Second Control Contr		
Purchaser: Bluestem Pipeline, LLC Operator Contact Person: Jennifer R. Ammann Prone: (620 431.9500 1431.9500 Feet from E Circle one) Line of Section Corner: (circle one) N E SE SW License: 33837 Well if: 12-1 Field Name: TXD License: 33837 Well if: 12-1 Field Name: Cherokee Basin CBM Well if:		660
Postator Contact Person. Jamiler R. Amman Footages Calculated from Nearest Outside Section Corner: (color one) NE SE (W) SW Contractor: Name; TXD Well #; 12-1 New Well Re-Entry Workover New Yell Re-Entry Well Re-	Burghager, Bluestem Pipeline, LLC	
Contractor: Name: TXD Licenses: 39387 Welliste Geologist: Ken Recoy Designate Type of Completion:	Operator Contact Person: Jennifer R. Ammann	Y
Field Name: Cherokee Basin CBM	Phone: (620) 431-9500	
Field Name: Cherokee Basin CBM	Contractor: Name: TXD	Lease Name: Greve, Glen D. Well #: 12-1
Wellsite Geologist: Ken Recoy Designate Type of Completion: New Well		Field Name: Cherokee Basin CBM
Elevation: Ground: 991 Kelly Bushing: 1/2		
New Well Re-Entry Workover Oil SWD SIOW Temp. Abd. Gas ENHR SIGW Multiple Stage Cemerting Collar Used? Test Amount of Surface Pipe Set and Cemented at 21.5 Feet Multiple Stage Cemerting Collar Used? Test Pipe Set and Cemented at 21.5 Feet Multiple Stage Cemerting Collar Used? Set Pipe Set and Cemented at 21.5 Feet Multiple Stage Cemerting Collar Used? Set Pipe Set If Alternate II completion, cement circulated from 1025.20 Feet If Alternate III completion, cement circulated from 1025.20 Feet If Alternate III completion, cement circulated from 1025.20 Feet depth to aurface wy 130 sx cmt. Diginal Comp. Date: Original Total Depth: Conv. to Enhr/SWD Depending Re-pert. Conv. to Enhr/SWD Depending Re-pert. Conv. to Enhr/SWD Depending Pipe Back Total Depth Deveatering method used. Location of fluid disposal if hauled offsite: Operator Name: Lease Name: License No.: Operator Name: Lease Name: License No.: Operator Name: Lease Name: License No.: Operator Name: County: Docket No.: Docket No.: Operator Name: Lease Name: License No.: Operato		Elevation: Ground: 991 Kelly Bushing: n/a
Multiple Stage Cementing Collar Used? Yes No		Total Depth: 1038 Plug Back Total Depth: 1025.2
Multiple Stage Cementing Collar Used? Yes No	Oil SWD SIOW Temp. Abd.	Amount of Surface Pipe Set and Cemented at 21.5 Feet
If yes, show depth set		
If Alternate II completion, cement circulated from 1025.20 feet depth to surface wy 130 scrott. Well Name: Driginal Comp. Date: Original Total Depth: Drilling Fluid Management Plan Alf Scrott Plan Surface Plan S		
Seed depth to Surface W 130 Sx cmt.	If Workover/Re-entry: Old Well Info as follows:	
Driginal Comp. Date:	Operator:	1
Despening Re-perf. Com. to Enhr./SWD Plug Back Plug Back Total Depth Docket No. Dual Completion Docket No. Other (SWD or Enhr.?) Docket No. Other (SWD or Enhr.?) Docket No. Dual Completion Docket No. Other (SWD or Enhr.?) Docket No. INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichitat, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. Ill requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements experien are complete and correct to the best of my knowledge. KCC Office Use ONLY Letter of Confidentiality Received Wireline Log Raceived Geologist Report Received Wireline Log Raceived	Well Name:	
Deepening Re-perf. Conv. to Enhr/SWD Plug Back Plug Back Depth Plug Back Plug Back Total Depth Dewatering method used Location of fluid disposal if hauled offsite: Dual Completion Docket No.	Original Comp. Date: Original Total Depth:	Drilling Fluid Management Plan ALL ALL 37
Plug Back		, ,
Docket No.	Plug Back Total Depth	•
Operator Name: Completion		
Other (SWD or Enhr.?) Docket No	Dual Completion Docket No.	Location of fluid disposal if hauled offsite:
Spud Date or Date Reached TD Date Reached TD Completion Date or Recompletion Date or Recompletion Date or Recompletion Date County: Docket No.: Docket	Other (SWD or Enhr.?) Docket No	Operator Name:
Date Reached TD Date Reached TD Completion Date or Recompletion Date County: Docket No.:	E/7/07 E/0/07	Lease Name: License No.:
INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements berein are complete and correct to the best of my knowledge. KCC Office Use ONLY Letter of Confidentiality Received Letter of Confi		Quarter Sec Twp S. R East West
Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements erein are complete and correct to the best of my knowledge. KCC Office Use ONLY Letter of Confidentiality Received Wireline Log Received Geologist Report Received Wireline Log Received UIC Distribution ALIG 2 8 2007		County: Docket No.:
Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements erein are complete and correct to the best of my knowledge. KCC Office Use ONLY Letter of Confidentiality Received Wireline Log Received Geologist Report Received Wireline Log Received UIC Distribution ALIG 2 8 2007		!
Signature: A Commission Expires: 8-4-2010 KCC Office Use ONLY KCC Office Use ONLY	Kansas 67202, within 120 days of the spud date, recompletion, workover Information of side two of this form will be held confidential for a period of 12 107 for confidentiality in excess of 12 months). One copy of all wireline logs a TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells.	r or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. 2 months if requested in writing and submitted with the form (see rule 82-3-and geologist well report shall be attached with this form. ALL CEMENTING Submit CP-111 form with all temporarily abandoned wells.
Letter of Confidentiality Received Wireline Log Received Geologist Report Received Letter of Confidentiality Received Wireline Log Received RECEIVED Letter of Confidentiality Received Wireline Log Received NANSAS CORPORATION COMM Notary Public: Section 1	All requirements of the statutes, rules and regulations promulgated to regulat herein are complete and correct to the best of my knowledge.	e the oil and gas industry have been fully complied with and the statements
Letter of Confidentiality Received Wireline Log Received Geologist Report Received Letter of Confidentiality Received Wireline Log Received RECEIVED Letter of Confidentiality Received Wireline Log Received NANSAS CORPORATION COMM Notary Public: Section 1	Signature: Quil 2 A	KCC Office Use ONLY
Letter of Confidentiality Received Subscribed and sworn to before me this 28 day of Cugust OOT Subscribed and sworn to before me this 28 day of Cugust Wireline Log Received Geologist Report Received Wireline Log Received WIC Distribution AUG 2 8 2007	Now Well Dayslamont Coordinator 9/20/07	NOO OTTUE USE ONLY
Wireline Log Received Geologist Report Received Wireline Log Received Geologist Report Received KANSAS CORPORATION COMM Wireline Log Received Geologist Report Received KANSAS CORPORATION COMM Wireline Log Received AUG 2 8 2007	itle: New Weil Development Coordinator Date: 8/28/07	Letter of Confidentiality Received
Geologist Report Received RECEIVED Hotary Public: UIC Distribution TERRA KLAUMAN Pate Commission Expires: 8-4-2010 A TERRA KLAUMAN Notary Public - State of Kansas	Subscribed and sworn to before me this 48 day of Cluquet	, If Denied, Yes Date:
Date Commission Expires: 8-4-20/0 TERRA KLAUMAN Notary Public - State of Kansas MECETVED KANSAS CORPORATION COMM TERRA KLAUMAN Notary Public - State of Kansas	007	
Pate Commission Expires: 8-4-2010 TERRA KLAUMAN AUG 2 8 2007 Notary Public - State of Kansas		Geologist Report Received RECEIVED KANSAS CORPORATION CONT.
Notary Public - State of Kansas		
Notary Public State of Action	Date Commission Expires: 8-4-2010 TERRA	A KLAUMAN AUG 2 8 2007
	My Appt. Expires	ic-State of Railson

Operator Name:	uest Cherokee, L	LC	Lease Na	me: Greve, Glen D		Well #: 12-1	
	27 S. R. 19		est County: _N	leosho			
ested, time tool op emperature, fluid	Show important tops pen and closed, flowi recovery, and flow ra ogs surveyed. Attack	ng and shut-in press tes if gas to surface	sures, whether shut-i test, along with final	n pressure reache	d static level, hyd	drostatic pressures	, bottom hole
Orill Stem Tests Ta		Yes 🗸	No	✓ Log Forma	tion (Top), Deptl	h and Datum	Sample
Samples Sent to 0	Geological Survey	Yes 🗸		Name See attached		Тор	Datum
Cores Taken		Yes 🗸					
Electric Log Run (Submit Copy)		Yes	No				
ist All E. Logs Ru	in:						
Compensated Dual Inductio Gamma Ray	_						
		= -	ASING RECORD gs set-conductor, surfac	New Used e, intermediate, produ	uction, etc.		
Purpose of Strin	g Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4	8-5/8"	22	21.5	"A"	5	
Production	6-3/4	4-1/2	10.5	1025.20	"A"	130	
			<u> </u>				
		ADDIT	IONAL CEMENTING	/ SQUEEZE RECOR	RD		
Purpose: Perforate Protect Casi Plug Back Ti Plug Off Zor	D	Type of Ceme	nt #Sacks Use	ed	Type an	d Percent Additives	
	PERFOR	ATION RECORD - Brid	lge Plugs Set/Type	Acid, F	racture, Shot, Cem	ent Squeeze Record	
Shots Per Foot		ify Footage of Each Inte			Amount and Kind of		Depth
4	902-905			300gal 15%HCLw/ 19	bbls 2%kcl water, 176bbls w	rater w/ 2% KCL, Biocide, 1300#	20/40 sand 902-905
4	733-735/634-636	6/603-606/581-582		300gal 15%HCLw/40	bbls 2%kd water, 531bbls w	rater w/ 2% KCL, Biocide, 7300#	20/40 sand 733-735/634-63
							603-606/581-58
4	504-508/494-498	3	,	300gal 15%HCLw/ 37	bbis 2%kci water, 571bbis w	vater w/ 2% KCL, Biocide, 8600#	20/40 sand 504-508/494-49
TUBING RECORD	Size 2-3/8"	Set At 929	Packer At n/a	Liner Run	Yes 🗸	No	
Date of First, Resul	merd Production, SWD o	or Enhr. Produc	ing Method	Flowing 🔽 Pun	nping Gas	s Lift Other	(Explain)
Estimated Producti Per 24 Hours		Bbls. Ga		Water 4.3bbls	Bbls.	Gas-Oil Ratio	Gravity
Disposition of Gas	n/a METHOD O	F COMPLETION		Production In	terval	···	<u></u>
Vented ✓ S	old Used on Leas	= '	en Hole 👿 Perf.	Dually Comp.	Commingle	d	





211 W. 14TH STREET,

CHANUTE, KS 66720

620-431-9500

620250



TICKET NUMBER 2155

FOREMAN Dure

TREATMENT REPORT & FIELD TICKET CEMENT

DATE		WELL NA	ME & NUMBER		SECTION	TOWNSHIP	RANGE	COUNTY
5-1:0-07	Greve	Glen	10	2-1	12	270	19	No
FOREMAN / OPERATOR	TIME	TIME OUT	LESS LUNCH	TRUCK #	TRAILER #	TRUCI HOUR		EMPLOYEE SIGNATURE -
Dwanne	7.00	1:30		901640		6,5	Kr	Chargai
Maurick	7:00	1:30		903197	- 		hr =	MLD
Craig	2,00	1.30		903103	, 		10	ea fr
Cary C.	7,00	1.30	1	931500			hr	12 Tarls
Paul	7:00	130		Ertra	· · · · · · · · · · · · · · · · · · ·		ha	al Hole

JOB TYPE Ling	String HOLE SIZE 6	3/1	HOLE DEPTH <u>1038</u>	CASING SIZE & WEIGHT	4/5 10,5
			TUBING	OTHER	
SLURRY WEIGHT_	14,5 SLURRY VOL_		WATER gal/sk	CEMENT LEFT in CASING	
			MIX PSI		
DEMARKS			:		
1/40x	ed anto well a	nd Breo.	K Circulation Pu	mp 100 # An	M G=/
Followed	BV 5 BB1/6	Pad The	N 12 BB/ Dye	Morker and	Stort
Censent,	PUMD 130 S	acks	consent to but	Die Back. St	as and .
Wast out	- PUMD + hew	DUMD G	wiper Plug to	Bottont and	Sc
@ Floor	- Sloe				
e-			:		77.4
1	,		!	·	11
					67.
	1025,2	4/2	Casing		1
ų.	\5	4-	Centralizers		- 1
	/	4-5	Floor Shoe		
: ACCOUNT CODE	QUANTITY or UNITS		DESCRIPTION OF SERVICES OR F	PRODUCT	TOTAL AMOUNT
96/640	6.5 hr	Foreman Pickup			
903 197	6,5 hr	Cement Pump Tru	uck		
903/03	6.5 hr	Bulk Truck		,	
1104	120 SK	Portland Cement			
1124	/	STATE SEPTEMENT	FRAC 12 FF/25	Plug	,
1126	2	OMC Bland Cen	FRAC BAFFTES	3" 3=	
1110	13 SK	Gilsonite		<u> </u>	
1107	1 SK	Flo-Seal			
1118	1 SP	Premium Gel			
1215A	1.601	KCL	2/2/./	13	-
1111B 1123	5/// (-/	City Water	Col Cloride		ECEIVED
1120	3 00 Ga 1	Transport Truck			PORATION COMMISSION
		Transport Trailer		. А 4 ОА	9 9 9 9 9 9
93/500	6.5 hi	_80 Vac		AU	7 4 8 200/
		'			

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CONSERVATION DIVISION WICHITA, KS

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TXD SERVICES LP DRILLERS LOG



TXD SERVICES LP

RIG#	101		S. 12	T. 27	R	. 19		and the second s	
API#	133-26822		County:	Neosho)		281'	no blow	
	Elev:	991'	Location	Kansas			436'	no blow	
							498'	no blow	1
Operator:	Quest Cher	okee, LLC					529'	no blow	
Address:	9520 N. Ma	y Ave, Suite	300				591'	no blow	
	Oklahoma	City, OK. 73	120				622'	no blow	
Well #	12-1		Lease Name	Greve,	Glen	D.	653'	no blow	
Footage Locati	on	660	ft from the	N	L	ine	715'	no blow	
		2050	ft from the	W	L	ine	746'	no blow	i
Drilling Contract	ctor:	TXD	SERVICES	LP			870'	no blow	
Spud Date;	NA		Geologist:				901'	5 - 1/2"	14.1
Date Comp:	5/9/2007		Total Depth:	1040'			932'	5 - 1/2"	14.1
Exact spot Loc	ation;	NE NW					1040'	5 - 1/2"	: 14.1
Barrier Mark			a make the assessment of		1944				
entral and a second	Surface	Production						10000	:
Size Hole		6-3/4"						MUU	
Size Casing	8-5/8"	4-1/2"				 =		AUG-2 8 200	7
Weight	24#							AUG £ () £00!	
Setting Depth	21'						Ť	CONFIDENT	IAL
Type Cement	portland			I				The state of the s	
Sacks				·					

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Formation	Тор	Btm.	Formation	Тор	Btm.	Formation	Тор	Btm.
top soil	0	1	shale	333	357	lime	496	497
clay,lime	1	21	lime	357	359	b.shale	497	499
lime	21	32	shale	359	362	lime	499	508
sand	32	37	lime	362	364	b.shale	508	510
lime	37	43	sand	364	376	shale	510	
shale	43	51	shale	376	384	sand	512	
lime	51	82	sand/shale	384	393	sand/shale	515	
shale	82	84	shale	393	407	shale	518	
shale	84	91	lime	407	409	lime	558	
lime	91	108	coal	409	411	shale	560	
b.shale	108	110	shale	411	413	coal	582	
lime	110	122	lime	413		shale	583	
shale	122	235	shale	425	427	lime	601	
lime	235	238	lime	427	433	shale	603	
shale	238	276	shale	433	434	b.shale	604	
b.shale	276	278	b.shale	434	436	coal	606	
lime	278	283	shale	436	475	shale	607	
sand/shale	283	292	coal	475		coal	635	
shale	292	300	shale	476		shale	637	
lime	300	316	lime	478	483	b.shale	648	
sand/shale	316	319	sand	483	486	coal	650	
shale	319		lime	486		shale	651	653
lime	329	333	b.shale	494	496	lime	653	
			T		<u> </u>		00	CEIVED

RECEIVED KANSAS CORPORATION COMMISSION

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cal	721							
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RECEIVED KANSAS CORPORATION COMMISSION

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CONSERVATION DIVISION IN THE INTERPRETATION DIVISION DIVISIONI DIVISION DIVISION DIVISION DIVISION DIVISIONI DIVISIONI DIVISIO

POSTROCK



Current Completion

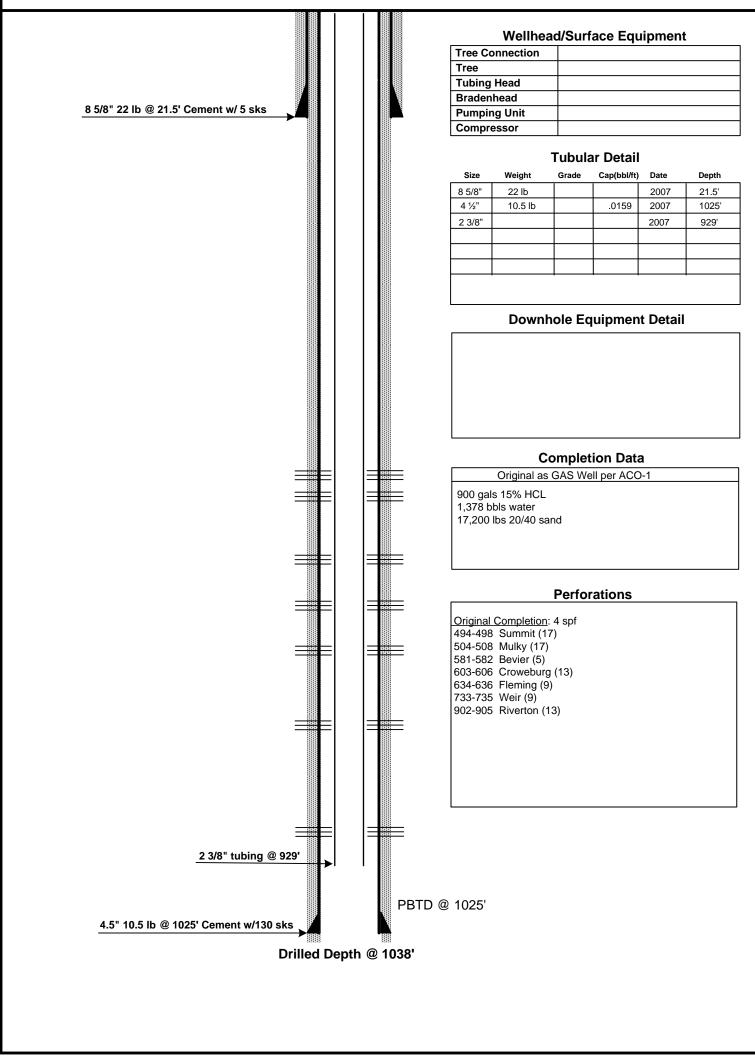
SPUD DATE: 5/7/2007

WELL : Greve, Glen D 12-1 FIELD : Cherokee Basin

STATE : Kansas COUNTY : Neosho

LOCATION: 12-27S-19E (NE,NW)

ELEVATION: 991'



PREPARED BY:	POSTROCK
APPROVED BY:	

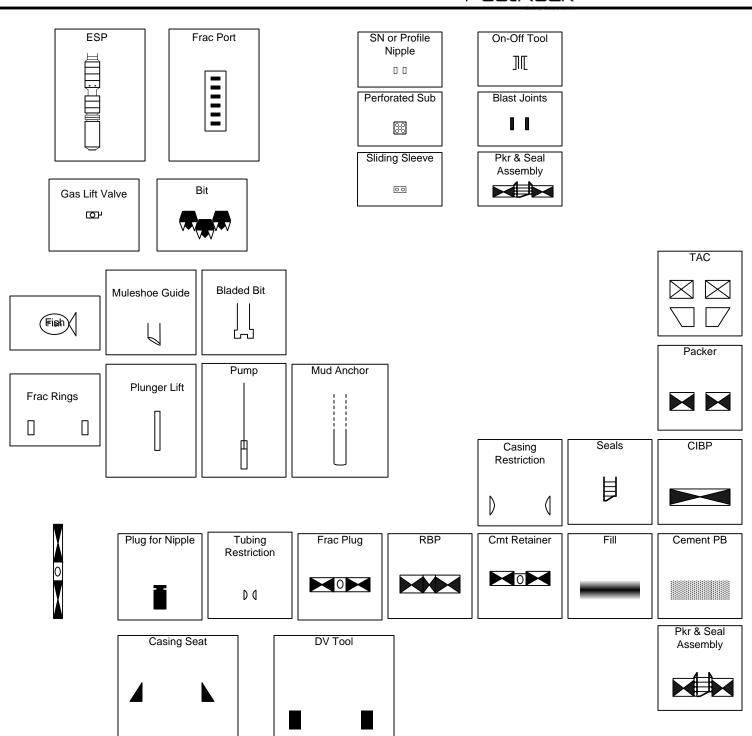
DATE: Oct, 2012

POSTROCK



LEGEND

PostRock[®]



GREVE, GLEN D 12-1

FORMATION:	WEIR	(PERFS):	733 -	- 735			
FORMATION:	RIVERTON	(PERFS):	902	905			
FORMATION:	BARTLESVILLE	(PERFS):	768	- 772			
FORMATION:	BARTLESVILLE	(PERFS):	780	- 786			
FORMATION:		(PERFS):		·			
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FORMATION:	MOLINT OF FILLID PRODUCTION TO	(PERFS):	1 FACH INT	FRVAI			
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	, and the second
Affidavit of Notice Served	<u> </u>
Re: Application for: APPLICATION FOR COM	MINGLING OF PRODUCTION OR FLUIDS ACO-4
Well Name: GREVE, GLEN D 12-1	Legal Location: NWSENENW S12-T27S-R19E
he undersigned hereby certificates that he / she is a duly autho	orized agent for the applicant, and that on the day af OCTOBER
	referenced above was delivered or mailed to the following parties:
ote: A copy of this affidavit must be served as a part of the app	plication.
Name	Address (Attach additional sheets if necessary)
SEE ATTACHED	
	•
ther attest that notice of the filing of this application was publis	thed in the THE CHANUTE TRIBUNE , the official county publication
NEOSHO	county. A copy of the affidavit of this publication is attached.
ed this 26th day of OCTOBER	
	CM SM
	Applicant or Duly Authorized Agent
Subscribed and	sworn to before me this Alexander day of OCTOBER , 2012
JENNIFER R. BEAL	Aunily R. Beal
SEAL MY COMMISSION EXPIRES	Notary Puylic ?
7-20-2016	My Commission Expires: (1) (1) (30, 30) (4)

1-27S-19E

E2SW Verdon W & Judy E. Parham

14370 240th Rd Erie, KS 66733

W2SW Greg R. Vetter

930 S Highland Chanute, KS 66720

2-27S-19E

tract in SE/4 Dwight Angleton

620 S. Third St

Humboldt, KS 66748

11-27S-19E

NE/4 Darilyn Galemore Trust

PO Box C

Chanute, KS 66720

<u>12-27S-19E</u>

NE/4 Herman O & Ruth Buller Trust

%Royce Buller

4100 Ne Cadbury Ave Bentonville, AR 72712

N2SE

Richard L Winder 21955 Ottawa Rd Erie, KS 66733

GREVE, GLEN D 12-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS

	***************************************	**************************************
Seat Operators Unlessed Mineral Owners and Landow	2072 20722	
iset Operators, Unleased Mineral Owners and Landow. Itach additional sheets if necessary)	іеть астеаде	<u></u>
Name:	Legal	Description of Leasehold:
EE ATTACHED		
		· · · · · · · · · · · · · · · · · · ·
JENNIFER R. BEAL OFFICIAL MY COMMISSION EXPIRES 7-20-2014	and sworn before me this all day of OCT Notary Public My Commission Expires:	Beal 2012 3. 20, 2014
	, ,	
		•

1-27S-19E

E2SW

Verdon W & Judy E. Parham

14370 240th Rd Erie, KS 66733

W2SW

Greg R. Vetter 930 S Highland Chanute, KS 66720

2-27S-19E

tract in SE/4

Dwight Angleton 620 S. Third St

Humboldt, KS 66748

11-27S-19E

NE/4

Darilyn Galemore Trust

PO Box C

Chanute, KS 66720

<u>12-27S-19E</u>

NE/4

Herman O & Ruth Buller Trust

%Royce Buller

4100 Ne Cadbury Ave Bentonville, AR 72712

N2SE

Richard L Winder 21955 Ottawa Rd Erie, KS 66733

AFFIDAVIT

STATE OF KANSAS

SS.

County of Sedgwick

Mark Fletchall, of lawful age, being first duly sworn, deposeth and saith: That he is Record Clerk of The Wichita Eagle, a daily newspaper published in the City of Wichita, County of Sedgwick, State of Kansas, and having a general paid circulation on a daily basis in said County, which said newspaper has been continuously and uninterruptedly published in said County for more than one year prior to the first publication of the notice hereinafter mentioned, and which said newspaper has been entered as second class mail matter at the United States Post Office in Wichita, Kansas, and which said newspaper is not a trade. religious or fraternal publication and that a notice of a true copy is hereto attached was published in the regular and entire Morning issue of said The Wichita Eagle for _1_ issues, that the first publication of said notice was

made as aforesaid on the 27th of

October A.D. 2012, with

subsequent publications being made on the following dates:

And affiant further says that he has personal knowledge of the statements above set forth and that they are true.

Subscribed and sworn to before me this

29th day of October, 2012

PENNY L. CASE Notary Public - State of Kansas My Appt. Expires /

Notary Public Sedgwick County, Kansas

Printer's Fee: \$139.60

Published in The Wichita Eagle
October 27, 2012 (3214833)
BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS
NOTICE OF FILING APPLICATION
RE: in the Matter of Postrock Midcontinent
Production, ELC Application for
Commingling of Production in the Greve,
Glen D 12-1 located in Neosho County,
Kansas

Kansas.
TÖ: All QII & Gas Producers, Unleased Mineral Interest Owners, Landowners,

Mineral Interest Owners, Landowners, and all persons whomever concerned. You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has filled an application to commingle the Summit, Mulky, Bevier, Croweburg, Fleming, Weir, Riverton and Bartlesville producing formations at the Greve, Glein D 12-1, located in the NW SE NE NW, \$12-T27S-R19E, Approximately 674 FNL & 2049 FWL, Neosho County, Kansas. Kansas.

Any persons who object to or profest this application shall be required to file their objections or protest with the Conservation
Division of the State Corporation
Commission of the State of Kensas within
fiffeen (15) days from the date of this
publication. These protests shall be filed

Ifficen (15) days from the date of this publication. These profests shall be filled pursuant to Commission regulations and must state specific reasons why granting the application may cause waste, violate correlative rights or poliute the natural resources of the State of Kansas.

All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly. All person and/or companies wishing to profest this application are required to file a written protest with the Conservation Division of the Kansas Oil and Gas Commission.

Upon the receipt of any profest, the Commission will convene a hearing and profestants will be expected to enter an appearance either through proper legal counsel or as individuals, appearing on their own behalf.

Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704

BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS NOTICE OF FILING APPLICATION

RE: In the Matter of Postrock Midcontinent Production, LLC Application for Commingling of Production in the Greve, Glen D 12-1 located in Neosho County, Kansas.

TO: All Oil & Gas Producers, Unleased Mineral Interest Owners, Landowners, and all persons whomever concerned.

You, and each of you, are hereby notified that Postrock Midcontinent Production, LLC has filed an application to commingle the Summit, Mulky, Bevier, Croweburg, Fleming, Weir, Riverton and Bartlesville producing formations at the Greve, Glen D 12-1, located in the NW SE NE NW, S12-T27S-R19E, Approximately 674 FNL & 2049 FWL, Neosho County, Kansas.

Any persons who object to or protest this application shall be required to file their objections or protest with the Conservation Division of the State Corporation Commission of the State of Kansas within fifteen (15) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why granting the application may cause waste, violate correlative rights or pollute the natural resources of the State of Kansas.

All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly. All person and/or companies wishing to protest this application are required to file a written protest with the Conservation Division of the Kansas Oil and Gas Commission.

Upon the receipt of any protest, the Commission will convene a hearing and protestants will be expected to enter an appearance either through proper legal counsel or as individuals, appearing on their own behalf.

Postrock Midcontinent Production, LLC 210 Park Avenue, Suite 2750 Oklahoma City, Oklahoma 73102 (405) 660-7704

A COPY OF THE AFFIDAVIT OF PUBLICATION MUST ACCOM-PANY ALL APPLICATIONS

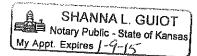
Affidavit of Publication 🐝

STATE OF KANSAS, NEOSHO COUNTY, ss:

Rhonda Howerter, being first duly sworn, deposes and says: That she is Classified Manager of THE CHANUTE TRIBUNE, a daily newspaper printed in the State of Kansas, and published in and of general circulation in Neosho County, Kansas, with a general paid circulation on a daily basis in Neosho County, Kansas, and that said newspaper is not a trade, religious or fraternal publication.

Said newspaper is a daily published at least weekly 50 times a year: has been so published continuously and uninterruptedly in said county and state for a period of more than five years prior to the first publication of said notice; and has been admitted at the post office of Chanute, in said county as second class matter.

That the attached notice is a true copy thereof and was published in the regular and entire issue of said newspaper for _____ consecutive ______, the first publication thereof being made as aforesaid on the <u>SO</u> day of October 2012, with subsequent publications being made on the following dates: _____, 2012 ____ _, 2012 Subscribed and sworn to and before me this all day of Cotobox Notar Public My commission expires: January 9, 2015 Printer's Fee \$ 70.14 Affidavit, Notary's Fee \$ 3.00 Additional Copies\$_ Total Publication Fees \$ 73.14



Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Sam Brownback, Governor

Mark Sievers, Chairman Thomas E. Wright, Commissioner Shari Feist Albrecht, Commissioner

November 13, 2012

Clark Edwards
PostRock Midcontinent Production LLC
Oklahoma Tower
210 Park Ave, Ste 2750
Oklahoma City, OK 73102

RE: Approved Commingling CO111201

Greve, Glen D. 12-1, Sec. 12-T27S-R19E, Neosho County

API No. 15-133-26822-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on November 2, 2012, has been reviewed and approved by the Kansas Corporation Commission (KCC) per K.A.R. 82-3-123. Notice was examined and found to be proper per K.A.R. 82-3-135a. No protest had been filed within the 15-day protest period.

Based upon the depth of the Bartlesville formation perforations, total oil production shall not exceed 100 BOPD and total gas production shall not exceed 50% of the absolute open flow (AOF).

File form ACO-1 upon re-completion of the well to commingle.

Commingling ID number CO111201 has been assigned to this approved application. Use this number for well completion reports (ACO-1) and other correspondence that may concern this approved commingling.

Sincerely,

Rick Hestermann Production Department