

# KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

1093824

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	TOR: 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:			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):		
2.	Estimated amount of fluid production to be commingled from e			
	Formation:			BWPD:
	Formation:			BWPD:
	Formation:			BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
	Formation:	BOPD:	MCFPD:	BWPD:
<ul><li>□ 3.</li><li>□ 4.</li></ul>	Plat map showing the location of the subject well, all other well the subject well, and for each well the names and addresses of Signed certificate showing service of the application and affidation	of the lessee of record or op	erator.	ses within a 1/2 mile radius of
For Con	nmingling of PRODUCTION ONLY, include the following:			
□ 5.	Wireline log of subject well. Previously Filed with ACO-1:	Yes No		
6.	Complete Form ACO-1 (Well Completion form) for the subject	<del>_</del>		
	. , , , , , , , , , , , , , , , , , , ,			
For Con	nmingling of FLUIDS ONLY, include the following:			
7.	Well construction diagram of subject well.			
8.	Any available water chemistry data demonstrating the compati	ibility of the fluids to be com	mingled.	
current ir mingling	VIT: I am the affiant and hereby certify that to the best of my nformation, knowledge and personal belief, this request for comis true and proper and I have no information or knowledge, which istent with the information supplied in this application.	S	ubmitted Electron	iically
l —	C Office Use Only  priced ☐ Approved			t in the application. Protests must be e filed wihin 15 days of publication of

Date: \_

Denied Approved

15-Day Periods Ends:

Approved By:

# KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1 September 1999 Form Must Be Typed

# WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

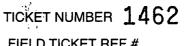
Operator: License # 33344	API No. 15 - 205-26419 -00 -00
Name: Quest Cherokee, LLC	County: Neosho
Address: 211 W. 14th Street	
City/State/Zip: Chanute, KS 66720	1980 feet from S / N (circle one) Line of Section
Purchaser: Bluestern Pipeline, LLC	660 feet from (B / W (circle one) Line of Section
Operator Contact Person: Gary Laswell	Footages Calculated from Nearest Outside Section Corner:
Phone: ( 620 ) 431-9500	(circle one) NE SE NW SW
Contractor: Name: Well Refined Drilling Company	Lease Name: Estes Revocable Trust Well #: 4-1
License: 33072	Field Name: Cherokee Basin CBM
Wellsite Geologist: Ken Recoy	Producing Formation: Multiple
Designate Type of Completion:	Elevation: Ground: 855 Kelly Bushing: n/a
New Well Re-Entry Workover	Total Depth: 1155 Plug Back Total Depth: 1149.56
Oil SWD SIOW Temp. Abd.	Amount of Surface Pipe Set and Cemented at 21' 5" Feet
✓ Gas ENHR SIGW	Multiple Stage Cementing Collar Used?
Dry Other (Core, WSW, Expl., Cathodic, etc)	If yes, show depth setFeet
If Workover/Re-entry: Old Well Info as follows:	If Alternate II completion, cement circulated from 1149.56
Operator:	feet depth to surface w/ 137 sx cmt.
Well Name:	sa citi.
Original Comp. Date: Original Total Depth:	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit)
Deepening Re-perf Conv. to Enhr./SWD	
•	Chloride content ppm Fluid volume bbls
Plug Back Plug Back Total Depth -	Dewatering method used
Commingled Docket No.	Location of fluid disposal if hauled offsileANSAS CORPORATION COMMISSION
Dual Completion Docket No	Operator Name: JUL 2 7 2006
Other (SWD or Enhr.?) Docket No	Lease Name: License No.:
4/5/06 4/7/06 4/11/06 Spud Date or Recompletion Date  Date Reached TD Completion Date or Recompletion Date	License No.:  CONSERVATION DIVISION  Quarter Sec. Twp. S. R. WICHTA RST West  County: Docket No.:
Kansas 67202, within 120 days of the spud date, recompletion, workov Information of side two of this form will be held confidential for a period of 107 for confidentiality in excess of 12 months). One copy of all wireline logs TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells	th the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, ver or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. 12 months if requested in writing and submitted with the form (see rule 82-3-s and geologist well report shall be attached with this form. ALL CEMENTING s. Submit CP-111 form with all temporarily abandoned wells.
herein are complete and correct to the best of my knowledge.	and the on and gae madely have been raily complied with and the statements
Signature: / / y / /so-w	KCC Office Use ONLY
Title: Head of Operations Date: 7/26/06	Letter of Confidentiality Received
	If Denied, Yes Date:
Subscribed and sworn to before me this All day of	, Wireline Log Received
20 06.	Geologist Report Received
Notary Public: Jannifer L. Afmmann	UIC Distribution
001 21 220	
Date Commission Expires: 400 7	Motary Public - State of Kansas
	My Appt. Expires 7-30-09

ORIGINAL

Operator Name: Qu	est Cherokee, LL	.C				able Trust ,	Well#: 4-1	
Sec. 4 Twp. 2	9 S. R. 16	East Wes	t Coun	ty: Neos	ho			<u> </u>
INSTRUCTIONS: Si tested, time tool ope temperature, fluid red Electric Wireline Log	n and closed, flowing covery, and flow rate	g and shut-in pressu is if gas to surface te	res, whether s st, along with	shut-in pre	essure reached	d static level, hyd	rostatic pressur	•
Drill Stem Tests Take		☐ Yes ✓ N	0	<b>₹</b> L	.og Forma	tion (Top), Depth	and Datum	Sample
Samples Sent to Ge	ological Survey	☐ Yes 🗹 No	0	Nam See	e attached		Тор	Datum
Cores Taken		☐ Yes 🗸 Ne	0				4	
Electric Log Run (Submit Copy)		✓ Yes  No	0				1	
List All E. Logs Run:							í	
Comp. Density Gamma Ray C Dual Induction	CL							
		CAS Report all strings	ING RECORD set-conductor, s	Ne Surface, inte		ction, etc.	-	
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)		eight ./Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4"	8-5/8"	20#		21' 5"	"A"	4	
Production	6-3/4"	4-1/2	10.5#		1149.56	"A"	137	
		ADDITIO	NAL CEMENT	INC / POI	IEEZE DECOR	<b>D</b>		
Purpose:	Depth Top Bottom	Type of Cement		s Used	JEEZE RECOR		Percent Additives	
Protect Casing Plug Back TD Plug Off Zone								
Shots Per Foot		ON RECORD - Bridge		9		acture, Shot, Ceme		
_	1080-1082	Footage of Each Interva	и Репогатес		·	Amount and Kind of A		Depth 1080-1082
4	1000-1002				ZAGRI IONINGEN 40 L	ANS 278ACS WEEKS, SOUDUIS WEEK	W/ 2% ROL, BROKE, 4000	W 2040 Salti 1000-1002
4	804-806/767-77	0/748-750			400gal 15%HCLwf 51 b	bis 2%kci water, 1671bbis wate	r w/ 2% KCL, Blockde, 10000	0# 20/40 sand 804-806/767-770
	,				1			748-750
4	692-696/676-67	9			400gal 15%HCLw/ 60 b	obis 2%kci water, 226bbis wat	er w/ 2% KCL, Blockle, 4100	0# 20/40 sand 692-696/676-679
TUBING RECORD 2-	Size · 3/8"	Set At 1122	Packer n/a	At	Liner Run	Yes V	O 4	
Date of First, Resumer	d Production, SWD or E	Enhr. Producing	Method	Flowin	g 🕢 Pump	oing Gast	_iftOtho	er (Explain)
Estimated Production Per 24 Hours	Oil	Bbls. Gas	Mcf	Wate		Bbls.	Gas-Oil Ratio	Gravity
Disposition of Gas	n/a METHOD OF 0	.1mcf		64.6	bbls Production Inte	angl		Maria 1
		_	dolo 🗔 t	<u>.</u> .			· '	1
Vented ✓ Sold (If vented, Su	Used on Lease	Open F	lole ✓ Pei Specify)	n \	Oually Comp.	Commingled	. 14	



211 W. 14TH STREET, CHANUTE, KS 66720 620-431-9500



FOREMAN Dwayne

# TREATMENT REPORT & FIELD TICKET CEMENT

DATE			NAME & NUMBER		SECTION	TOWNSHIP	HANGE	COUNTY
4-11-06	Este.	5 Rev.	TRUST	4-1	4	245	16 E	WL
FOREMAN /	TIME	TIME	LESS	TRUCK	TRAILER	TRUC	<b>I</b>	EMPLOYEE
OPERATOR	IN IN	OUT	LUNCH	#	#	HOUR		SIGNATURE
Owayne	10:45	200	No	90/640		J/C	1 47 2	nayou
Tim	10,45	2:00	No	903 255		3,4	Ar X	- 30
Russell	10 45	200	No	903 230		3/4	hr b	in,
David De	10,45	2:00	No	903139	932 452	34	hr	11 / 10x
Jerry H	10:45	2:00	No	903157		3 14	49	2
Moverick	10145	2 45				14	46 /2	1/1/2
JOB TYPE Long	5+1/ing HOLES	SIZE <u>6 3/</u>	<u>/</u> н	OLE DEPTH 1/5	5 <u>5                                   </u>	SING SIZE & W	EIGHT	1,5 10.
CÁSING DEPTH	149.56 DRILL I	PIPE	т	UBING	ОТІ	1ER		
SLURRY WEIGHT_							CASING	0
DISPLACEMENT_/								·
REMARKS:								
Wash	Oown	Lost L	10 OF	casing +	-Lew Pur	np 25	K Pres	m gek
and Su	seep to	Surface	- 1 The	N Bump	1 / SK	Prem	Gel 1	Fo Mowed
151 13 h	33×1 10v	e and	5+01+ C	cement.	Pump	147 5	Sacks	70 gei
Dye Bo	ick , S	t&pano	1 Wash	Cout Pu	ms Th	en Pu	ms 0	viser
Plug to	Bottom	and so	of Floa	T Shoe	0			
~			W	,	- 12 - 12			
	1149.	54	45 C	asing				
	5		45 0	-entraliza	·/5			
	1		42	Float Sh	e			
931 320	4 h	\rangle \rangl	Casing	TRactor				
607240	4 h	~ Ks		TRailer				
ACCOUNT CODE	QUANTITY or L	INITS		DESCRIPTION OF SE	RVICES OR PROD	JCT		TOTAL AMOUNT
90/646	3 %	F0	reman Pickup					
901255	3 14	1 ~ Ce	ement Pump Truck	.,		. *		
901230	3 14	L/ Bu	ilk Truck					
1104	137	SK Po	rtland Cement					
1124	2		150 pez genere	FROL B	a FFles	3" 3	- // Z	
1126			W/delegence	* 4号 心	affles iper Plu	9		
1110	14		Isonite					
1107	<u> </u>		o-Seal					
1118 1215A			emium Gel				RECEI	VED
1215A 1111B	/	<del></del>		11/11/1		KANSAS	CORPORATI	ON COMMISSION
1123	<del></del>	_	ly Water	61 Cloride			JUL 2 7	2006
901139	3 1/2		ansport Truck			~		
732 452	3/1		ansport Trailer				ONSERVATION WICHITA	LOIVISION -
901 157	3/4		Vac	/// / / / / / / / / / / / / / / / / /			THOM! (A,	co.
Ravin 4513		1			<del></del>			



ECTION: WP: tANGE: EEVATION: PI 8:	4 298 16E 855	REPORT #: DEPTH: PBTD: FOOTAGE: 5-26419-00-00	SPUD DATE: 4/5/2006   1155   1980   FT FROM   South   LIN   NE SE     NE SE   LIN   NE SE	
WP: VANGE; ELEVATION; IPI 9;	29S 16E 855	DEPTH: PBTD: FOOTAGE: 5-26419-00-00	1155  1980 FT FROM South LIN 660 FT FROM East LIN	
WP: VANGE; ELEVATION; IPI 9;	29S 16E 855	DEPTH: PBTD: FOOTAGE: 5-26419-00-00	1155  1980 FT FROM South LIN 660 FT FROM East LIN	
ANGE: LEVATION: PLS:	16E 855	PBTD: FOOTAGE: 5-26419-00-00	1980 FT FROM South L'IN 660 FT FROM East LIN	
P1 8:		FOOTAGE: 5-26419-00-00	660 FT FROM East LIN	
	15-20	5-26419-00-00	660 FT FROM East LIN	
1550 4/606		i for	NE SE	•
155 0 AICING				·
133 11, 011 4/0/00 1110	4/7/06.			
Gas Measured		·	COMMENTS:	
	mcf/day @	584-585 FT.		
0			Gas check at 630 ft. No flow	
0				
0		FT. *	GCS. Gas check at 705 ft.	
0	mcf/day @	747-748 FT.		
0		764-766 FT.		
0	mcf/day @	767-770 FT.		
0		801-804 FT.	GCS. Gas check at 830 ft.	
0				
23		925-1048 FT.	23 mcf/day from this area. Gas check at 930 ft.	
23	mcf/day @	FT. *		
23	mcf/day @	FT. *		
25	mcf/day @	1053-1054 FT.	2 mcf/day from this area. Gas check at 1055 ft.	
28	mcf/day @	Top at 1060 FT.	3 mcf/day from this area. Gas check at 1105 ft.	
28	mcf/day @			
	made without benefit	t of viewing open-hole logs first.		
·				1
nom the Daill 1	d switter '"	denths and adding the transfer		
om the Drillers hand w Zones fyi only.	u written notes. All	urpus and ornice checks reliect wh	nat toe	
36-287				
30-382				
		<del>- ''</del>	· · · · · · · · · · · · · · · · · · ·	
3-395				l l
93-395 87-611				
			RECE	
	0 0 0 0 0 0 23 23 23 25 28 28 28 29 on notes.	0 mcl/day @ 20 mcl/day @ 23 mcl/day @ 23 mcl/day @ 23 mcl/day @ 25 mcl/day @ 28 mcl/day @ 28 mcl/day @ 29 mcl/day @ 20 mcl/day @ 21 mcl/day @ 22 mcl/day @ 23 mcl/day @ 24 mcl/day @ 25 mcl/day @ 26 mcl/day @ 27 mcl/day @ 28 mcl/day @ 29 mcl/day @ 20 mcl/day @ 20 mcl/day @ 21 mcl/day @ 22 mcl/day @ 23 mcl/day @ 24 mcl/day @ 25 mcl/day @ 26 mcl/day @ 27 mcl/day @ 28 mcl/day @ 29 mcl/day @	0 mcl/day @ S84-S85 FT.  0 mcl/day @ FT. *  0 mcl/day @ 747-748 FT.  0 mcl/day @ 764-766 FT.  0 mcl/day @ 767-770 FT.  0 mcl/day @ 801-804 FT.  0 mcl/day @ 905-907 FT.  23 mcl/day @ 925-1048 FT.  23 mcl/day @ FT. *  23 mcl/day @ FT. *  24 mcl/day @ FT. *  25 mcl/day @ Top at 1060 FT.  28 mcl/day @ Top at 1060 FT.  29 mcl/day @ Top at 1060 FT.  20 mcl/day @ Top at 1060 FT.  21 mcl/day @ Top at 1060 FT.  22 mcl/day @ Top at 1060 FT.  23 mcl/day @ Top at 1060 FT.  24 mcl/day @ Top at 1060 FT.  25 mcl/day @ Top at 1060 FT.  26 mcl/day @ Top at 1060 FT.  27 mcl/day @ Top at 1060 FT.  28 mcl/day @ Top at 1060 FT.  29 mcl/day @ Top at 1060 FT.	0 mct/day @ S84-S85 FT. 0 mct/day @ FT. * Gas check at 630 ft. No flow 0 mct/day @ FT. * GCS. Gas check at 705 ft. 0 mct/day @ 747-748 FT. 0 mct/day @ 764-766 FT. 0 mct/day @ 764-766 FT. 0 mct/day @ 764-770 FT. 0 mct/day @ 801-804 FT. GCS. Gas check at 830 ft. 0 mct/day @ 905-907 FT. 23 mct/day @ 905-907 FT. 23 mct/day @ 925-1048 FT. 23 mct/day from this area. Gas check at 930 ft. 23 mct/day @ FT. * 23 mct/day @ FT. * 25 mct/day @ FT. * 26 mct/day @ FT. * 27 mct/day @ FT. * 28 mct/day @ Top at 1060 FT. 3 mct/day from this area. Gas check at 1105 ft. 29 mct/day @ GCS. Gas check at TD 1155 ft. 3 mct/day @ GCS. Gas check at TD 1155 ft. 4 motes.  10 motes.  10 motes All depths and orifice checks reflect what the

-	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.	<b>————</b>		
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 <sup>+</sup>	(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 <sup>+</sup> (if not known =0)	(mg/l)						0.00	Saturation Index	values	(Final-Initial)
	Mg <sup>2+</sup>	(mg/l)	1,096.00	872.00	1,200.00	953.00	858.00	995.91		lcite	
	Ca <sup>2+</sup>	(mg/l)	1,836.00	2,452.00	2,044.00	1920.00	1948.00	2040.23	-0.73	-0.60	0.13
	Sr <sup>2+</sup>		1,050.00	2,432.00	2,044.00	1720.00	1740.00				0.13
	Ba <sup>2+</sup>	(mg/l)						0.00	Da	rite	
.,		(mg/l)						0.00			
	Fe <sup>2+</sup>	(mg/l)	40.00	21.00	18.00	82.00	90.00	50.21		lite	
	Zn <sup>2+</sup>	(mg/l)						0.00	-1.77	-1.80	-0.03
18	Pb <sup>2+</sup>	(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 <sub>4</sub> <sup>2-</sup>	(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 <sub>2</sub> 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 <sub>2</sub> 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./0	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/ <sup>0</sup> 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/ <sup>0</sup> 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/ <sup>0</sup> 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/ <sup>0</sup> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> S Gas Total H <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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 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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> S Gas Total H <sub>2</sub> Saq (STP) pH Calculated PCO2 Calculated Alkalinity Caclulated \$\mathbb{\text{Catluated}}\$ Exhions= 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 <sub>2</sub> 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 <sup>3</sup> 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 <sub>2</sub> S Gas Total H <sub>2</sub> 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 Converter 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 <sub>2</sub> 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 <sup>3</sup> 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

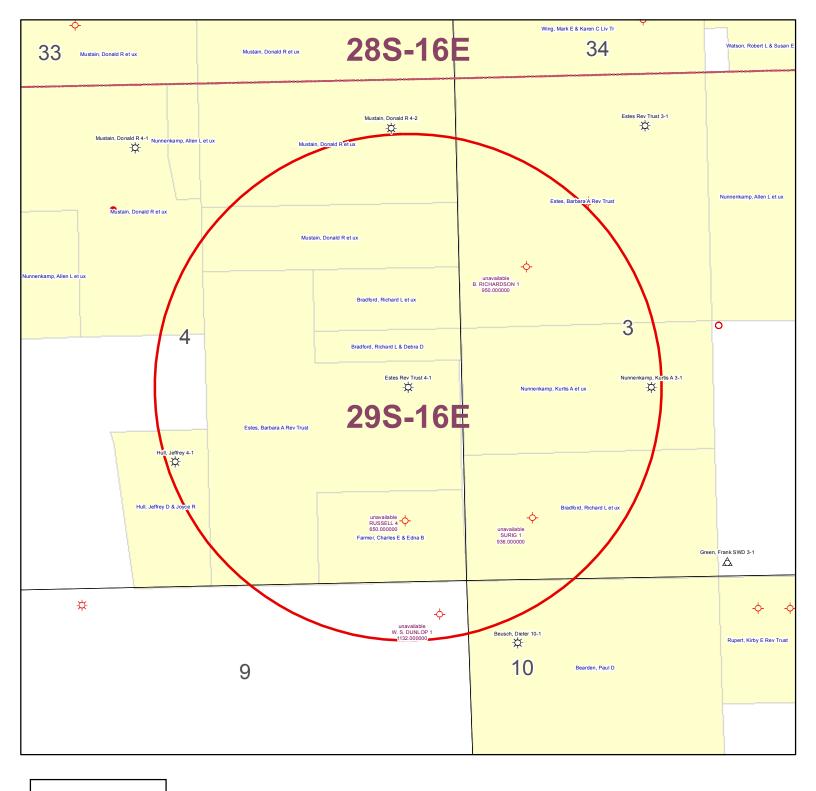
			Ratio			
	20%	20%	20%	20%	20	
Component (mg/L)	Brine 1	Brine 2	Brine 3	Brine 4	Brine 5	Mixed Brine
Calcium	1836	2452	2044	1920	1948	1952
Magnesium	1096	872	1200	953	858	865
Barium	0	0	0	0	0	0
Strontium	0	0	0	0	0	0
Bicarbonate	190	234	259	268	254	253
Sulfate	1	1	8	1	1	1
Chloride	36299	48965	47874	45632	43147	43206
CO <sub>2</sub> 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



## **KGS STATUS**

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

Estes Rev Trust 4-1 4-29S-16E 1" = 1,000'

### **ESTES REVOCABLE TRUST 4-1**

FORMATION:	RIVERTON	_ (PERFS): _	1080 -				
FORMATION:	BARTLESVILLE	_ (PERFS): _	832 -	- 838			
FORMATION:	BARTLESVILLE	(PERFS):	887 -	- 893			
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## **POSTROCK**



# **Current Completion**

WELL : Estes Rev Trust 4-1

FIELD : Cherokee Basin

STATE : Kansas COUNTY : Wilson

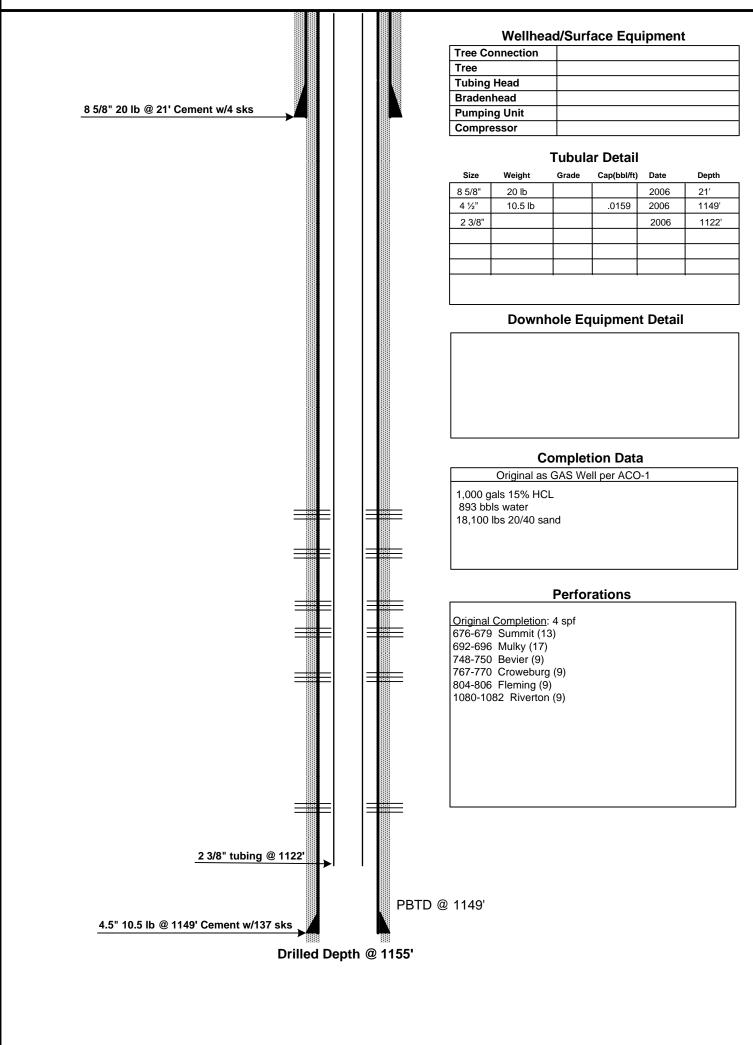
PREPARED BY: POSTROCK

APPROVED BY: \_

SPUD DATE : 4/5/2006 COMP. Date : 4/11/2006 API: 15-205-26419-00-00

**LOCATION: 4-29S-16E (NE,SE)** 

**ELEVATION: 855'** 



**DATE:** Sept, 2012

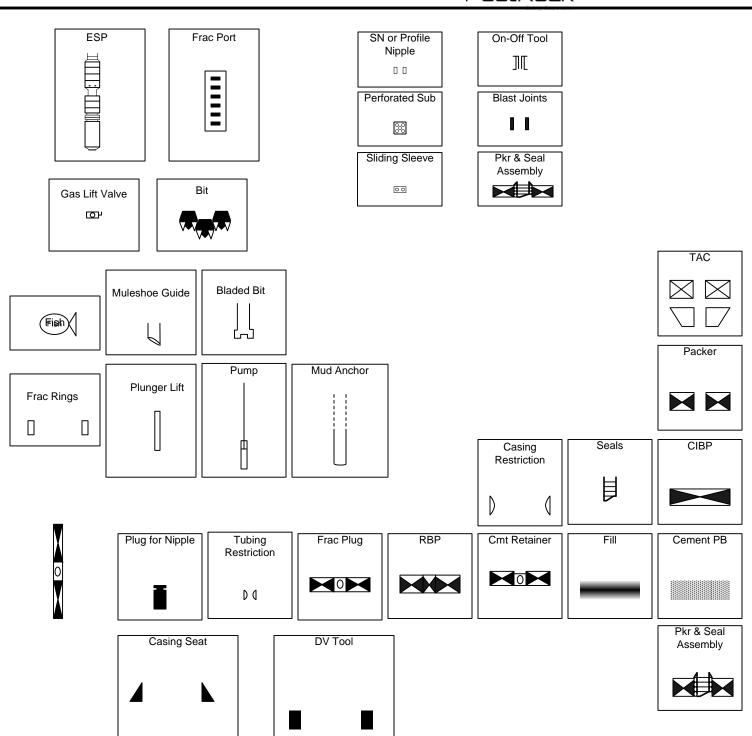
DATE:\_

# **POSTROCK**



## **LEGEND**

# PostRock<sup>®</sup>



#### 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 1St 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

1st day of October, 2012

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

Notary Public Sedgyvick County, Kansas

Printer's Fec: \$139.60

EGAL PUBLICATION

LEGAL PUBLICATION

PUBLISHED IN THE WICHITA EAGLE
OCTOBER 1, 2012 (3297/61)
BEFORE THE STATE CORPORATION
COMMISSION
OF THE STATE OF KANSAS
NOTICE OF FILING APPLICATION
RE: In the Matter of Postrock Midconlinent
Production, LLC Application for Commingling
of Production in the Estes Revocable Trust
4-1 located in Wilson 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 Midconlinent Production,
LLC has filled an application to commingle
the Summit, Mulky, Bevier, Croweburg,
Fleming, Riverton and Bartlesville producing
formalions at the Estes Revocable Trust 4-1,
located in the SW NE NE SE, S4-1795-R16E,
Approximately 2027 FSL & 560 FEL, Wilson
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 sovern
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 inrough proper legal
counsel or as individuals, appearing on their
own behalt.
Postrock Midconfinent Production, LLC
210 Park Avenue, Suite 2750
Okiahoma City, Okiahoma 73102
(405) 660-7704
A COPY OF THE AFFIDAVIT OF
PUBLICATIONS

### PROOF OF PUBLICATION

# STATE OF KANSAS Wilson County - SS

JOSEPH S. and RITA M. RELPH, of lawful age, being duly sworn upon oath that they are the Owners and Publishers of the WILSON COUNTY CITIZEN:

THAT said newspaper has been published at least weekly fifty (50) times a year and has been so published for at least five years prior to the first publication of the attached notice:

THAT said newspaper is a general circulation on a daily, or weekly, or monthly, or yearly basis in;

WILSON COUNTY, KANSAS and is NOT a trade, religious or fraternal publication and has been PRINTED and PUBLISHED in Wilson County, Kansas.

THE ATTACHED was published on the following dates in a regular issue of said newspaper:

1st publication was made on the	day or
October	2.20 <i>[2</i>
2nd publication was made on the	day of
	—. 20———
3rd publication was made on the	day of
	20
4th publication was made on the	day of
	20
5th publication was made on the	day of
	20
6th publication was made on the	day of
	20-
TOTAL PUBLICATION FEE: \$ 30	7.21
(Signed) I ma & Welserry	
Subscribed and sween to before me, this	day of
October,	2012
Asita M. Belph	Notary Public)
My commission expires Aug. 30	2014

(Published in the Wilson County Citizen on Monday October 1, 2012.)

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 Estes Revocable Trust 4-1 located in Wilson 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, Riverton and Bartlesville producing formations at the Estes Revocable Trust 4-1, located in the SW NE NE SE, S4-T29S-R16E, Approximately 2027 FSL &

560 FEL, Wilson 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 pur-, suant 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 Kanss

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" 65 1 cpy.



Rita M. Relph NOTARY PUBLIC State of Kansas STATE OF KANSAS My Commission Expires

Affidavit of Notice Served	
Re: Application for: APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS ACO-4	
Well Name: ESTES REVOCABLE TRUST 4-1 Legal Location: SWNENESE S4-T29S-	
The undersigned hereby certificates that he / she is a duly authorized agent for the applicant, and that on the day 26TH of NOVEI	<u>viber</u> ,
Note: A copy of this affidavit must be served as a part of the application.	
Name Address (Attach additional sheets if necessary)	
SEE ATTACHED	
I further attest that notice of the filing of this application was published in the THE WILSON COUNTY CITIZEN ,	the official county publication
ofWILSON county. A copy of the affidavit of this publication is attached.	, , , , , , , , , , , , , , , , , , ,
27*	
Signed this 26TH day of NOVEMBER , 2012	
teff Marris	
Applicant or Duty/Authbrized Agent Subscribed and sworn to before me this day of NOVEMBER	. 2012
Subscribed and sworn to before me this day of day of day of	
JENNIFER R. BEAL  OFFICIAL MY COMMISSION EXPIRES  Notary Purple  Notary Purple	7
OFFICIAL MY COMMISSION EXPIRES  7-20-2016  My Commission Expires:	7/10

### **ESTES REV TRUST 4-1**

# 4-29S-16E

**NESW** Wilson County Board of Commissioners

615 Madison

Fredonia, KS 66736

## 9-29S-16E

**NE4** Kent Estes

8893 Scott Rd Altoona, KS 66710

## ESTES REV TRUST 4-1-APPLICATION FOR COMMINGLING OF PRODUCTION OR FLUIDS

Name:	Legal Description of Leasehold:
E ATTACHED	20ga: 2000.ptot. 0. 2000.foto.
	<del></del>
******	
JENNIFER R. BEAL OFFICIAL MY COMMISSION EXPIRES 7 - 20 - 20 1/6	Applicant of Duly Authorized Agent  sed and sworn before me this 26TH day of NOVEMBER 2012  Notary Public  My Commission Expires: Quelly 20, 2016

### **ESTES REV TRUST 4-1**

4-29S-16E

**NESW** Wilson County Board of Commissioners

615 Madison

Fredonia, KS 66736

9-29S-16E

NE4 Kent Estes

8893 Scott Rd Altoona, KS 66710 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

December 12, 2012

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

RE: Approved Commingling CO121208

Estes Revocable Trust 4-1, Sec. 4-T29S-R16E, Wilson County

API No. 15-205-26419-00-00

Dear Mr. Edwards:

Your Application for Commingling (ACO-4) for the above described well, received by the KCC on December 10, 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 Riverton 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 CO121208 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