Form 3160-5 (March 2012)

# UNITED STATES DEPARTMENT OF THE INTERIOR

OCD Artesia

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

BUR	EAU OF LAND MAN	NAGEMENT		. Lease Serial No. IMNM2376 <b>8 5</b>	
Do not use this f		ORTS ON WELLS to drill or to re-enter an APD) for such proposals	6.	If Indian, Allottee or	Tribe Name
SUBMI	T IN TRIPLICATE – Other	r instructions on page 2.	. 7.	If Unit of CA/Agree	ment, Name and/or No.
1. Type of Well					
Oil Well Gas W	7ell ✓ Other SV	WD	P	. Well Name and No. PHILLIPS SWD FED	DERAL #1
2. Name of Operator CHEVRON U.S.A. INC.			9. 3	. API Well No. 0-015-25530	,
3a. Address		3b. Phone No. (include area cod	le) 10	0. Field and Pool or E	xploratory Area
15 SMITH ROAD MIDLAND, TEXAS 79705		432-687-7375	D	DELAWARE BASIN,	, NORTH
4. Location of Well (Footage, Sec., T., 330 FSL, & 2063 FEL, SECTION 1, UL: O,T-265	R.,M., or Survey Description	1)	11	1. County or Parish, S	State
330 FSL, & 2063 FEL, SECTION 1, UL: O,1-26	S, K-29E		Ε	EDDY COUNTY, NE	W MEXICO
: 12. CHEC	K THE APPROPRIATE BO	OX(ES) TO INDICATE NATURE	E OF NOTICE,	, REPORT OR OTHE	ER DATA
TYPE OF SUBMISSION		TY	PE OF ACTIO	'nN	
Notice of Intent	Acidize	Deepen	Product	tion (Start/Resume)	Water Shut-Off
Notice of Filterit	Alter Casing	Fracture Treat	Reclama	ation	Well Integrity
[ ] (c.)	Casing Repair	New Construction	Recomp	plete	Other RUN STEP RATE
Subsequent Report	Change Plans	Plug and Abandon	Tempor	rarily Abandon	TEST & STIMULATE
Final Abandonment Notice	Convert to Injection	Plug Back	Water I	Disposal	
13. Describe Proposed or Completed O the proposal is to deepen direction: Attach the Bond under which the v following completion of the involv testing has been completed. Final determined that the site is ready fo	ally or recomplete horizontal work will be performed or pro- red operations. If the operation Abandonment Notices must	Ily, give subsurface locations and rovide the Bond No. on file with B ion results in a multiple completio	measured and t LM/BIA., Req n or recomplet	true vertical depths of quired subsequent rep- tion in a new interval,	f all pertinent markers and zones. orts must be filed within 30 days a Form 3160-4 must be filed once
CHEVRON U.S.A. INC. REQUESTS	S APPROVAL TO CONDU	UCT A STEP RATE TEST ON	THE SUBJEC	OT WELL, AND STI	MULATE.
PLEASE FIND ATTACHED, THE IN	ITENDED PROCEDURE,	, WELLBORE DIAGRAM, AND	C-144 INFO	RMATION FOR NW	10CD.
		RECEIV	EDI	Acce	epted for record

RECEIVED

MAY 1 2 2014

NMOCD ARTERIA

Accepted for record NMOCD 16914-14

SEE ATTACHED FOR CONDITIONS OF APPROVAL

	SUBJECT TO LIVE							
14. Thereby certify that the foregoing is true and correct. Name (Printed/Typed) DENISE PINKERTON	SUBJECT TO LIKE APPROVAL BY STATE Title REGULATORY SPECIALIST							
Signature Light to Under Signature	Date 02/04/2013 APPROVED 14							
THIS SPACE FOR FEE	DERAL OR STATE OFFICE USE							
Approved by Paul R Slevon	to Title PET MAY DOTE 2014							
Conditions of approval, if any, are attached. Approval of this notice does not warrant of that the applicant holds legal or equitable title to those rights in the subject lease which entitle the applicant to conduct operations thereon.	h Would Office							
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any fictitious or fraudulent statements or representations as to any matter within its jurisdiction.	ny person knowingly and willig to BUREAU OF LAND MANAGEMENT State any iction.  CARLSBAD FIELD OFFICE	false,						
(Instructions on page 2)								

API # 3001525530

State/County: NM/ Eddy

SEC 1-26S-29E, 327 FSL & 2068 FEL

Job: Conduct Step-Rate Test

#### Well Data:

- Currently injecting approximately 500-1500 bbls at 585 psi
- Max surface pressure is 844 psi as per IPI approved by NMOCD in September 2010
- Perforations: 4220'-4275', 4290'-4320', 4525'-4575', 4675'-4730', 5095'-5150'
- TD @ 5650'

#### Procedure:

- 1. This procedure is based on the most recent information regarding wellbore configuration and equipment that could be found in the Midland Office well files and computer databases as of 1/16/2013. Verify what is in the hole with the well file in the Eunice Field office. Discuss w/ WEO Engineer, Workover Rep, OS, ALS, and FS prior to rigging up on well regarding any hazards or unknown issues pertaining to the well.
- 2. Ensure that the well has been shut in for 2 days prior to the test. For verification call Production Engineer, Alyssa Davanzo, at (720) 244-4417 or (432) 687-7659.
- 3. MIRU step rate test control trailer. RU pump truck and transport.
- 4. NU lubricator and test to 4500 psi.
- 5. RIH BH pressure gauge using slickline operations to ~4685', the midpoint of the perforations.
- 6. Begin conducting step rate test. Maintain a stable rate of 100 BWIPD for 10 minutes and wait for the pressure to stabilize before continuing the test.
- 7. Pump each 10 minute interval at the following injection rates: 200 BPD, 400 BPD, 600 BPD, 800 BPD, 1000 BPD, 1500 BPD, 2000 BPD, and 2500 BPD. Injection rates may vary based on collected data from the previous step and the estimated frac pressure. Three data points above and below the frac pressure are required for a complete test. Pump approximately 50 bbls total, assuming each stage is 10 minutes.

	Potential Pumping Schedule (10 min/Stage)											
Stage	BWIPD	BWIPM	Volume/Stage	Rounded Volume/Stage								
1	100	0.07	0.69	1.00								
2	200	0.14	1.39	2.00								
3	400	0.28	2.78	3.00								
4	600	0.42	4.17	5.00								
5	800	0.56	5.56	6.00								
6	1000	0.69	6.94	7.00								
7	1500	1.04	. 10.42	11.00								
8	2000	1.39	13.89	14.00								
9	2500	1.74	17.36	18.00								
		Total bbls	63.19	70.00								

- 8. Record stabilized pressure and injection rate for each step and chart results.
- 9. POOH with BH pressure gauge.
- 10. ND lubricator.
- 11. RDMO step rate test equipment and pump truck.

WELL (PN): PHILLIPS SWD FEDERAL 1 RE(CVX) (631381)
FIELD OFFICE:
FIELD: Delaware Basin North
STATE / COUNTY: NEW MEXICO / EDDY
LOCATION: SEC 1-26S-29E, 327 FSL & 2068 FEL
ROUTE: HOB-NM-ROUTE 32- RODNEY ACOSTA
ELEVATION: GL: 3,011.0 KB: 3,023.0 KB Height: 12.0
DEPTHS: TD: 5,650.0



API#: 3001525530

API #: 3001525530 Serial #: SPUD DATE: 1/6/1986 RIG RELEASE: 1/22/1986 FIRST SALES:

VERTICAL Original Hole, 10/19	7 2. 5-1 (7	***********	Surface Ca	asing; S					lole "	84 J. St.		
Vertical schematic (actual)	South English	Zones	Set Tension (kips)		M	ud Weight	Cı	ut Pull Date			Depth Cut Pull (	ftKB)
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J-55; 3,000.0 flKB			tem Des	OD (in)	ID (in)	(in)	Wt (lb/ft)	Grade	Thread		Btm (ftK	3) Len (ft)
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8 5/8 in; 32.00 lb/ft;												
K-55; 3,155.0 ftKB					心 篇				* <sub>a</sub> Top	335	4 25 CA	
Bell Canyon Perfs			Item Des			瓣(in)約						
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<b>₩</b>		!	Casing Joints	5 1/2	4.892		17.00	J-55	ST&C	5,569	.0 5,649	.0 80.00
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3/31/2011 Acidizing; 5,095.0- 5,150.0 ftKB;			Lead	1/6/1986			20		<u> </u>			
11/5/2010			Description:		ale Casin	g Cemen	t					
Plug Back Total	1218	CHERR.	12.0-3,155.	0								
Depth; 5,265.0 ftKB \		Duran Carlos	Top of Cemen	it (ftK8):	12.0	7	op Meas	urement l	Method:	Returns to	o Surface	
Bridge Plug -				"Pump		Amoun			1,300 miles			Yield
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in; 5,300.0 ftKB;			Lead	1/6/1986			800		1		T	•
W/35' CMT, ON TOP CIBP	.M		Tail	1/6/1986	- 1		200				Ì	
TOP CIBP		DELAW	Top Out	1/6/1986	3		30					
	Й	<u></u>	Description:	Production	n Liner	***************************************						
TOP CIBP	M		3,000.0-5,6	50.0								
	W		Top of Cemen	it (ftKB):	3,000.0	7	op Meas	urement l	Method:	Cement B	Bond Log	
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5 1/2 in; 17.00 lb/ft;	<b>3</b> 1/1		Flujd	, Dat		(sacks	1~: .	Class	Dens (	io/gal)	. (bbl)	(ft³/sack)
J-55; 5,650.0 ftKB	31/3		Lead	1/6/1986	3		825					
		i	1									

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API#: 3001525530 Serial #: SPUD DATE: 1/6/1986 RIG RELEASE: 1/22/1986 FIRST SALES:

DEPTHS: TD: 5,650.0		FIRST SALES:								
VERTICAL - Original Hole, 10/19/2012 2:00	Applied to the second	Description: Cement Plug								
Vertical schematic, (actual).	. Zones .	5,609.0-5,650.0								
and by earth and the second states are given the states of a second readous to the second states and a second states are second states as the second states are secon		Top of Cement (ftKB): 5,609.0 Top Measurement Method: Volume Calculations								
numanananananananananananananananananana		Pump Start Amount Vol Rumped (sacks) (Class Date (sacks) (Class Date (bb)) (fi?/sack)								
		Section (migal)								
		Description: Cement Plug								
		3,000.0-3,050.0								
		Top of Cement (ftKB): 3,000.0 Top Measurement Method:								
	•	Top or centert (trice). C,0000 Top measurement method.								
13 3/8 in; 54.50		Pump Start Amount Vol Pumped Yield Fluid Date (sacks) Class Dens ((b/gal) (bbl) (ff/sack)								
lb/ft; J-55; 400.0										
ftKB]		Description: Cement Plug								
5 1/2 in; 17.00 lb/ft;		2,950.0-3,000.0								
J-55; 3,000.0 ftKB	!	Top of Cement (ftKB): 2,950.0 Top Measurement Method: Temperature Log								
1 0 00, 0,000.0 1110.0		Pump Start Amount Vol Pumped Vol Pumped Vield								
		Fluid Date Class Dens (lb/gal) (th/sack)								
		Description: Cement Plug								
8 5/8 in; 32.00 lb/ft;		350.0-450.0								
K-55; 3,155.0 ftKB		Top of Cement (ftKB): 350.0 Top Measurement Method: Temperature Log								
Bell Canyon Perfs squzd w/150 sxs		Pump Start Amount Vol(Pumped Yield)								
cmt cmt	BELL作物									
SQZD perfs from	CANYO	Description: Cement Plug								
3315 to										
		12.0-62.0   Top of Cement (ftKB): 12.0   Top Measurement Method: Temperature Log								
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		Control of the second s								
		Description: Production Casing Cement								
Sand Frac; 4,220.0-	CHERRY®	1								
4,320.0 ftKB; ——		Top of Cement (ftKB): 12.0 Top Measurement Method: Returns to Surface								
4/8/2011	Original. Hole	Pump Start Amount Vol Pumped Yield								
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		Lead 10/8/2010 500 C 14.80 1.33								
, <u>a</u>		Description: Cement Squeeze								
Sand Frac; 4,525.0-	CHERR	3,315.0-3,357.0								
4,730.0 ftKB; ————		Top of Cement (ftKB): 3,315.0 Top Measurement Method: Wireline Tag								
4/2/2011	CHERR	Pump Start Amount Vol Pumped Yield								
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Acidizing; 5,095.0-		Description: Cement Plug								
5,150.0 ftKB; \\ 11/5/2010		5,265.0-5,300.0								
Plug Back Total	CHERR	Top of Cement (ftKB): 5,265.0 Top Measurement Method:								
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Bridge Plug -		Thuight San Date of Anglacks) (in sacry)								
Permanent; 5 1/2		THE CONTRACTOR OF THE CONTRACT								
in; 5,300.0 ftKB;		Tubing String Tubing Production  Set Dopth (ftKB)   Wellbore   Run Date   Full Cate   Cut Pull Date   Depth Cut Pull (ft.)								
W/35' CMT. ON TOP CIBP		4 197 5 Original Hole 4/19/2011								
W/35' CMT. ON TOP CIBP	DELAW	Drift Wt Top Btm								
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/Matatatata		Profile Nipple: F 2 3/8 1.500 4,188.3 4,189.3 1.00 1								
5 1/2 in; 17.00 lb/ft;		1,1000 1,1000 1								
5 1/2 in; 17.00 lb/ft; J-55; 5,650.0 ftKB										

Page 2/4

Report Printed: 10/19/2012

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WELL (PN): PHILLIPS SWD FEDERAL 1 RE(CVX) (631381)
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DEPTHS: TD: 5,650.0



API#: 3001525530 Serial #: SPUD DATE: 1/6/1986 RIG RELEASE: 1/22/1986 FIRST SALES:

Vertical schematic (actual		Zones	On-Off Tool Packer	1	2 3/8 2 3/8 : 0.0	000	5.50	4,189. 4,190			)	
			Packer 3	· · · · · · · · · · · · · · · · · · ·	2.3/8:1:01	በበበ : ሴ	2 3 15 50 Feb.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	4 "Cast 11 77 O.		
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			Date		Zone		Top (ftKB)	Btm (ftKE	(snots/i	Çurrent S	tatus	
			1/6/1986	BELL CAN			3,315.0			Squeezed	Colleges 1 1	
13 3/8 in; 54.50			3/25/2011	CHERRY C	ANYON, O	riginal Hole	4:220.0	3 34,27	0.0 3 31.0	Open	34.	
lb/ft; J-55; 400.0 ftKB			4/7/2011	CHERRY C	ANYON, O	riginal Hole	4,290.0	4,320	0.0 1.0	Open		
[ IKD]			4/2/2011	CHERRY	ANYON (O	iginal Höle	4,525.0	4,57	5.0	Open .	<b>期</b> 为15.	
5 1/2 in; 17.00 lb/ft;			4/2/2011	CHERRY C.			4,675.0			Open		
J-55; 3,000.0 ftKB ~~		ļ	10/27/2010	A CONTRACTOR CONTRACTOR	75, Par v 1 + 8 5 Y 1 P 45/5	W 1 1	*	A A A P - W A IV # 743	C. (1) (1)	Open 🚁 🦸	3.4	
The state of the s			1/6/1986	DELAWAR			5,324.0	5,39	2.0	Isolated		
			Stimula	tions:&T	reatm	ents 🥞						
			CHERRY	CANYON,	Stage:	3, Sand I	Frac, 4/8/2	011.	10 Y 34		MAN N	
8 5/8 in; 32.00 lb/ft;			Min Top Dep I	Max Btm De To 4,320.0	tal Clean 945.00	Avg Treat Pr	Q Treat Avg	Post ISIP (psi)   C	omment			
K-55; 3,155.0 ftKB						, ,	J 20.50	II	Set 11 5 1 12525	ကို ကြိုက်လုံ (IIညီ/ထိုး	5112 <i>523</i> 0	
Bell Canyon Perfs			20/40	<u>, 9,20%, 38, 5,324</u>	Brown Sa		SEARCHE CONTRACTOR		592.0	in Going (ip) de	5.0	
squzd w/150 sxs cmt		BELL :	CHERRY	CANYON.	Stage 2	2. Sand I	Frac, 4/2/2	011		A TAKAYATE	S. 4.	
SQZD perfs from		CANYO	Min Top Dep A	Aax 8tm De To	ital Clean	Avg Treat Pr.,	Q Treat Avg	Post ISIP (psi) C	omment	15 F 125 88 F 18 18	ASSIVE MA	
3315 to			4,525.0	4,730.0	981.00	,		711.0	<del></del>			
			20/40	l Size	Brown Sa				592.0	Conc (lb/ga	il) 교립: 5.0	
				CARIVARIE			E TOTAL OF A VALUE			Same Wand Brands of	J.C	
			Min Top Dec. D	Aax Bim De To	Jal Clean	Avg Treat Pr	Frac, 3/31/	Post ISIP (psi) IC	Sartan a sartan Samment			
			5,095.0	5,150.0	670.00	1,739.0	27.00	637.0				
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Sand Frac; 4,220.0- 4,320.0 ftKB;		CHERRY		The state of the s	Brown Sa				0.000		5.0	
4/8/2011		Contract of the Contract of th	CHERRY	CANYON,	Stage:	, Acidiz	ing, 11/5/2	010.				
		Hole	5,095.0	5,150.0	160.00		Q Treat Avg 6.20	Post ISIP (psi)   Ci 603.0	mment			
	- 4		Well No	tes			# 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1	particular of the second	hand a war a	to the state of th		
(A) (17)	Ma .	<u> </u>	Daté	Type 1	Type	2 1	Policies and the second	~. Co		<u> </u>	250	
Sand Frac; 4,525.0-		CHERR	3/25/2011	Schematic	Notes	850# 9	SITP HOLD SA	AFETY MEET	ING RU CH			
4,730.0 ftKB; ————————————————————————————————————		OUEDD®#					FRAC TANK FLWD 1044 BW & 0 BO IN 18 HRS. OPEN CHOKE F.T.P. 20#.					
4/2/2011		CHERR	3/26/2011	Schematic	Notes		732 BW & 0		CALLANDS	COENCUO	/ f"	
Sand Frac; 5,095.0-	И		3/20/2011	Ochematic	Notes	F.T.P.		DO IN 24 FIX	S. ON WIDE	OPEN CHOP		
5,150.0 ftKB; 3/31/2011	M		3/27/2011	Schernatic	Notes	FLWD	BACK 428 B	W & 0 BO IN :	24 HRS. ON	WIDEOPEN		
Acidizing, 5,095.0-						i	(E. 0# F.T.P.		<del></del>			
5,150.0 ftKB;	Ø		3/29/2011	Schematic	Notes		147 BW & 0 ROAD PULLI				E. O#	
11/5/2010 ↓	N <sub>0</sub>	CHERR	Í				ING RIG UP H				UP	
Depth; 5,265.0 ftKB		#7/1 1/18/19/19	1	1	1	1	TS 9.30# 3 1/2				30	
Bridge Plug -					1		RO-PAN REL. SDON.	rkk, IOH W	11111111111111111111111111111111111111	/6" P.C.I.D. ТI	<b>J</b> G	
Permanent; 5 1/2			3/30/2011	Schematic	Notes		SITP & SICP F	OID SAFET	MEETING	TOH M/2 7/9	3"	
in; 5,300.0 ftKB; ————————————————————————————————————			J. J	Something	1	1	TBG & PKR. C				-	
TOP CIBP		DELAW,	}				60# LOW SIDE					
	H	C C CYVVV.			}		(E DOWN TES ICKING UP 63					
							SDON.		,			
	M			L	<del></del>							
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≅	<b>**</b>											
5 1/2 in; 17.00 lb/ft;]				:								

PHILLIPS SWD FEDERAL 1 RE(CVX) (631381)

FIELD OFFICE:

FIELD: Delaware Basin North

STATE / COUNTY: NEW MEXICO / EDDY
LOCATION: SEC 1-26S-29E, 327 FSL & 2068 FEL
ROUTE: HOB-NM-ROUTE 32- RODNEY ACOSTA
ELEVATION: GL: 3,011.0 KB: 3,023.0 KB Height: 12.0

DEPTHS: TD: 5,650.0



API#: 3001525530 Serial #: SPUD DATE: 1/6/1986

RIG RELEASE: 1/22/1986 FIRST SALES:

Well Notes VERTICAL -- Original Hole, 10/19/2012 2:05:56 PM. Vertical schematic (actual) Zones Type 1, Com Date : Type 2 3/31/2011 350# SITP & SICP HOLD SAFETY MEETING CONT. TIH Schematic Notes PICKING UP 3 1/2" TBG & TESTING TO 8000#, RD MONK PIPE TESTING, RU REV. UNIT CIR. HOLE W/120 BW & SET PKR. @ 4998' NU FRAC HEAD & TEST CSG TO 1000# FOR 15 MIN. (OK) CWI SDON. 140# SITP & O# SICP HOLD SAFETY MEETING RU CUDD 4/1/2011 Schematic Notes ENERGY SER. TEST LINES TO 8000#, FRAC STAGE 1 CHERRY CANYON PERFS (5095' - 5150') AS PER DESIGN A.I.R. 27 BPM & A.T.P. 1739# TOTAL LOAD 670 BBL. 1 HR. 13 3/8 in: 54.50 SITP 550# FLWD BACK 1487 B.W. IN 17 HRS ON 26/64 lb/ft; J-55; 400.0 CHOKE F.T.P. 80#. ftKB FLWD BACK 105 B.W. IN 3 HRS. HOLD SAFETY MEETING ND 4/3/2011 Schematic Notes FRAC HEAD NU ENVIRO-PAN REL, PKR TOH W/3 1/2" TBG & 5 1/2 in; 17.00 lb/ft; PKR, RU GRAY WIRELINE PU 5 1/2" CBP TIH TO 5000' SET J-55; 3,000.0 ftKB CBP TOH PU 3 1/8" PERF GUNS TIH & PERFORATE CHERRY CANYON @ (4525' - 75' & 4675' - 4730') 1/JSPF IN 4 RUNS 107 TOTAL SHOTS R.D. GRAY WIRELINE, PU PKR TIH W/3 1/2" TBG TO 4411' RU REV. UNIT CIR. HOLE W/100 BW SET PKR. NU FRAC HEAD, RU CUDD & FRAC CHERRY CANYON PERFS (4525' - 4730') AS PER DESIGN. ISDP 711# (5) 671# 8 5/8 in: 32.00 lb/ft; (10) 632# (15) 619#. SHUT WELL IN R.D. CUDD ENERGY. K-55; 3,155.0 ftKB ÀVG. RATE 26 BPM AVG. PRESSURE 1914#TOTAL LOAD Bell Canyon Perfs 954 BBL. squzd w/150 sxs BELL. CANYO! 4/8/2011 Schematic 400# SITP HOLD SAFETY MEETING FLWD BACK 278 BW IN 4 HRS, ND FRAC HEAD & NU ENVIRO-PAN REL, PKR, TOH SQZD perfs from W/ 3 1/2" TBG. RU GRAY WIRELINE PU 5 1/2" CBP TIH TO 3315 to 4410' & SET CBP TOH PU 3 1/8" PERF GUNS TIH & PERFORATE CHERRY CANYON @ (4220' -75' & 4290' -4320') IN 3 RUNS 87 TOTAL SHOTS R.D. GRAY WIRELINE. PU PKR. TIH W/3 1/2" TBG TO 4077" N.D. ENVIRO-PAN RU REV. UNIT CIR. HOLE W/100 B.W. & SET PKR. N.U. FRAC HEAD. CWI 4/9/2011 Schematic Notes 251# SITP HOLD SAFETY MEETING RU CUDD ENERGY SERVICE & SAND FRAC CHERRY CANYON PERFS (4220' -Sand Frac: 4,220.0-CHERRY 4320') AS PER DESIGN ISDP 712# (5) 670# (10) 652# (15) 4,320.0 ftKB; CANYON 4/8/2011 634#, AVG. RATE 26.5 BPM AVG. PRESSURE 1674#TOTAL Original.". Hole LOAD 945 BBL. CHERRY Sand Frac; 4,525.0-4,730.0 ftKB; 4/2/2011 CHERRA Sand Frac; 5,095.0-5,150.0 ftKB; 3/31/2011 Acidizing; 5,095.0-5,150.0 ftKB; 11/5/2010 Plug Back Total CHERRY Depth; 5,265.0 ftKB Bridge Plug -Permanent; 5 1/2 in; 5,300.0 ftKB; W/35' CMT. ON TOP CIBP DELAWE 5 1/2 in; 17.00 lb/ft; J-55; 5,650.0 ftKB

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Report Printed: 10/19/2012

# **Conditions of Approval**

# Chevron U.S. A. Inc. Phillips SWD – 01 API 3001525530, T26S-R29E, Sec 01

May 07, 2014

- 1. Provide BLM with an electronic copy (Adobe Acrobat Document) cement bond log record from the top of the injection interval to top of cement. The CBL may be attached to a pswartz@blm.gov email.
- 2. Submit a stabilized injection profile survey for the well.
- 3. Submit the well's stabilized current psig/ft surface pressure to the top perforation.
- 4. Submit an anticipated bottom hole fracture pressure for the field or pool formation.
- 5. State the targeted maximum bbl/min injection rate. The objective is to avoid fracturing the injection formation.
- 6. Submit the injection fluid lbs/gal weight.
- 7. Stop injection and record the tubing pressure as it drops until it stabilizes at or below 0.2psig/ft to the top perforation for 8 hours. The well should be backflowed if the shut-in pressure is above 0.2psig/ft to the top perforation. Document the pressure test on a seven day full rotation calibrated recorder chart registering within 25 to 85 per cent of its full range.
- 8. Calculate eight injection rates by multiplying the targeted maximum bbl/min injection by 0.05 for Step 1, 0.10 for Step 2, 0.20 for Step 3, 0.40 for Step 5, 0.60 for Step 6, 0.80 for Step 7, and 1.00 for Step 8. Record both surface and top perforation step pressures at five minute increments. Each step's time duration (usually 30 minutes) should be within 1 minute or less of the preceding step. If stabilized pressure values (Δ±15psig) are not obtained between the last two (five minute) increments the test results will be considered inconclusive.
- 9. The Step Rate fluid used should be the same as the proposed injection fluid.
- 10. Flow rates are to be controlled with a constant flow regulator and measured with a turbine flow meter calibrated within 0.1 bbl/min. Record those rates using a chart recorder or strip chart.
- 11. Use a down hole transmitting pressure device and a surface pressure device with accuracies of ±10psig to measure pressures.
- 12. Notify BLM 575-200-7902, if there is no response, 575-361-2822 as work begins. Some procedures are to be witnessed. If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number. Note the contact, time, & date in your subsequent report.
- 13. When breakdown pressure is not achieved at the **targeted rate** the formation is accepting the injection fluid without fracturing, which is the **objective**.
- 14. When the formation fracture pressure has been exceeded as evidenced by at least two rate-pressure combinations greater than the breakdown pressure stop the test and record the bottom hole Instantaneous Shut-in Pressure. This ISIP is considered the minimum

- pressure to hold open a fracture in this formation at this well. Fifty psig less than the ISIP is the maximum bottom hole pressure BLM will approve.
- 15. Record each interval step of time (min), rate (bbl/min), corresponding down hole and surface pressure (psig) along with a readable graph of that data. Submit that data to BLM with the shut-in pressure recording of paragraph 7 in a subsequent sundry Form 3160-5 within 30 days of completion.

#### Notes:

These conditions of approval for a step-rate test is an adaptation of principals and comments from several sources. The major resource being a paper dated January 12, 1999 from the United States Environmental Protection Agency, Region VIII, 999 18<sup>th</sup> Street – Suite 500, Denver, Colorado.

The intent of a step rate test is to establish that a proposed rate of injection into a formation is below fracture. Because it becomes likely that fracture pressure may be attained and exceeded it is considered a nonroutine fracturing job and requires a notice of intent.

Reference: 43 CFR 3162.3-2 Subsequent well operations.

Compliance with these conditions of approval is necessary for an operator to gain BLM acceptance of an injection pressure increase.