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DATER	MERLIEC	(MODILE)	LOCKTED IN	TYPE	APP NO
				-	

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	١	NEW MEXICO OIL CONSERVAT - Engineering Burea 1220 South St. Francis Drive, Santa	U -		
		ADMINISTRATIVE APPLI	CATION CHI	ECKLIST	
7	HIS CHECKLIST IS M	ANDATORY FOR ALL ADMINISTRATIVE APPLICATION WHICH REQUIRE PROCESSING AT THE	ONS FOR EXCEPTIONS TO	O DIVISION RULES AND R	EGULATIONS
Appile	[PG-Po	s: Indeed Location] [NSP-Non-Standard Pro Inhole Commingling] [CTB-Lease Com Indeed Commingling] [OLS - Off-Lease Sta [WFX-Waterflood Expansion] [PMX-Pa [SWD-Sait Water Disposal] [IPI-li Iffled Enhanced Oll Recovery Cortificati	mingling] [PLC-Perago] [OLM-Off-Lerago]	ool/Lease Commingi ease Measurementj :e Expancion] :creasej	ing]
[1]	TYPE OF AP [A]	PLICATION - Check Those Which App Location - Spacing Unit - Simultaneous NSL NSP SD	oly for [A] Dedication		
	Check [B]	One Only for [B] or [C] Commingling - Storage - Measurement DHC CTB PLC	PC OLS (OLM	
	[C]	Injection - Disposal - Pressure Increase WFX PMX SWD	- Enhanced Oil Reco	DVETY PPR	
	[D]	Other: Specify			
[2]	NOTIFICATI	ON REQUIRED TO: - Check Those W Working, Royalty or Overriding Re			
	[B]	Offset Operators, Leaseholders or	Surface Owner		
	[C]	Application is One Which Require	s Published Legal No	otice	
	[D]	Notification and/or Concurrent Ap	proval by BLM or SI	LO	
	[E]	For all of the above, Proof of Notif			
	[F]	Waivers are Attached			
[3]		CURATE AND COMPLETE INFORM TION INDICATED ABOVE.	IATION REQUIRE	ED TO PROCESS T	не түре
[4] appro- applic	val is accurate a	FION: I hereby certify that the information of complete to the best of my knowledge, quired information and notifications are st	. I also understand th	hat no action will be:	inistrative taken on this
	Note:	Statement must be completed by an individual	=		
Ta Print o	son Nacker or Type Name	Sigffure Welly	Oper time	. Manaju ku 2 be opvating	7/22/2015 Date
		•	e-mail Addres	cu Obc operating	,.6am

-STATE OF NEW MEXICO
- ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

FORM C-108 Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

1,	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X Yes No
11.	OPERATOR: BC Operating, Inc.
	ADDRESS: P.O. Box 50820, Midland, Texas 79710
	CONTACT PARTY: Pam Stevens/Billy Moore PHONE: 432-684-9696
III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
ſV.	Is this an expansion of an existing project? Yes X No If yes, give the Division order number authorizing the project:
v.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
*VIII.	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
•X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted)
*Xi.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering date and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	NAME: Pam Stevens TITLE: Regulatory Analyst
	SIGNATURE: Pam Aturns) DATE: 06/15/2015
•	E-MAIL ADDRESS:pstevens@bcoperating.com If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well.

 Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side I	INJECTION WELL DATA SHEET	ı
OPERATOR: BC Operating, Inc.		
WELL NAME & NUMBER: Pre-Ongard #1 to be re-	named to Pearson SWD #1 upon recompletion	
WELL LOCATION: 1980' FNL & 660' FEL	Н 33	21S 33E
FOOTAGE LOCATION	UNIT LETTER SECTION	TOWNSHIP RANGE
WELLBORE SCHEMATIC See Attached		CONSTRUCTION DATA Casing
	Hole Size:17 1/2"	Casing Size: 13 3/8"
	Cemented with: 300 sx	orft³
	Top of Cement:0'	Method Determined: _Visual
	Intermed	nte Casing
	Hole Size: 12 1/4"	Casing Size: 9 5/8"
	Cemented with: 600 sv	. or
	Top of Cement: 0'	Method Determined: Visual
	Producti	on Casing
	Hole Size: 9 1/3"	Casing Size: 7 5/8"
	Comented with:s	x. orfi ³
	Top of Cement:	Method Determined: Calculated
	Total Depth:14,983	
	Injectio	n Interval
	5835'fc	et To <u>7000'</u>

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tub	ing Size: 4 1/2" Lining Material: IPC PVC Lined							
Тур	Type of Packer: Nickel Plated							
Pac	ker Setting Depth: 5795'							
Oth	er Type of Tubing/Casing Scal (if applicable):							
	Additional Data							
1.	Is this a new well drilled for injection? Yes X No							
	If no, for what purpose was the well originally drilled? Oil and Gas Production							
2. 3.	Name of the Injection Formation: Cherry Canyon Name of Field or Pool (if applicable):							
4.	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. See Attached Schematic							
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:Bone Spring, Wolfcamp							

Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Danlei Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published In the regular end entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated June 26, 2015 and ending with the issue dated June 28, 2015.

Sworn and subscribed to before me this 26th day of June 2015.

My commission expires January 29, 2019

(Seal) -

OFFICIAL SEAL **GUSSIE BLACK** Notary Public State of New Maxico

My Commission Expires 1-29-19

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

mo the Pre-Order's Well Pilo 18 beginning the Pre-Order's Person SWD #1 tupor (co.mb. thou Swoth 18 section 33, T.215 and Pre-Swoth 18 section 33, T.215 and Pre-Swoth 18 section 18 sectio

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00158553

BC OPERATING INC PO BOX 50820 MIDLAND, TX 79710

New Mexico Oil Conservation Division - Form C-108

I. Purpose: Disposal

II. Operator:

BC Operating, Inc.

Address:

4000 N Big Spring St. Midland, Texas 79705

Contact Party:

Billy Moore (432) 684-9696 EXT 750

III. Salt Water Disposal Well Data

Pearson #1 SWD

1980' FNL & 660' FEL Sec 33, T215, R33E

Lea County, New Mexico

The above mentioned well will be re-entered for use as a saltwater disposal well. The proposed injection zone is to the Cherry Canyon formation. No oil or gas zones are known to exist above the disposal interval. One dry hole is located in this Section.

IV. This is not an expansion of an existing project.

V. Subject Area Maps and Area of Review

A map of the subject area, Pearson SWD, including all wells within a 2 mile radius is attached. Also attached is a map showing the subject well's area of review (or half mile radius circle).

- VI. There is one well within the within the ½ mile area of review that penetrated the proposed injection interval. The "JD '33' Federal; it was a gas well and is now plugged. Well schematic is attached.
- VII. Proposed Operation
 - Average Injection Rate = 5000 BWPD
 Maximum Injection Rate = 20000 BWPD
 - 2. The system will be closed.
 - Average Injection Pressure = 900 psig at surface Maximum Injection Pressure = 1158 psig at surface
 - 4. This injection well is for produced water purposes.
 - The Bilbrey "30" Fed #5 has a water analysis which is attached. The sample is from 5160-5210 from the Cherry Canyon. BC Operating's perfs are a bit lower, but still considered the Cherry Canyon.

VIII. Injection zone: Cherry Canyon Injection Interval

Top Cherry Canyon: 5730' Base Cherry Canyon: 7160' Injection Interval: 1430'

The Alluvium-Bolsum-Ogallala shallow water zone is dry in this part of the county – so this is not a concern for BC Operating, Inc

Below this shallow zone is the Dockum Group redbeds that produce fresh water. A nearby well (see attached) has a TD of about 1100 feet and fresh water. This well probably is in the Santa Rosa Sandstone and not the Rustler as suggested in the Formation tops.

BC has fresh water at 1100 feet, more or less and it is in the Dockum Group redbeds. Below these redbeds is salt and anhydrite which do not yield fresh water.

- IX. Acidize Cherry Canyon Perfs from 5790' 6970' (1180') with 12000 gal 15%NEFE HCl and rock salt diverter. (On procedure that is attached)
- X. Well Logs are filed, other logs will be ran and also submitted to NM OCD as well.
- XI. Freshwater Wells within the Area of Review: There are two, both are BC Operating's. Attached Water analysis follow.
- XII. After examining available geologic and engineering data, BC Operating, Inc. finds no evidence of open faults, or other hydrologic connection, between the disposal zone and any underground source of drinking water.
- XIII. "Proof of Notice"
- XIV. Certification

Laboranny Teritokian

A Civilian of B) Conieses Company Lab Test No : 21660 Sample Dete: 10/6/98 Texaco Leb Deta in : 10/8/98 Lab Date Out : 10/14/98 Water Analysis Listed below please find water muly als report from : History Bills (4) #10.5 Specific Cravity : Total Dissolved Scilds : pH : 1.131 183977 Conductivity (µmbos): Ionic Strength : 3.557 Cakinm (C≥++): 10400 Magnetium Sodium (Mg++); (Na+); 1944 57846 738 (P+++): Irm Discolved Iron (Fe++): (Ba++): Beriam Stronton (Sr): (Ma++): 2.72 Menganese Resistivity: Aplems: (HCO3-): 37 Bicerbonate (CO3--): Carbonsto (OH-): Hydroxide Ô 1730 Selfete (304-). Chloride (CI-): 112000 onen Onen Certan Bioside - (201): 185.Co Oxygen (02): Hydrogen Sulfide (H2S): 0.00 Scale Index (positive value indicates scale tendency) a blank indicates some tests were not rec CAC03 \$1 Tempathie CoSO4 \$1 \$0.0C \$0.0C \$0.0C 60.0C 70.0C 86F 104F 1727 140F 168F 176F -0.70 12.74 12.74 12.78 -0.53 -0.22 0.34 0.53 0.96 12.70 12.67 12.52 Comments: If you have my questions or require further information, planes explant us. Sipomoly, on iray White Jay Brown

> Mediand, TX 79711 • 4512 5 County Rd. 1696, Midland, TX 79765 Offices (915) 563-0341 • Fee: (915) 563-0243 A.Q. #0x 61437 ...

> > SEE TOTAL PAGE, 822 48

MIT HELL ANALYTICAL LAS DRATORY

2638 Faudree Odessa, Texas 79765-8538 561-5579

Company:	X-Chem						
Well Number: Lease: Location:	Water Well #1 Battle				Sample Temp: Date Sampled: Sampled by:	70 6/25/20 Robert I	
Date Run:	6/29/2015				Employee #:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	16.601
Lab Ref #:	15-jun-w70820)			Analyzed by:	GR	
			Dissolved	Gases			
					Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulf					.00	16.00	.00
Carbon Dioxid	- (/		NOT ANA				
Dissolved Oxy	gen (O2)		NOT ANA	LYZED			
			Cations	•			
Calcium	(Ca++)				28.06	20.10	1.40
Magneslum	(Mg++)			25.13	12.20	2.06
Sodium	(Na+)				408.04	23.00	17.74
Barlum Manganese	(Ba++) (Mn+)	ļ	NOT ANA	LYZED	25	22.65	
Strontium	(Sr++)		NOT ANA	ı VZEN	.35	27.50	,01
Shoridani	(3/1/)		NOI ANA	LIZED			
	4-11-1		Anions				
Hydroxyl	(OH-)				.00	17.00	.00
Carbonate	(CO3≃)				.00.	30.00	.00
BiCarbonate Sulfate	(HCO3-	•			317.72	61,10	5.20
Chloride	(SO4=) (Cl-)				360.00	48.80	7.38
Chloride	(CI*)				330.36	35.50	9.31
Total Iron	(Fe)				12.53	18.50	.67
Total Dissolve	d Solids				1,482.19		
Total Hardness	s as CaCO3				173.18		
Conductivity M	ICROMHOS/CM				2,318		
рН	9.030			Specific	Gravity 60/60	F.	1.001
CaSO4 Solubilit	y @ 80 F.	17.	19MEq/L,	CaSO4 s	cale is unlikely		
CaCO3 Scale Ind	ex						
70.0	.803	100.0	1.153	130.0	1.663		
80.0	.933	110.0	1.393	140.0	· ·		
90.0	1,153	120.0	1.393	150.0			
	,			·· · · ·	554		

X-Chem

MIT HELL ANALYTICAL LACORATORY

2638 Faudree Odessa, Texas 79765-8538 561-5579

Company:	X-Chem						
Well Number: Lease: Location:	Water Well #2 Battle				Sample Temp: Date Sampled: Sampled by:	70 6/25/20 Robert I	
Date Run: Lab Ref #:	6/29/2015 15-jun-w7082)	l			Employee #: Analyzed by:	GR	пањен
			Dissolved	Gases			
					Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulf Carbon Dioxid Dissolved Oxy	e (CO2)		NOT ANA		.00	16.00	.00
			Cations	i			
Calcium	(Ca++)	}	Carrons		20.42	20.10	1.02
Magneslum	(Mg++				8.49	12.20	.70
Sodium	(Na+)				115.34	23.00	5.01
Barlum	(Ba++))	NOT ANA	LYZED			
Manganese	(Mn+)				.27	27.50	.01
Strontlum	(Sr++)		NOT ANA	LYZED			
			Anions				
Hydroxyl	(OH-)				.00	17.00	.00
Carbonate	(CO3=))			.00	30.00	00,
BiCarbonate	(HCO3-)			244.40	61.10	4.00
Sulfate	(SO4=)				69.00	48.80	1.41
Chloride	(CI-)				53.06	35.50	1.49
Total Iron	(fe)				3.2	18.60	.17
Total Dissolved	i Solids				514.18		
Total Hardness	as CaCO3				85.86		
Conductivity M	ICROMHOS/CM				743		
рН	8.980			Specific	: Gravity 60/60	F.	1.000
CaSO4 Solubilit	y @ 80 F.	19	.79MEq/L,	CaSO4 s	cale is unlikely		
CaCO3 Scale Inde	<u>2</u> x						
70.0	.501	100.0	.851	130.0	1.361		
80.0	.631	110.0	1.091	140.0	1.361		
90.0	.851	120.0	1.091	150.0	1.591		

X-Chem



New Mexico Office of the State Engineer **Point of Diversion Summary**

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in moters)

POD Number

Q54 Q16 Q4 Sec Tws Rng

Х

CP 01356 POD1

4 2 2 33 215 33E

634560 3590014

Driller License:

Dritter Name:

GLENN, CLARK A. "CORKY"

Drill Start Date: 08/01/2014

Drill Finish Date:

08/09/2014

Plug Date:

Log File Date:

08/25/2014 PCW Rcy Date:

Source: Artesian

Pump Type:

Plpo Discharge Size:

1092 Sandstone/Gravel/Conglomerate

Estimated Yield:

Casing Size:

15.50

Depth Well:

1098 feet

Depth Water:

555 feet

Water Bearing Stratifications:	Тор	Bottom	Description
	765	795	Sandstone/Gravel/Conglomerate
	795	825	Shale/Mudstone/Siltstone
	825	920	Sandstone/Gravel/Conglomerate
	920	935	Shale/Mudstone/Siltstone
	935	968	Sandstone/Gravel/Conglomerate
	968	976	Shale/Mudstone/Siltstone
	976	1005	Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

1005

109B 735

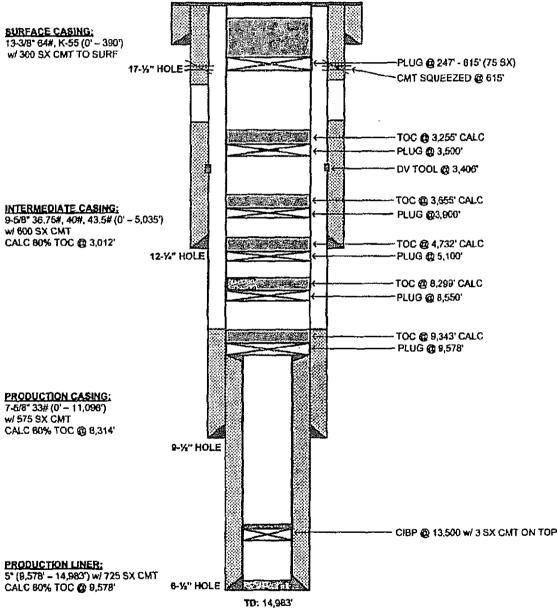


ELEVATION: GL: 3,847' KB: 3,854'

PEARSON #1 SWD

API # 30-025-24438 1980' FNL & 980' FEL, 33, 21S, 33E LEA COUNTY, NEW MEXICO

CURRENT WELLBORE



Updated 07/20/15



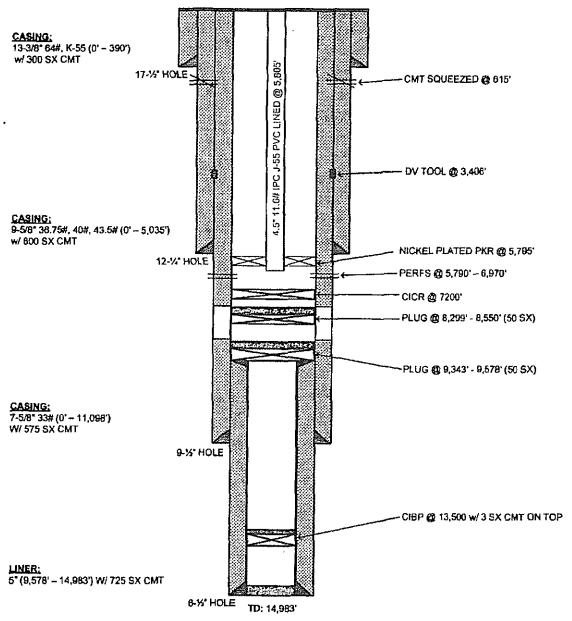
ELEVATION:

GL: 3,847' KB: 3,654'

PEARSON #1 SWD

API # 30-025-24438 1980' FNL & 660' FEL, 33, 215, 33E LEA COUNTY, NEW MEXICO

PROPOSED WELLBORE



Updated 02/04/2015

Pearson SWD #1 1980' FNL & 660' FEL Sec 33, T21S, R33E Lea County, New Mexico

API: 30-025-24438

GL: 3647.1'

Convert P&A Wellbore to Commercial Disposal Drill out plugs, set new plug, squeeze cement

6/15/2015

Well Data

Tubing: Reports show tubing was pulled

13-3/8" 64# K-55 0'-390' Casing:

9-5/8" 36.75#.40#. 43.5# 0'-5.035'

7-5/8" 33# 0'-11,098'

14,983' PBTD: CIBP @ 615'(75sx cement on top) @3,500' (50sx) @3,900'

(50sx)@ 5,100'(50sx) @8,550'(50sx) @9,578'(50sx) @13,500'(3sx)

Procedure

TD:

- Comply with all company and governmental safety regulations. 1.
- 2. Dig csg and find abandoned well hore.
- 3. Install all wellheads
- RU pulling unit. R/U pump truck- Test all wellheads to 500 PSI, N/D wellhead N/U 4. BOP.
- 5. Pull tbg (If any), RIH with bit & collars 2-7/8" BC work string, Drill out plugs down to 8,299'+-.
- 6. 1st plug should be roughly @615' with cement up to 247' (Test Casing to 500psi for 30 minutes after each plug)
- 7.
- 2nd plug is @ 3500' with cement up to 3255' 3nd plug is @ 3900' with cement up to approximately 3655' 8.
- 4th Plug is @ 5100' with coment to approximately 4732' 9.
- At the very last plug test casing to 500psi, have it charted for 30 mins and sent to BC 10. Operating, Inc. Pstevens@bcoperating.com
- 11. TOH then lay down D.C.'s. & Bit
- 12. MIRU Wireline RIH w/ Gauge rig down and tag bottom around 8299' +-.
- Wireline run CBL/CCL/Gamma ray log from 8299' to 4700' 13.
- If the CBL shows no cement from 7100' to 4735' then proceed with steps 14-19, otherwise RDMO. Go in hole with wireline and shoot squeeze holes @ 7300' and @ 4950'. Set retainer @7200' sting into retainer with tubing, start circulating cement 500 sx class C. Sting out of retainer dump 4 sx on top of retainer reverse circulate. TOOH and wait on cement. RHI with wireline run gauge ring and tay retainer @ PBTD.

- 15. Run a second CBL from PBTD to 4700'
- R/D wireline. MIRU pulling unit POH work string laying down on racks. N/D 16. BOP, N/U wellhead. RDWOR 1st job is complete
- Proposed avg daily rate of 4500 BBL/D and a maximum of 20000 BBL/D 17.
- 18. Any systems used will be Closed Loop
- 19. Proposed avg daily pressure is not available (but a Step rate test will be ran to determine what the avg should be.) The maximum injection pressure will be 1158 Psi. The step rate test will be ran as shown at the end of the next future job

Future Job once this process is complete.

Procedure

- ı. Comply with all company and governmental safety regulations.
- 2. MIRU pulling unit and pump truck. ND Wellhead, NU BOP.
- 3. Pressure up on 7-5/8" casing to 500 psig with pump truck for 30 min and run chart.
- TOOH with Tubing if there is any (Last report shows tubing was pulled) 4.

Perforate Cherry Canyon:

5. Rig up wireline lubricator. Perforate Cherry Canyon (Correlate to log dated 02-23-2003) using 3-1/8" HP slick guns with 60 degree phasing & Titan 23 gram charges 4 spf. Perf Sheet attached and below

Pearson SWD

3-1/8" HP Stick guns w/ 60 degree phasing & Titan 23 gram Charges (EH-0.43, Pen-37)

	Stage #1		Wolfe	ann
	Top Perf	Bottom Perf	SPF	# of Holes
1	6,950	6,970	4	80
2	6,615	6,635	4	80
3	6,515	6,535	4	80
4	6,050	6,070	4	80
5	5,865	5,885	4	80
6	5,790	5,810	4	80
	Plug	None	Net H	169
	#Prop/Gross H		Total Holes	480
	Total Prop		Gross H	1,180

Depths Acid Program 6000 Gals 6515'-6970' Ist Job 2nd Job 6000 Gals 5790'-6070'

6. 7. RDMO wireline.

16

Run Injection Equipment and Acidize Cherry Canyon:

- 8. TIH w/ RBP and packer on 2-7/8" Work string
- 9. MIRU acid trucks. Acidize the Cherry Canyon formation:
 - 1^{st} Job- from 6515' 6970' with an RBP at 7000' and PKR at 6490', acidize with 6000 Gals of 15% HCL at 3BPM with Rock Salt as Diverter, Over flush with 100 bbl of fresh water.
 - 2nd Job- from 5790' 6070' with an RBP at 6100' and PKR at 5750', acidize with 6000 Gals of 15% HCL at 3BPM with Rock Salt as Diverter, Over flush with 100 bbl of fresh water (2,000 psi max treating pressure).
- 10. TOH w/ RBP and Packer, laying down work string
- 11. TIH with 4-1/2" IPC lined injection tubing and 7-5/8" Arrowset Nickel Plated injection packer. Circulate corrosion inhibited packer fluid down annulus. Set packer at 5,500'.
- 12. Perform MIT/Step rate test.

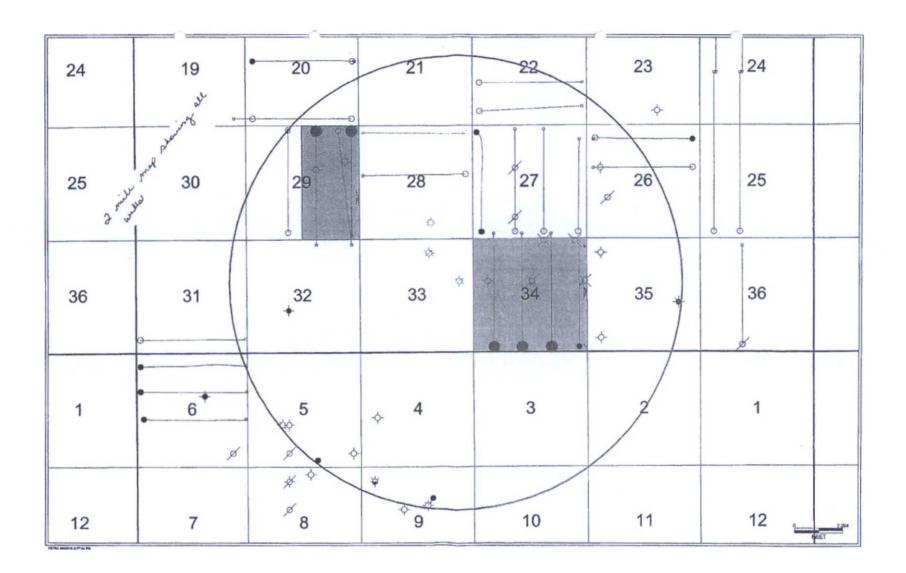
Step rate test

- 13. Establish injection rate at 2 bpm with acid pump truck, document pressure when stable. Increase rate by 1 bpm and wait for pressure to stabilize, 3-5 minutes. Continue increasing by 1 bpm until reaching 2800 psi.
- Increase rate by 0.5 bpm until reaching 3000 psi, document rate when pressure is stabilized for 3-5 minutes.
- 15. ND BOP and NU wellhead. RDMO pulling unit.
- 16. Lay injection lines.

Contacts

Jason Wacker Bruce Madden Art Carrasco Doug Swift Nicolas Klopp	Operations Manager Superintendent Sr Completions Engineer Geo-Tech Operations Engineer	432-631-2142 432-894-0721 432-559-0042 432-684-9696 979-422-2510
Nicolas Klopp Billy Moore	Operations Engineer Operations Engineer	979-422-2510 432-770-4217

Wells within area of revie	w				
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