## State of New Mexico Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham Governor

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Sarah Cottrell Propst Cabinet Secretary

Todd E. Leahy, JD, PhD Deputy Secretary Adrienne Sandoval, Division Director Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following <u>3160-4 or 3160-5</u> form.

Operator Signature Date: 2/6/2020 Well information:

# 30-039-20339 CREEK #001

## HILCORP ENERGY COMPANY

Application Type:

P&A Drilling/Casing Change Location Change

**Recomplete/DHC** (For hydraulic fracturing operations review EPA Underground injection control Guidance #84; Submit Gas Capture Plan form prior to spudding or initiating recompletion operations)



Conditions of Approval:

• Notify NMOCD 24hrs prior to beginning operations.

In addition to the BLM approved plugs ensure the following are covered:

- 4035'-3230' to cover the Chacra and Pictured Cliffs tops. OCD Chacra pick @ 4060'; P.C. pick @ 3280.
- 2970'-2320' to cover the Fruitland, Kirtland and Ojo Alamo tops. OCD Fruitland pick @ 2920'; Ojo Alamo pick @ 2370'.

NMOCD Approved by Signature

3/25/20

Date

orm 3160-5 une 2015)	UNITED STATES EPARTMENT OF THE INTER		OMB N	APPROVED 0. 1004-0137			
В	UREAU OF LAND MANAGEM	ENT		5. Lease Serial No.			
SUNDRY Do not use thi		NMNM0558139 6. If Indian, Allottee or Tribe Name					
abandoned we		,					
SUBMIT IN	TRIPLICATE - Other instructi	ions on page 2		7. If Unit or CA/Agree	ement, Name and/or No.		
<ol> <li>Type of Well</li> <li>Oil Well  ☐ Gas Well  ☐ Oth</li> </ol>	ner		1	B. Well Name and No. CREEK 1			
2. Name of Operator HILCORP ENERGY COMPAN	Contact: TAM NY E-Mail: tajones@hilcorp		9	9. API Well No. 30-039-20339-00-S1			
3a. Address 1111 TRAVIS STREET HOUSTON, TX 77002		Phone No. (include area code) 505.324.5185		10. Field and Pool or Exploratory Area BLANCO MESAVERDE			
4. Location of Well <i>(Footage, Sec., T</i>	., R., M., or Survey Description)			1. County or Parish,	State		
Sec 4 T29N R5W SWNE 1950 36.756454 N Lat, 107.358170				RIO ARRIBA CO	OUNTY, NM		
12. CHECK THE AF	PPROPRIATE BOX(ES) TO I	NDICATE NATURE OI	F NOTICE, R	EPORT, OR OTH	IER DATA		
TYPE OF SUBMISSION		TYPE OF	ACTION				
Notice of Intent	□ Acidize	Deepen	Production	n (Start/Resume)	□ Water Shut-Off		
	□ Alter Casing	Hydraulic Fracturing	Reclamati	on	U Well Integrity		
Subsequent Report	Casing Repair	□ New Construction	Recomple		□ Other		
☐ Final Abandonment Notice	<ul> <li>Change Plans</li> <li>Convert to Injection</li> </ul>	Plug and Abandon Plug Back	<ul> <li>Temporar</li> <li>Water Dis</li> </ul>				
determined that the site is ready for fi Hilcorp Energy Company requ proposed TA procedure. A clo schematic, proposed TA sche	andonment Notices must be filed only inal inspection. uests approval to plug and abai sed loop system will be used. matic, proposed P&A schemat ed on 1/31/20 with Bob Switze	ndon the wellbore if the N Attached is the current w ic, procedures & reclama	AIT fails on ellbore ation plan -				
					IMOCD		
				FE	B 2 0 2020		
				DIST	RICT III		
14. I hereby certify that the foregoing is	true and correct. Electronic Submission #50221	9 verified by the BLM Wel	Information S	system			
Committ	For HILCORP ENERG	SY COMPANY, sent to the	Farmington	-			
Name (Printed/Typed) TAMMY J			LATORY SPE				
Signature (Electronic S	Submission)	Date 02/06/20	020				
		EDERAL OR STATE		1			
Approved By JOE KILLINS			7		Date 02/21/20		
onditions of approval, if any, are attache rtify that the applicant holds legal or equ hich would entitle the applicant to condu	uitable title to those rights in the subje		ton				
tle 18 U.S.C. Section 1001 and Title 43 States any false, fictitious or fraudulent s	U.S.C. Section 1212, make it a crime statements or representations as to any	for any person knowingly and matter within its jurisdiction.	willfully to make	to any department or	agency of the United		
nstructions on page 2) ** BLM REV	ISED ** BLM REVISED ** E	BLM REVISED ** BLM	REVISED	* BLM REVISE	D **		
		E.					

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#### HILCORP ENERGY COMPANY Creek 1 P&A NOI

#### JOB PROCEDURES

1. Hold pre-job safety meeting. Verify cathodic is off. Comply with all NMOCD, BLM, and HEC safety and environmental regulations.

- Check casing, tubing, and bradenhead pressures and record them in WellView. If there is pressure on the BH, contact Operations Engineer. NOTE: Petro Wireline CBL run May 22, 1998 showed TOC @ 3,558' in 5-1/2" casing and TOC @ 2,802' in 7-5/8" casing (at top of log run). New CBL will have been run during MIT/TA program to confirm TOC behind 7-5/8" casing. Plan to run new CBL from top of liner to surface. Procedure for plugs assumes MIT passed and a TOC behind 7-5/8" casing is at 879' based on 75% efficiency calculation during primary cement job pumped 9/23/1970. This puts the Naclemento formation top below TOC. Cement volumes, plug length and pumping procedures will be adjusted pending results of new CBL.
   MIRU service rig and associated equipment; NU and test BOP.
- 4. TIH w/ tubing/work string to +/- 4,035' (top of CIBP).
- 5. Plug #1: CHACRA/LEWIS PERFORATIONS; HEURFANITO BENTONITE, LEWIS AND PICTURED CLIFFS FORMATION TOPS; COVERING 5-1/2" LINER LAP (3,230' to 4,035', 130 Sacks of Class G Cement): Pump a +/- 805' balanced cement plug (130 sacks of Class G cement with an estimated TOC @ +/- 3,230' and an estimated BOC @ +/- 4,035'). Includes 50' of excess cement. NOTE this balanced cement plug will be pumped from the CIBP in the 5-1/2" casing, across the liner top at 3,438' and up into the 7-5/8" annulus to cover the top of the Lewis and Pictured Cliffs formation tops.
- 6. TOOH w/ tubing/work string to +/- 2,931'.
- 7. Plug #2: FRUITLAND, KIRTLAND AND OJO ALAMO FORMATION TOPS (2,457' to 2,931', 121 Sacks of Class G Cement): Pump a +/- 474' balanced cement plug (121 sacks of Class G cement with an estimated TOC @ +/- 2,457' and an estimated BOC @ +/- 2,931'). Includes 50' of excess cement.

9. Plug #3: NACIEMENTO FORMATION TOP (1,202' to 1,302', 35 Sacks of Class G Cement): Pump a +/- 100' balanced cement plug (35 sacks of Class G cement with an estimated TOC @ +/- 1,202' and an estimated BOC @ +/- 1,302'). Includes 50' of excess cement.

#### 10. TOOH w/ tubing/work string. RU EL, RIH peforate squeeze holes @ +/-366\*. POOH, RD EL. Establish injection rate into squeeze holes.

- Plug #4: SURFACE PLUG (0' to 366', 206 Sacks of Class G Cement): Pump +/-50' cement squeeze in the 7-5/8" x 15" OH (below surface shoe), +/- 316' cement squeeze in the 7-5/8" x 10-3/4" annulus and +/- 366' balanced cement plug in the 7-5/8" annulus to surface (206 sacks of Class G cement with an estimated TOC @ +/- 0' and an estimated BOC @ +/-366'). Ensure good returns to surface. Includes 50' of excess cement in OH section below surface shoe.
- 12. ND BOP, cut off casing below casing flange. Top off cement in surface casing annulus, if needed. Install a P&A marker with cement to comply with regulations. Rig down, move off location, cut off anchors, and restore location.

<sup>8.</sup> TOOH w/ tubing/work string to +/- 1,202'.



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#### HILCORP ENERGY COMPANY Creek 1 P&A NOI

<b>∮</b> ∥	ilcorp E	nergy Company				
Well N	ame:	CREEK #1				
0039203	339	Surface Legal Location Field Name 004-029N-005W-G BLANCO MESAVE	RDE (PRORAT #00)	Route 78 1208	State/Province NEW MEXICO	Weil Configuration Type
343.00			-Ground Distance (it) 1.00	K5-Casing Flan	ge Distance (f) KB-Tubing Hang	er Distance (11)
		Original Ho	ole, 1/27/2020	9.02.46 AM	1	
MD (ftKB)	TVD (ftKB)	onginarre	Vertical sche			
	(100)				Surface Casing Ceme	ot: 11 00 320 00:
11.2 315.0					9/18/1970; Cemented	
315.9				000	cement. 1: Surface: 10 3/4 in: 1	0.19 in: 11.00 #KB
319.9			1999294	/4543	316.06 ftKB	0.13 m, 11.00 mb,
878.9		NACINIENTO (final)				ement: 879.00-3.560.00
1,252.0		— NACIMIENTO (final) — dTubing Porducation; 2 3/8 in; 4.70 ib/ft; J-55;]-			9/23/1970; Cemented	w/ 150 sx followed by 50
2,621.1		11.05 ftKB; 5.082.66 ftKB			sx neat cement. TOC	
2,850.9						
3,303.1		PICTURED CLIFFS (final)				
3,430.1		- LEWIS (final)		- <u></u>		
3,438.0			100	ar an		
3,442.9			1 S			
3,558.1			88 s			
3,559.1			89 S		2: Intermediate: 7 5/8 i	n; 6.97 in; 11.00 ftKB;
3,560.0		HUERFANITO BENTONITE (final)			3,560.00 ftKB	
4,061.0		HOERPANTO BENTONTE (intal)				
4,341.9			1000	1828	PERF - LEWIS UPPER	3; 4,085.00-4,580.00;
4,580.1					5/23/1998	
4,525.0		Tubing Pup Joint; 2 3/8 in; 4.70 lb/ft: J-55; 5,082.66 ftKB; 5,085.16 ftKB			PERF - LEWIS LOWE	R; 4,625.00-5,050.00;
5,049.9		Tubing Porducation: 2 3/8 in: 4.70 lb/ft; J-55;			5/22/1998	
5,082.7		5,085.16 ftKB; 5,115.26 ftKB				
5,085.3		Profile Nipple; 2 3/8 in; 4.70 lb/ft; j-55; 5,115.26				
5,115.2		ftKB; 5,116.13 ftKB Expendabl Check Mule Shoe; 2 3/8 in; 4.70				
5,115.1		Ib/ft; j-55; 5.116.13 ftKB; 5.117.00 ftKB			Cement Plug; 5,142.00	-5,403.00; 5/28/1998;
5.142.1		PBTD: 5,142.00; Tagged on 9/11/2007		100 A	Drid cmt plug to 5180'	E 400 00 E 258 00. 1
5,191.9					PERF - MESAVERDE; / 10/23/1970	5,192.00-5,256.00,
5,199.1		CLIFF HOUSE (final)			/ Cement Plug: 5.406.00	-6,190.00; 5/28/1998;
5,237.9		MENEFEE (final)				tw/ 180 sx Class B neat
5,257.9					Cement.	E 500 00 E 530 00: 1
5,402.9		Cement Retainer; 5,403.00-5,406.00-		11	PERF - MESAVERDE; / 10/23/1970	3,330.00-3,330.00,
5,405.8 5,492.1		POINT LOOKOUT (final)			Liner Cement; 3,558.0	
5,529.9		Point Lookoor (iinai)			TOC @ 3,558" by CBL	
5,589.9				N 188	Cemented w/215 sx H 150 sx Class C cemer	
5,945.9		MANCOS (final)		SS 0	Cement Plug; 6,190.00	-6,357.00; 5/28/1998;
6,190.0				######################################	Spot cement plug from	
6,357.0				·····	Class B neat cement.	-7,390.00: 10/23/1970:1
6,740.2		GALLUP (final)			Cemented hole w/ 35	
7,107.9		Cement Retainer; 7,108.00-7,111.00-		11 (8)	PERF - DAKOTA; 7,23	
7,110.9					/10/20/1970	
7,248.0			1001		PERF - DAKOTA; 7,25	0.00-7,274.00;
7,253.0					PERF - DAKOTA; 7.27	6.00-7.304.00
7,274.0					/10/14/1970	
7,275.9					/ PERF - DAKOTA; 7,27	6.00-7,304.00;
7,304.1					10/17/1970	
7,390.1		Cement Retainer; 7,390.00-7,393.00-		1	Cement Plug; 7,393.00	-7,650.00; 10/13/1970;
7,393.0				**** ×**	Cemented Dakota form	nation w/75 sx Class A
7,486.9		- GREENHORN (final)			Comon.	
7,542.0		GRANEROS (final)				in: 3 438 00 8/8-
7,648.9		Serve in (initial)			7.650.00 ftKB	11, 3,430.00 IUND,
7,549.9					Cement: 7,650.00-7,74	8.00; 10/13/1970
7,748.0						



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#### HILCORP ENERGY COMPANY Creek 1 P&A NOI

		nergy Company CREEK #1				
0039203	39		Ped Name BLANCO MESAVERDE (PRORAT #0078	Route 1208	StateProvince NEW MEXICO	Weil Configuration Type
ound Elevat		Original KBRT Elevation (ft)	KB-Ground Distance (II)	KB-Casing Flange Di		nger Distance (ft)
343.00		6.354.00	11.00	I contraction	and the second car	
			Original Hole, 5/1/20	020		
MD (ftKB)	TVD (ftKB)		Vertical schema	tic (actual)		
11.2					Surface Casing Cem	
315.0					9/18/1970; Cemented	d w/ 380 sx Class C
315.9				100000	cement.	10 10 in: 11 00 6KD
319.9			25425253	-servere /	1; Surface: 10 3/4 in: 316.06 ftKB	10.19 III, 11.00 TIKD;
878.9			888 B	300 E	-	Cament 970 00 3 500 00
1,252.0		-NACIMIENTO (final)				Cement: 879.00-3,560.00 w/ 150 sx followed by 50
2,505.9					sx neat cement. TO	
2,821.1						
3,279.9		-PICTURED CLIFFS (final) -				
3,430.1		-LEWIS (final)				
3,438.0						
3.442.9				2		
3,558.1				· · ·		
3.559.1				8 88	2. Intermediate: 7.5/8	3 in; 6.97 in; 11.00 ftKB;
3,560.0				10	3,560.00 ftKB	
4,035.1		CIBP; 4	4.035.00-4.037.00			
4,037.1			(final)			
4,051.0		HOERFANTO BENTONTE	(iiriai)	888		
4,341.9				AND A		R; 4,085.00-4,580.00;
4,580.1				ASSA	5/23/1998	
4,625.0			200	100	PERF - LEWIS LOW	ER: 4,625.00-5.050.00;
5,049.9			300	226	5/22/1998	
5,082.7						
5,085.3						
5,115.2				888 ·	Cement Plug: 5 142	00-5,403.00; 5/28/1998;
5,116.1					Drid cmt plug to 518	
5,142.1		PBTD: 5.142.00: Tag	ged on 9/11/2007		PERF - MESAVERDE	; 5,192.00-5,258.00;
5,191.9					10/23/1970	
5,199.1						00-6,190.00; 5/28/1998; ut w/ 180 sx Class B neat
5,237.9		- MENEFEE (final)			cement.	ULW/ 100 SX Class Dileat
5,257.9					PERF - MESAVERDE	5,590.00-5,530.00;
5,432.9		Cement Retainer;	5 403 00-5 406 00		10/23/1970	
5,405.8						.00-7,650.00; 10/1/1970;
5,492.1		POINT LOOKOUT (final)			TOC @ 3,558' by CB Cemented w/215 sx I	Halco Light followed by
5,589.9				\$\$ •/	150 sx Class C ceme	
5,945.9				× *	Cement Plug; 6,190.0	00-6,357.00; 5/28/1998;
6,190.0		,		×		om 6190'-6357' w/ 20 sx
6,357.0				×	Class B neat cemen	n. 00-7,390.00; 10/23/1970;
5,740.2		GALLUP (final)		×7		5 sx Class C cement.
7,107.9		Cement Retainer;	7,108,00-7,111,00		PERF - DAKOTA: 7,2	
7,110.9		e en en recentrer,		× 1	10/20/1970	
7,237.9			1004	·····	PERF - DAKOTA; 7,2	50.00-7,274.00;
7,250.0			200		10/21/1970	76 00 7 304 00-
7,274.0			102	·····	PERF - DAKOTA; 7,2 10/14/1970	10.00-1,304.00;
7,275.9					PERF - DAKOTA; 7,2	76.00-7,304.00;
7,304.1					10/17/1970	
7,390.1		Cement Retainer:	7 390 00-7 393 00			00-7,650.00; 10/13/1970;
7,393.0				××× 8	Cemented Dakota for	rmation w/ 75 sx Class A
7,485.9		GREENHORN (final)		× **	cement.	
7,542.0		GRANEROS (final)		× ×		
7,647.0		- DAKOTA (final)			-3; Liner; 5 1/2 in; 4.9	5 in; 3,438.00 ftKB;
7,548.9					7,650.00 ftKB Cement: 7,650.00-7,7	748 00: 10/13/4070
1,043.9					Loement, 7,000.00-7,1	40.00, 10/13/19/0
7,748.0						

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#### HILCORP ENERGY COMPANY Creek 1 P&A NOI

		nergy Company CREEK #1					
003920		Surface Lagar Location 004-029N-005W-G	Field Name BLANCO MESAVER	DE (PRORAT #0078	Route 1208	State/Province NEW MEXICO	Weil Configuration Type
round Elevi		Original KBRT Elevation (ft	KB-G	round Distance (ft)	KB-Casing Flange		inger Distance (fl)
,343.00		6,354.00					
MD	TVD		Origir	nal Hole, 5/1/20	020		
(ftKB)	(ftKB)			Vertical schema	tic (actual)		* Annulus; 11.00-216.00; \$11,2020
315.0		alaan Are balan Barkan ay kanala da markan Barkan Alamat (Barkan)	al den vonde statsener (R. Brief werkeiß auf siederich			K BURFACE Plub Boz (2" E'to C'. E	SX Class & Content): Pump a +-316 coment with an estimate TOC ()+-C F).
219.9						(366' to 0', 85'sx Class G Certen of Class G certent with an estim	() Pump a +-358 cement sqt (\$5 sec ata TOC G+0' and an estimated BOC
878.9						Class C cement Class C cement Surface Plug Soz-7-53" x 15 C	H BOZ 216 CC-866 CC 811/2020
1,252.0					<b></b>	W SURFACE Plug Boz (365 to 216	1 52 sx Diass G Cement): Fump a +→3 cement with an estimate TOC @++31 EN.
2,457.0						Specte Ferts - Burtace Shoe 38 Cement Flug 3 - 7-518 Antrolus	E 00 51 2020
2.621.1		KIRTLAND (final) FRUITLAND (final)			<b></b>	Pump a +i-100 balanced cemen an estimated TOC @ +i-1,202 a memory are Casino Camert 87	tplug (25 sects of Class Gcement with nd an estimated #OC @ +> 1.300%) 5 50-3 550 50: 912 1976 Cemented W
3,279.9			])			Dement Plug 2 - 7-2/8 " Andulus: ) FRUITLAND, KIRTLAND AND D	ment. TOC © 879 w/75% eff. 1.457.0042 931.00; 51/12020 JC ALAMO FORMATION TOP 8 (2.531
3,438.0		LEWIS (final)				an estimated TOC @ +- 2.457 a	menQ tplug (121 secks of Class Gcement with nd an estimated BOC & +1-2 531) 5,230 00-2,438 00; 5112020; Flug 1
3,558.1						Continued in 7-5/8" Annulus: (2, Dement): Pump 8 + 208 "belanced cemer	433'to 3230', 60 Backs of Class G It plup (70 sacks of Class Gcoment wit
3,560.0				4		AND PICTURED CLIFFS FORM	nd an estimated BOC (2 3 438) ( 438.00-4 035.00; 5 1.2020 NS: HEURPANITO BENTONITE, LEWII ATION TOPS: COVERING 5-1/21 LINE/
4,037.1		CIB 	P; 4,035.00-4,037.00			LAP (4,035 to 3,433, 70 Secks of Pump a +1-597 balanced certer an estimated TOC dt +1-3,438 e	If Class & Cement): tplug (70 secks of Class & Cement with nd an estimated €OC @ +/- 4,0351 11.00 ftKE; 3,850 C0 ftKE
4,085.0			(	3.651	1978 1978		
4,580.1				2000 I 2000 I 2000 I	1000 m	PERFILENCE LOWER 4 625 0	
5,049.9							
5,085.3							
5,142.1		PBTD: 5.142.00: T	agged on 9/11/2007			Dement#rug 5,142 00-5 403 00	5 75-1992 Drd CAY Diug to \$150
5,199.1		- CLIFF HOUSE (final)				PERF-MESAVEACE 5 192 00	
5,257.9		— MENEFEE (final) ———					
5,405.8		Cement Retain	er; 5,403.00-5,406.00		×	SX Class E nest coment.	. 5 23.1 555, Cement Paint Lockaut w 1
5,529.9		. entreenteer (mai)			∭ <b>.</b>	5/22/1995). Demented w/ 215 sx	5.530.00.10/23/1970 2.10/111970:1000 (3.555 by CBL (Mu Haico Lightfollowed by 150 s.x Class C
5,945.9		— MANCOS (final)				Cement Flug 8 190,004 357,00 6357 w 203x Class 8 nest cem	. 5/23-1993, 8 patcement plug from 819
6,357.0 7,107.9						Cemerc Plug: 7.105.00-7.350.00	10:22/1970: Cemented #: 25 5x 0:555
7,107.9		Cement Retain	er; 7.108.00-7.111.00			Cement.	
7,250.0						PERF- DAKOTA, 7 288 00-7 24	
7,275.9							100/10/17/1970
7,390.1		Cement Retain	er; 7,390.00-7,393.00			Dement Plug 7,393 00-7,650 00	10/13/1970: Cemented Daksta format
7,435.9					×	W.75 sx Class A cement	
7,547.0		- DAKOTA (final)			×	Cement 7,850,00-7,748,00,101	2:1970
7,549.9						1. Uner \$1/2 in 4.95 in 3.423 0	0 10KB 7.650 00 10KB

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UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT FARMINGTON DISTRICT OFFICE 6251 COLLEGE BLVD. FARMINGTON, NEW MEXICO 87402

Attachment to notice of Intention to Abandon:

Re: Permanent Abandonment Well: Creek 1

### CONDITIONS OF APPROVAL

- 1. Plugging operations authorized are subject to the attached "General Requirements for Permanent Abandonment of Wells on Federal and Indian Lease."
- 2. Farmington Office is to be notified at least 24 hours before the plugging operations commence (505) 564-7750.
- The well is within the Rosa Mesa SDA and is seasonally restricted starting in December and ending in April. Do not proceed with plugging operations within the restricted season without approval of a wildlife stipulation exception. (form attached with NOI approval)
- 4. Submit electronic copy of the CBL for verification to the following addresses: jkillins@blm.gov, jhoffman@blm.gov and Brandon.Powell@state.nm.us. Based on CBL results inside/outside plugs and volumes will be adjusted accordingly. Please review the General Requirements document to ensure volumes meet required excess inside and outside casing.
  - a. BLM tops are based on the attached geologic report. Plugs will be adjusted based on cement coverage indicated by the CBL. Do not proceed with any plugging operations prior to reviewing CBL results with BLM.

### BLM FLUID MINERALS Geologic Report

#### Date Completed: 2/14/20

Well No.	Creek # 1			Location	1950'	FNL	&	1490	FEL
Lease No.	NMNM0558139			Sec. 4	. 1	<b>F29N</b>			R5W
Operator	Hilcorp			County	Rio A	rriba	State	New Me	exico
Total Depth	7748'	PBTD	5142'	Formation	Blanco N	Aesa Verd	e		
Elevation (GL)	6343'			Elevation (KE	3) 6355' (est.	)			

<b>Geologic Formations</b>	Est. Top	Est. Bottom	Log Top	Log Bottom	Remarks
San Jose Fm			Surface	1220'	Surface/Fresh water sands
Nacimiento Fm			1220'	2120'	Fresh water sands
Ojo Alamo Ss			2120'	2550'	Aquifer (fresh water)
Kirtland Shale			2550'	2950'	
Fruitland Fm			2950'	3155'	Coal/Gas/Possible water
Pictured Cliffs Ss			3155'	3400'	Gas
Lewis Shale			3400'	PBTD	
Chacra			Below CIBP		Probable water or dry
La Ventana Tongue					Probable water or dry
Cliff House Ss					Water/Possible gas
Menefee Fm					Coal/Ss/Water/Possible O&G
Point Lookout Ss					Probable water/Possible O&G
Mancos Shale					Source rock
Gallup					O&G/Water
Dakota					O&G/Water

Remarks:

P & A

- Log analysis of reference well #2 (attached worksheet) indicates the San Jose, Nacimiento, and Ojo Alamo formations contain fresh water ( $\leq$  5,000 ppm TDS).

- Please ensure that the tops of the Pictured Cliffs, Fruitland, and Nacimiento formations as well as the entire Ojo Alamo aquifer, identified in this report, are isolated by proper placement of cement plugs. This will protect the freshwater sands in this well bore.

Reference Well: 1) Hilcorp Creek # 2 2010 FNL, 1120' FEL Sec 4, T29N, R5W GL 6343', KB 6355'

Fm. Tops

Water

Analysis

2) Phillips Pet. SJ 29-5 Unit # 17 1040' FNL, 1180FEL Sec 5, 29N, 5W GL 6429'

Prepared by: Valter Gage



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5.0 All cement plugs spotted across, or above, any exposed zone(s), when; the wellbore is not full of fluid or the fluid level will not remain static, and in the case of lost circulation or partial returns during cement placement, shall be tested by tagging with the work string.

- 5.1 The top of any cement plug verified by tagging must be at or above the depth specified in the approved plan, without regard to any excess.
- 5.2 Testing will not be required for any cement plug that is mechanically contained by use of a bridge plug and/or cement retainer, if casing integrity has been established.
- 5.3 Any cement plug which is the only isolating medium, for a fresh water interval or a zone containing a prospectively valuable deposit of minerals, shall be tested by tagging.
- 5.4 If perforations are required below the surface casing shoe, a 30 minute minimum wait time will be required to determine if gas and/or water flows are present. If flow is present, the well will be shut-in for a minimum of one hour and the pressure recorded. Short or long term venting may be necessary to evacuate trapped gas. If only a water flow occurs with no associated gas, shut well in and record the pressures. Contact the Engineer as it may be necessary to change the cement weight and additives.

6.0 Before setting any cement plugs the hole needs to be rolled. All wells are to be controlled by means of a fluid that is to be of a weight and consistency necessary to stabilize the wellbore. This fluid shall be left in place as filler between all plugs.

- 6.1 Drilling mud may be used as the wellbore fluid in open hole plugging operations.
- 6.2 The wellbore fluid used in cased holes shall be of sufficient weight to balance known pore pressures in all exposed formations.

7.0 A blowout preventer and related equipment (BOPE) shall be installed and tested prior to working in a wellbore with any exposed zone(s); (1) that are over pressured, (2) where the pressures are unknown, or (3) known to contain  $H_2S$ .

8.0 Within 30 days after plugging work is completed, file a Sundry Notice, Subsequent Report of Abandonment (Form 3160-5), five copies, with the Field Manager, Bureau of Land Management, 6251 College Blvd., Suite A, Farmington, NM 87402. The report should show the manner in which the plugging work was carried out, the extent, by depth(s), of cement plugs placed, and the size and location, by depth(s), of casing left in the well. Show <u>date</u> well was plugged.

9.0 All permanently abandoned wells are to be marked with a permanent monument as specified in 43 CFR 3162.6(d). Unless otherwise approved.

10.0 If this well is located in a Specially Designated Area (SDA), compliance with the appropriate seasonal closure requirements will be necessary.

All of the above are minimum requirements. Failure to comply with the above conditions of approval may result in an assessment for noncompliance and/or a Shut-in Order being issued pursuant to 43 CFR 3163.1. You are further advised that any instructions, orders or decisions issued by the Bureau of Land Management are subject to administrative review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4 and 43 CFR 4.700.

(October 2012 Revision)



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