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Revised March 23, 2017

Page 1 of 13

S15MR-200115-0	C-107A 50	85		Revised M	arch 23, 2017
RECEIVED: 1/15/20	REVIEWER:	TYPE: D	OHC APP N	^{vo:} pDM20142644	:14
1:	NEW MEXI - Geolog 220 South St. F ADMINIST	ABOVETHISTABLEFORC CO OIL CONSEL gical & Engineer Francis Drive, Sa IRATIVE APPLIC	RVATION DIV ing Bureau – inta Fe, NM 8	ISION 37505 KLIST	
THIS CHECKLIST F Applicant: <u>Hilcorp E</u> Well Name: <u>San Juan</u>	IS MANDATORY FOR A EGULATIONS WHICH F nergy Compa 27-4 Unit 57	ALL ADMINISTRATIVE APP REQUIRE PROCESSING AT	LICATIONS FOR EXC THE DIVISION LEVEL	EPTIONS TO DIVISION RULES AND IN SANTA FE _OGRID Number: _API: <u>30-039-20383</u> _ Pool Code: _72319	372171
 SUBMIT ACCURATE AN TYPE OF APPLICATIO A. Location – Space 	D COMPLETE IN N: Check those cing Unit – Simu	NFORMATION REC INDICATED BI which apply for ultaneous Dedica	ELOW [A]		LICATION
B. Check one only [1] Comminglin DHC [1] Injection – WFX	/ for [1] or [11] Ig – Storage – N CTB [1] Disposal – Press PMX [1]	Measurement PLC PC sure Increase – Er SWD IPI [OLS OL nhanced Oil F EOR PF	M Recovery PR FOR O	CD ONLY
2) NOTIFICATION REQU A. Offset opera B. Royalty, ove C. Application D. Notification E. Notification F. Surface owr G. For all of the H. No notice re	IRED TO: Check tors or lease ho rriding royalty o requires publish and/or concur and/or concur er above, proof	k those which ap olders owners, revenue hed notice rent approval by rent approval by of notification or	ply. owners SLO BLM publication is	Notice C Applica Content Comple	Complete tion te

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Lee Murphy

Print or Type Name

ature

1-14-2020 Date

(713)209-2400

Phone Number

Imurphy@hilcorp.com

e-mail Address

Received by OCD: 1/15/2020 6:57:18 AM

District I 1625 N. French Drive, Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy, Minerals and Natural Resources Department Form C-107A Revised August 1, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505 APPLICATION TYPE <u>X</u> Single Well Establish Pre-Approved Pools EXISTING WELLBORE <u>X</u> Yes <u>No</u>

APPLICATION FOR DOWNHOLE COMMINGLING

Address

Hilcorp Energy Company Operator

382 Road 3100, Aztec NM 87410

San Juan 27-4 Unit	57	Unit M – Sec. 28 – T27N – R04W	Rio Arriba
Lease	Well No.	Unit Letter-Section-Township-Range	County

OGRID No. <u>372171</u> Property Code <u>319210</u> API No. 30-039-20383 _ Lease Type: <u>X</u>Federal ____State _ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE		
Pool Name	Blanco Mesaverde	BS Mesa Gallup	Basin Dakota		
Pool Code	72319	72920	71599		
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	5700' – 6600'	6835' – 8000'	8254' – 8468'		
Method of Production (Flowing or Artificial Lift)	New Zone	Plunger	Plunger		
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	1152 psi	1314 psi	1643 psi		
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1212 BTU	1178 BTU	1300 BTU		
Producing, Shut-In or New Zone	New Zone	Producing	Producing		
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: N/A Rates:	Date: 11/2019 Rates: 7 bo, 460 mcf, 4 bw	Date: 11/2019 Rates: 15 bo, 662 mcf, 5 bw		
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil Gas Will be supplied upon completion	Oil Gas Will be supplied upon completion	Oil Gas Will be supplied upon completion		

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? If not, have all working, royalty and overriding royalty interest owners been notified by certified mail?	Yes Yes	No <u>X</u> No <u>X</u>
Are all produced fluids from all commingled zones compatible with each other?	Yes_X	No
Will commingling decrease the value of production?	Yes	No <u>X</u>
If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application?	Yes_ <u>X</u>	No
NMOCD Reference Case No. applicable to this well:		

Attachments:

C-102 for each zone to be commingled showing its spacing unit and acreage dedication.

Production curve for each zone for at least one year. (If not available, attach explanation.) For zones with no production history, estimated production rates and supporting data.

Data to support allocation method or formula.

Notification list of working, royalty and overriding royalty interests for uncommon interest cases.

Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

TITLE ____

List of other orders approving downhole commingling within the proposed Pre-Approved Pools List of all operators within the proposed Pre-Approved Pools Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.

Bottomhole pressure data.

1

I hereby certif	y that the	information	above is t	true and comp	lete to the best	of my know	ledge and belief.
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_DATE	011	14	2020

TYPE OR PRINT NAME Michelle Sivadon TELEPHONE NO. (713)209-2400

Reservoir Engineer

E-MAIL ADDRESS <u>msivadon@hilcorp.com</u>

SIGNATURE MICHELLE GRADI

Page 2 of 13

Discussion of Pressures

Based on pressure transient analysis work from other Dakota wells in the basin, direct measurement of static reservoir pressures from producing wells in these tight gas sandstones requires shut-in periods on the order of years, primarily due to low permeability, relatively high total compressibility, and lack of structural or stratigraphic boundaries. Back of the envelope radius of investigation calculations assuming radial flow indicate required shut in periods of 5 to 7 years given the low density of producing wells. As well, we have some multi-week build-ups in the Dakota in other parts of the basin that indicate even longer shut-in times, up to 25 years, to reach boundary-dominated flow. The shut-in wellbore pressure thus is expected to be lower than the far-field, stabilized reservoir pressure, direct measurement of which is practically infeasible. Our observation is that even for areas of high static reservoir pressure, the low permeability of the reservoir rock results in rapid depletion of the near-fracture region, quickly enough that the wells are unable to produce without the aid of a plunger. Given low permeabilities and low wellbore flowing pressures in the Dakota, Gallup, and Mesaverde, loss of reserves due to cross-flow is not an issue during producing or shut-in periods. Given low shut-in bottomhole pressures, commingling the Mesaverde, Gallup and Dakota in this well will not result in shut-in or flowing wellbore pressures in excess of any commingled pool's fracture parting pressure.



SAN JUAN 27-4 UNIT 57 - HISTORICAL DAKOTA PRODUCTION:



SAN JUAN 27-4 UNIT 57 - HISTORICAL GALLUP PRODUCTION:



SAN JUAN 27-4 UNIT 57 - MESAVERDE PRODUCTION FORECAST

The forecast for Mesaverde production has been generated using a typical well production profile of Mesaverde gas production in the surrounding production trend.

SAN JUAN 27-4 UNIT 57 - PRODUCTION ALLOCATION METHOD

Production for the downhole commingle will be allocated using the subtraction method in agreement with the BLM. The base formations are the Dakota and Gallup, and the added formation to be commingled is the Mesaverde. The subtraction method applies an average monthly production forecast to the base formations using historic production. All production from this well exceeding the forecast will be allocated to the new formation. After 3 years production will stabilize. A production average will be gathered during the 4th year and will be utilized to create a fixed, percentage-based allocation. Oil production will be allocated based on average formation yields from offset wells. All documentation will be submitted to the Aztec NMOCD office.

District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico **Energy, Minerals and Natural** Resources **Oil Conservation Division** 1220 S. St Francis Dr. Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

1. API Number	2. Pool Code	3. Pool Name
30-039-20383	72319	BLANCO-MESAVERDE (PRORATED GAS)
4. Property Code	5. Property Name	6. Well No.
319210	SAN JUAN 27 4 UNIT	057
7. OGRID No.	8. Operator Name	9. Elevation
372171	HILCORP ENERGY COMPANY	7207

10. Surface Location UL - Lot E/W Line Section Township Range Lot Idn Feet From N/S Line Feet From County **RIO ARRIBA** 28 27N 04W 990 850 W Μ S

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11. Bottom Hole Location If Different From Surface										
UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County	
12. Dedicated Acres 320.00		13. Joint or Infill		14. Consolidatio	on Code	15. Order No.				

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location(s) or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
E-Signed By: Tammy Jones Title: Operations/Regulatory Technician - Sr. Date: 11/7/2019
SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
Surveyed By: David Kilven
Date of Survey: 8/20/1968
Certificate Number: 1760

Form C-102 August 1, 2011 Permit 274114 O Box 2088, Santa Fe, NM 87504-2088

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OIL CONSERVATION DIVISION PO Box 2088

99 JUN 17 PH 1:22

Form C-102 Revised February 21, 1994 Instructions on back Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

AMENDED	REPORT
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Rece	Pived by OCD: 1/15/2020 6:57:16 Form 3160-5 (June 2015) DE	8 AM UNITED STATE: CPARTMENT OF THE I UREAU OF LAND MANA	S NTERIOR GEMENT			FORM J OMB N(Expires: Ja	Page 11 of 13 APPROVED D. 1004-0137 muary 31, 2018	
	SUNDRY	SUNDRY NOTICES AND REPORTS ON WELLS						
	Do not use thi abandoned we	6. If Indian, Allottee or Tribe Name						
	SUBMIT IN	SUBMIT IN TRIPLICATE - Other instructions on page 2						
	1. Type of Well	ner		8. Well Name and No. SAN JUAN 27-4 UNIT 57				
	2. Name of Operator HILCORP ENERGY COMPAN	Contact: NY E-Mail: tajones@h	ES		9. API Well No. 30-039-20383-0	0-C1		
	3a. Address 1111 TRAVIS STREET HOUSTON, TX 77002		3b. Phone No Ph: 505-32	. (include area code) 4-5185		10. Field and Pool or Exploratory Area BASIN DAKOTA BS MESA		
	4. Location of Well (Footage, Sec., 7	., R., M., or Survey Description	1)			11. County or Parish,	State	
	Sec 28 T27N R4W SWSW 09 36.539660 N Lat, 107.261490	90FSL 0850FWL W Lon				RIO ARRIBA CO	OUNTY, NM	
	12. CHECK THE A	PPROPRIATE BOX(ES)	TO INDICA	TE NATURE OI	F NOTICE,	, REPORT, OR OTH	IER DATA	
	TYPE OF SUBMISSION			TYPE OF	ACTION			
	Notice of Intent	🗖 Acidize	Dee Dee	pen	Product	tion (Start/Resume)	U Water Shut-Off	
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	testing has been completed. Final Al determined that the site is ready for f Hilcorp Energy Company plan tri-mingle with the existing Ga wellbore schematic & gas cap tri-mingling. A closed loop sys surface disturbing activities.	inal inspection. Is to recomplete the subjection lup and Dakota. Attachecture plan. The DHC appli- ture plan. The DHC appli- tem will be utilized. Interi	led only after all ect well in the d is the MV C ication will be m reclamatior	Mesaverde form 102, recomplete submitted and an will be performe	ation and d procedure, proved prio d after	ownhole or to	nd the operator has	
	HOLD C104 FO		DISTRI	18 2019 CT III				
	14. I hereby certify that the foregoing is Co Name (Printed/Typed) TAMMY J	s true and correct. Electronic Submission # For HILCORP E mmitted to AFMSS for pro ONES	491670 verifie NERGY COMF cessing by JO	d by the BLM Wel ANY, sent to the HN HOFFMAN on Title OPERA	I Informatio Farmington 11/14/2019 TIONS/RE(n System (20JH0068SE) GULATORY TECH-S	 SR.	
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	Approved ByJQHN_HOEFMAN Conditions of approval, if any, are attache certify that the applicant holds legal or eq which would entitle the applicant to cond	d. Approval of this notice doe: uitable title to those rights in th	s not warrant or e subject lease		UM ENGIN	EER	Date 11/14/201	
	Title 18 U.S.C. Section 1001 and Title 43 States any false, fictitious or fraudulent	U.S.C. Section 1212, make it a statements or representations as	a crime for any po s to any matter w	erson knowingly and ithin its jurisdiction.	willfully to m	ake to any department or	agency of the United	
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HILCORP ENERGY COMPANY SAN JUAN 27-4 UNIT 57 MESA VERDE RECOMPLETION SUNDRY

Ililoorp Energy Company Current Schematic - Version 3 Well Name: SAN JUAN 37.4 UNIT #57								
003920	ame: 3	SAN JUAN 21-4 UNIT #3 Surface Legal Location 028-027N-004W-M	Field Name BS MESA GALLUP (GA	S)	Route 1412	State-Province NEW MEXICO	Well Configuration Type	
ound Eleva	tilion (fil)	Original KB/RT Elevation (ft) 7.218.00	KB-Groun 11.00	d Distance (11)	KB-Casing Flang	e Distance (11) KB-Tubing Hangar	Distance (1)	
			Original Hole	10/31/2010	3-58-17 PM	1		
MD	TVD		oliginal hole,	Variaal sahar				
(ftKB)	(ftKB)			venicalschem	alic (actual)			
11.2		TUBING: 2 3/8 in; 4.70 lb	/ft; J-55; 11.00 ftKB; 42.40 ftKB				а англов Баранар а Номай на ахон на в а 44 алии	
42.3		PUP JOINT; 2 3/8 in; 4.	70 lb/ft; J-55; 42.40			Surface Casing Cemen	: 11.00-235.00	
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3,157.0								
8,225.0		GRANEROS (final)						
8,253.9								
8,355.5		PUP JOINT; 2 3/8 in; 4.70	Ib/ft; J-55; 8,365.45	300		dakota; 8,254.00-8,468.	00: 9/6/1971	
8,357.5		TUBING: 2 3/8 in: 4.70	Ib/ft; J-55: 8.367.45					
8,383.9			ftKB; 8,398.50 ftKB					
8,398.5		F-NIPPLE; 2 3/8 in; 8,3	10.50 TIND: 8,399.36					
8,399.3		EXPENDABLE CHEC	K; 2 3/8 in; 8,399.35					
8,399.9			TIND; 8,400.00 TIKB					
8,457.8					335	Production Casing Cen 8 517 00: 9/5/1971: cem	ent (plug); 8,482.00	
8,482.0			PBTD; 8,482.00			Known TOC @ 3,600' p	er CBL ran on	
8,496.4						9/30/1999		
8,497.4								
8,515.7						3: Production 1: 4 1/2 in	: 4.00 in: 11.00 fKB	
8,517.1				11 900 80	101010, 50	8 517.00 ftKB		

Hilcorp Energy Company Well Name: SAN JUAN 27-4 UNIT #57

API/UWI 30039203	383	Surface Legal Location F 028-027N-004W-M E	^{eld Name} S MESA GALLUP (GAS	3)	Route 1412	State/Provinc	æ XICO	Well Configuration Type
Ground Elev 7,207.00	ation (ft)	Original KB/RT Elevation (ft) 7,218.00	KB-Ground 11.00	Distance (ft)	KB-Casing Flange	Distance (ft)	KB-Tubing Hange	er Distance (ft)
			Original Hole, 1	/14/2020 12	:49:33 PM			
MD (ft/(D)	TVD			Vertical schema	tic (actual)			
(пкв)	(IIKB)		· · · · · · · · · · · · · · · · · · ·		· · · ·			
- 11.2 -		TUBING; 2 3/8 in; 4.70 lb/ft;	J-55; 11.00 ftKB; 42 40 ftKB				ADMINIKATINI MILA	URAMAMMAN MANAKAMAN MANAKAN MAN
- 42.3 -		PUP JOINT; 2 3/8 in; 4.70	lb/ft; J-55; 42.40			Surface (asing Cemen	t· 11 00-235 00·
- 60.4 -			ftKB; 60.40 ftKB			8/24/1971	; cement with	190 sx circulated to
- 233.9 -						1. Surface	e [.] 9 5/8 in [.] 9 0	0 in [.] 11 00 ftKB [.]
- 234.9 -					AN CARA	235.00 ft	(B	
- 2,275.9 -								
- 3,504.9 -								
- 3,600.1 -								
- 3.699.1 -		— KIRTI AND (final)						
- 3,831.0 -		FRUITLAND (final)				Intermedi	ate Casing Ce	ement; 3,623.00-
- 4,057.1 -		DICTUDED CLIEES (final)	55.60 40 ft/D			4,361.00;	8/30/1971; ce	ement with 125 sx toc
- 4,284.1 -			8,365.45 ftKB			Leans at 70		
- 4,359.9 -								
- 4,360.9 -						_2; Interme 4.361.00	ediate1; 7 in; 6 ftKB	3.46 in; 11.00 ftKB;
- 4,557.1 -		-HUERFANITO BENTONITE	(final) ———			,		
- 5,018.0 -		— CHACRA (final) ————						
- 5,738.8 -		— CLIFF HOUSE (final) ———				Productio	n Casing Cerr	nent; 3,600.00-
- 5,895.0 -		MENEFEE (final)				8,517.00;	9/5/1971; cen	nent with 360 sx.
- 6,268.0 -						9/30/1999))	
6 724 1			@ 5700 -6600					
6,835.0 -								
- 7,215.9 -		~~GALLUP~(final)~~~~~~		~~ <mark>.</mark>	- Anna	upper gal	lup; 6,835.00-	7,365.00; 10/11/1999
- 7,365.2 -								
- 7,580.1 -							7 500 00 0	000 00 10/11/000
- 7,964.2 -						-lower gall	up; 7,580.00-8	3,000.00; 10/11/1999
- 8,000.0 -								
- 8,167.0 -		GREENHORN (final)						
- 8,226.0 -		— GRANEROS (final) ———						
- 8,253.9 -							054.00.0.400	00.0/0/4074
- 8,365.5 -		PUP JOINT; 2 3/8 in 8,365.45 ftK	; 4.70 lb/ft; J-55; B; 8,367.45 ftKB			-dakota; 8	,254.00-8,468	.00; 9/6/1971
- 8,367.5 -		TUBING; 2 3/8 in; 4.70 lb/i	t; J-55; 8,367.45					
8 308 A		цttк F-NIPPLE; 2 3/8 in: 8.398.5	B; 8,398.50 ftKB 0 ftKB; 8,399.35					
- 8,399.3			ftKB					
- 8,399.9 -		EXPENDABLE CHECK; 2	3/8 in; 8,399.35 B; 8,400.00 ftKB					
- 8,467.8 -			·]			Productio	n Casing Cerr	nent (plug); 8,482.00-
- 8,482.0 -			PBTD; 8,482.00			8,517.00;	9/5/1971; cen	nent with 360 sx.
- 8,496.4 -						9/30/1999	лс <u>ш</u> 3,600°р)	
- 8,497.4 -								
- 8,515.7 -						2. Due du	tion 1 + 4 10 -	4 00 in 11 00 ft/D
- 8,517.1 -						_3; Produc 8,517.00	tion1; 4 1/2 in ftKB	; 4.00 in; 11.00 ftKB;
	loton co	n						

Proposed Schematic