

DATE IN <u>7/23/15</u>	SUSPENSE	ENGINEER <u>MAM</u>	LOGGED IN <u>7/24/15</u>	TYPE <u>DHC</u>	APP NO. <u>PSA6152052</u> <del>336</del>
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



### ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

DHC 4774

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD

operated by Conoco Phillips  
well: Britt 6 #51, 52, 53, 54, 55

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM

Pool: Weir; Blinex

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR

+3  
#: 63780

[D] Other: Specify \_\_\_\_\_

+3

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] 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.

Ashley Bergen Ashley Bergen Regulatory Specialist \_\_\_\_\_  
 Print or Type Name Signature Title Date

ashley.bergen@conocophillips.com  
 e-mail Address



District I  
1625 N. French Drive, Hobbs, NM 88240

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-107A  
Revised August 1, 2011

District II  
811 S. First St., Artesia, NM 88210

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

APPLICATION TYPE  
 Single Well  
 Establish Pre-Approved Pools  
EXISTING WELLBORE  
 Yes  No

District III  
1600 Rio Brazos Road, Artec, NM 87410

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

APPLICATION FOR DOWNHOLE COMMINGLING

ConocoPhillips Company Operator P.O. Box 51810 Midland, TX 79710 Address

Lease Well No. Unit Letter-Section-Township-Range County

OGRID No. 217817 Property Code 31365 API No. 30-025- Lease Type:  Federal  State  Fee

Table with 4 columns: DATA ELEMENT, UPPER ZONE, INTERMEDIATE ZONE, LOWER ZONE. Rows include Pool Name, Pool Code, Top and Bottom of Pay Section, Method of Production, Bottomhole Pressure, Oil Gravity or Gas BTU, Producing, Shut-In or New Zone, Date and Oil/Gas/Water Rates of Last Production, and Fixed Allocation Percentage.

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes  No 
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes  No 
Are all produced fluids from all commingled zones compatible with each other? Yes  No 
Will commingling decrease the value of production? Yes  No 
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  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.

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

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210  
Phone (505) 748-1283 Fax: (505) 748-0720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone (505) 334-6176 Fax: (505) 334-0170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3460 Fax: (505) 476-3462

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-102  
Revised August 1, 2011

Submit one copy to appropriate  
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-025	Pool Code 57190	Pool Name Skaggs; Glorieta
Property Code 31365	Property Name BRITT B	Well Number 51
OGRID No. 217817	Operator Name CONOCO PHILLIPS	Elevation 3569'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	10	20 S	37 E		1230	SOUTH	2515	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	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

<p><b>SURFACE LOCATION</b>          Lat - N 32°35'01.46"          Long - W 103°14'20.18"          NMSPC - N 577828.881          E 878428.424          (NAD-83)          Lat - N 32°35'01.02"          Long - W 103°14'18.46"          NMSPC - N 577767.247          E 837245.696          (NAD-27)</p>		<p><b>OPERATOR CERTIFICATION</b>  <i>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 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.</i></p> <p><i>Ashley Bergen</i>          Signature _____ Date _____</p> <p>Ashley Bergen          Printed Name          ashley.bergen@cop.com          Email Address</p>
		<p><b>SURVEYOR CERTIFICATION</b>  <i>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.</i></p> <p>NOV 2011          Date Surveyed          Signature &amp; Seal of Professional Surveyor            Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS 25431</p>

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
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DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
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DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3480 Fax: (505) 476-3482

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-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-025	Pool Code 63780; 47090; 57000	Pool Name Weir Blinebry; Monument Tubb; Skaggs Drinkard
Property Code 31365	Property Name BRITT B	Well Number 51
OGRID No. 217817	Operator Name CONOCO PHILLIPS	Elevation 3569'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	10	20 S	37 E		1230	SOUTH	2515	EAST	LEA

Bottom Hole Location If Different From Surface

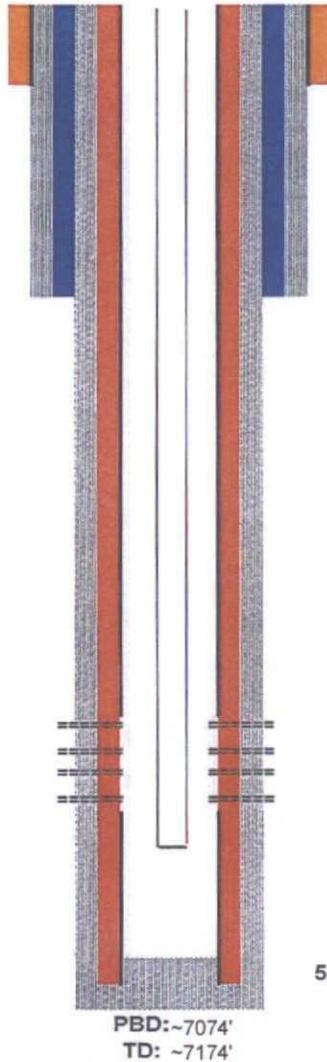
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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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

<p><b>SURFACE LOCATION</b>          Lat - N 32°35'01.46"          Long - W 103°14'20.18"          NMSPCE - N 577828.881          E 878428.424          (NAD-83)          Lat - N 32°35'01.02"          Long - W 103°14'18.46"          NMSPCE - N 577767.247          E 837245.696          (NAD-27)</p>		<p><b>OPERATOR CERTIFICATION</b>  <i>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 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.</i></p> <p><i>Ashley Bergen</i>          Signature Date</p> <p>Ashley Bergen          Printed Name          ashley.bergen@cop.com          Email Address</p>
		<p><b>SURVEYOR CERTIFICATION</b>  <i>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.</i></p> <p>NOVEMBER 10 2011          Date Surveyed          Signature &amp; Seal of Professional Surveyor            Certificate No. Gary L. Jones 7977          BASIN SURVEYS 25431</p>

# Britt B 51 Proposed Well Schematic: Production Well



8-5/8" , 24# J-55 @ 1400. Cmt to surface

Surface: C640-365-168

Downhole:

Tbg: 2-7/8", 6.5#, L-80: 7000 ft.

TAC: 2-7/8" x 5-1/2", 17# @ 5150

Rods:

1" Norris D90: surface - 2150

7/8" Norris D90: 2150 - 4400

3/4" Norris D90: 4400-6750

1-1/2" Flexbar C Sinker Bars w/ guides: 6750-7000

Pump: 1-3/4" RHBC (24 ft.) w/ 1-1/4" strainer nipple (1 ft.)

### Completion Interval

Skaggs Glorieta ~5180'-5314' TVD

Weir Blinebry ~5647'-6359' TVD

Monument Tubb ~6359'-6662' TVD

Skaggs Drinkard ~6662'-6974' TVD

5-1/2", 17#, L-80 @ 7200. Cmt to surface

PBD: ~7074'

TD: ~7174'

# **Skaggs-Glorieta Pool Commingling with Weir-Blinebry (or Weir-Blinebry East), Monument-Tubb, and Skaggs-Drinkard Pools**

## **Britt-B Acreage Field Study and Preliminary Results**

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### **Summary**

ConocoPhillips is proposing to commingle the Skaggs-Glorieta pool with the three pre-approved pools, i.e., Weir-Blinebry (or Weir-Blinebry East) pool, Monument-Tubb pool, and Skaggs-Drinkard pool as a part of ConocoPhillips' Blinebry, Tubb, and Drinkard (BTD) development program in Sections 10, 11, and 15, T20S, R37E, Lea County, New Mexico. The working, net revenue, and royalty interests are the same for all pools within the lease being proposed for this commingle. The fluids from all zones are compatible. The allocation will be determined through down-hole production allocation tests after completion.

### **Purpose**

ConocoPhillips requests to commingle the Skaggs-Glorieta ("Glorieta") with the three pre-approved pools, i.e., Weir-Blinebry (or Weir-Blinebry East) pool, Monument-Tubb pool, and Skaggs-Drinkard pools, in SW/4 NW/4 and S1/2 Section 10, W1/2 SW1/4 Section 11, and W/2 and W/2 E/2 Section 15, T20S-R37E in order to access reserves that would otherwise be stranded. Development of the Blinebry, Tubb, and Drinkard (BTD) is not competitively economic as initial production rates and recoveries are low. The commingling of these pools is expected to enhance production and boost ultimate recovery from the field. This will result in increased revenue for royalty interests and lease holder.

With commingling, the total recoverable resource in COP's Britt-B lease is estimated to be ~5.8 MMBO and 11.3 BCFG or an incremental 165 MBO and 324 MMCF per well, for up to 35 potential 40-acre and 20-acre spaced wells in the Britt-B lease. Our 2017 development plan targeting the Glorieta plus BTD includes the Britt B 51, Britt B 52, Britt B 53, Britt B 54, and Britt B 55 proposed wells.

### **History**

ConocoPhillips operates the Britt-B lease in Sections 10, 11, and 15, T20S R37E. This lease has produced from the BTD since the 1960's. Historically, the BTD has been successful in this area with high Initial Production (IP) and long production lives. However, as reservoir pressure declines and the reserves move into lower reservoir quality areas, the BTD pool is becoming uncompetitive and uneconomic. A review of a nearby drilling program meant to produce the BTD pools suggests that the production from the two zones (Glorieta and BTD) needs to be commingled to have more favorable economics, especially in the current economic environment.

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\* The same formation, Blinebry is called by Weir-Blinebry pool or Weir-Blinebry East pool, depending only on surface location.

The Glorieta started to be commingled with the BTD as early as 1979 in the Britt-B #26 (See Figure 1). It showed some uplift potential. For example, the Glorieta in the Britt-B #13 was discovered to have potential to produce at high rates. The high rate was again repeated in 1998 in the Britt-B #34, with exclusive Glorieta production. The Glorieta, however, hasn't shown consistent results and is considered uneconomic by itself. Therefore, in conjunction with modern completion methods, the commingling of the Glorieta and Blinebry, Tubb, and Drinkard pools in the ConocoPhillips Britt-B lease will allow both of these reserves to be produced economically and at low risk. If this pilot project is successful it will prove the viability of further downhole commingling in future wells. This would also allow recompletions into the Glorieta to be commingled with historical BTD production.

## **Reservoir Details**

The Glorieta and BTD are substantially similar in characteristics to make them compatible for downhole commingling. Oil gravity comparisons between the Glorieta, Blinebry, Tubb, and Drinkard reservoirs indicate that the type of oil found in these reservoirs is similar; approximately 39 degrees API according to the Britt-B #34 and SEMU #174 production analyses.

The upper Blinebry, Tubb, and Drinkard are the better reservoir quality areas of the Yeso group formations. The Drinkard tends to be more water saturated than the other formations, while the Tubb tends to be gassier than the other two. The reservoir productive quality is striated with low permeability areas. There is a lot of gross interval to net pay in the Yeso group reservoirs (see Figure 2).

The Glorieta is a higher porosity-permeability reservoir, usually with good oil saturation (see Figure 3). There is a risk of water production due to its proximity with the water saturated Paddock formation below it. A cross section is included in Figure 4.

The pore pressure gradients for the Glorieta and BTD are expected to be similar (~0.40 psi/ft). The BTD is expected to be normally pressured to slightly under-pressured due to historical production. If there is cross-flow between the two zones due to a high fluid level or over-pressured zone, it is expected that production will be recovered once the fluid level is pumped back down or the pressure stabilizes between the two zones.

Production is expected to vary widely among the layers. There will be a total of four layers spreading approximately 1,800 feet apart. The majority of the water is expected to come from the lowest and highest zones (Drinkard and Glorieta). The majority of the gas is expected to come from the middle two layers (Blinebry and Tubb). This, however, is speculation based on a study done in the Warren Unit. The production test and production profile will be useful in confirming this along with the Glorieta production. Appendix A includes the economics for BTD production which is requested to be kept confidential.

## Allocation Method

The production allocation method for all zones will be based on a cumulative zone production test (subtraction method) carried out post completion. This will be done the following way:

The Blinebry-Tubb-Drinkard zone will be completed and production tested for a minimum of 45 days. Afterwards, the Blinebry-Tubb-Drinkard will be isolated by a retrievable bridge plug positioned above the Blinebry completion. The Glorieta will be completed and production tested for a minimum 45 days. Afterwards, following the removal of the retrievable bridge plug, the well will be placed on production from the Glorieta & Blinebry-Tubb-Drinkard with production allocation (oil, gas & water) based on:

Glorieta Allocation:  $\text{Glorieta well test volumes} / (\text{Glorieta well test volumes} + \text{Blinebry-Tubb-Drinkard well test volumes})$

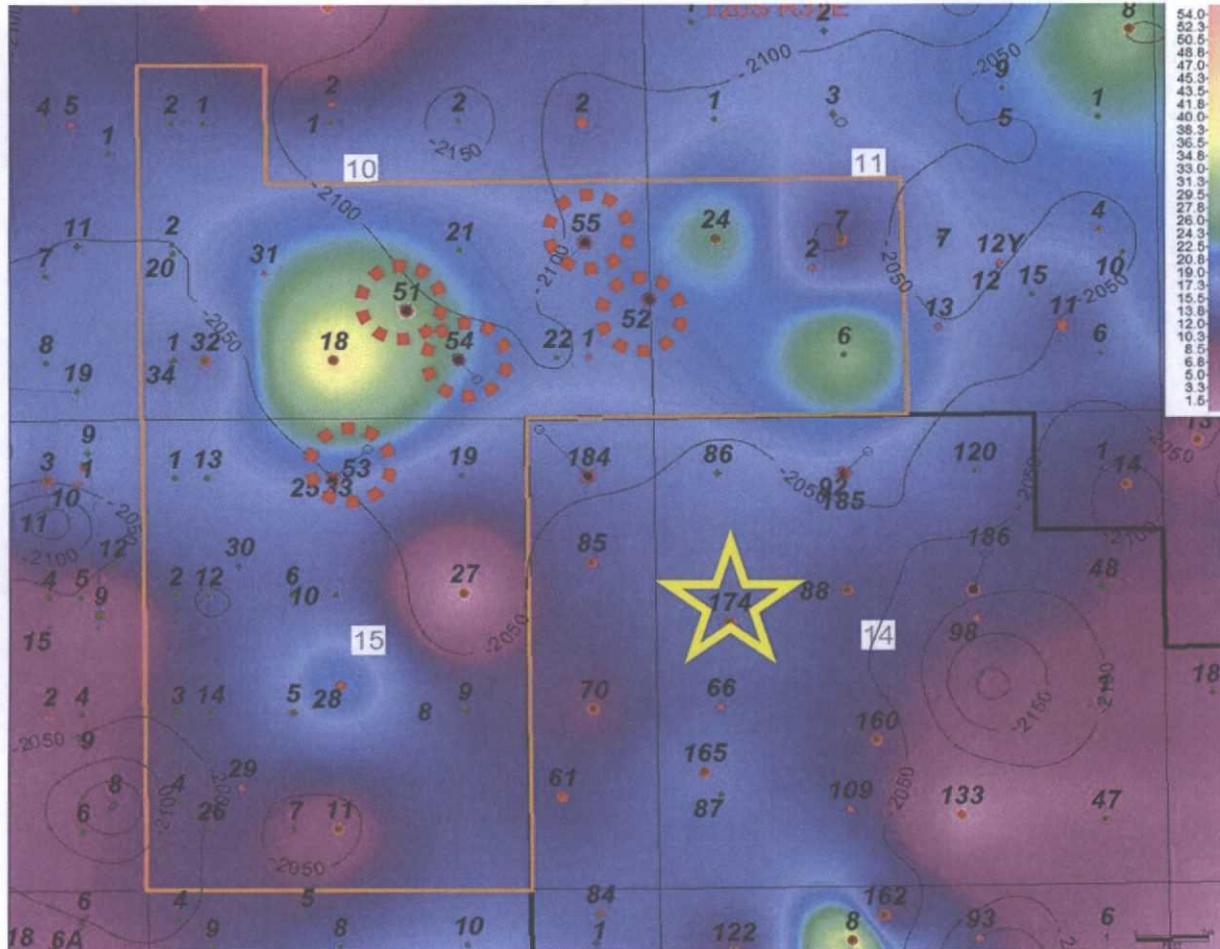
Blinebry-Tubb-Drinkard Allocation:  $\text{Drinkard well test volumes} / (\text{Glorieta well test volumes} + \text{Blinebry-Tubb-Drinkard well test volumes})$

Our proposal includes production tests on the first two or three wells, depending on initial results.

Based on our review of historical production, the expected allocation for new drill wells is 36% from the Glorieta and 64% from the BTD, according to the estimated first year production average on BOE basis.



**Figure 2:** Blinebry/Tubb/Drinkard reservoir quality (SoPhiH) map. The wells with red circles are the proposed Britt-B wells, and the one with yellow Star is SEMU 174 type-well.



**Figure 3:** Glorieta reservoir quality (SoPhiH) map. The wells with red circles are the proposed Britt-B wells.

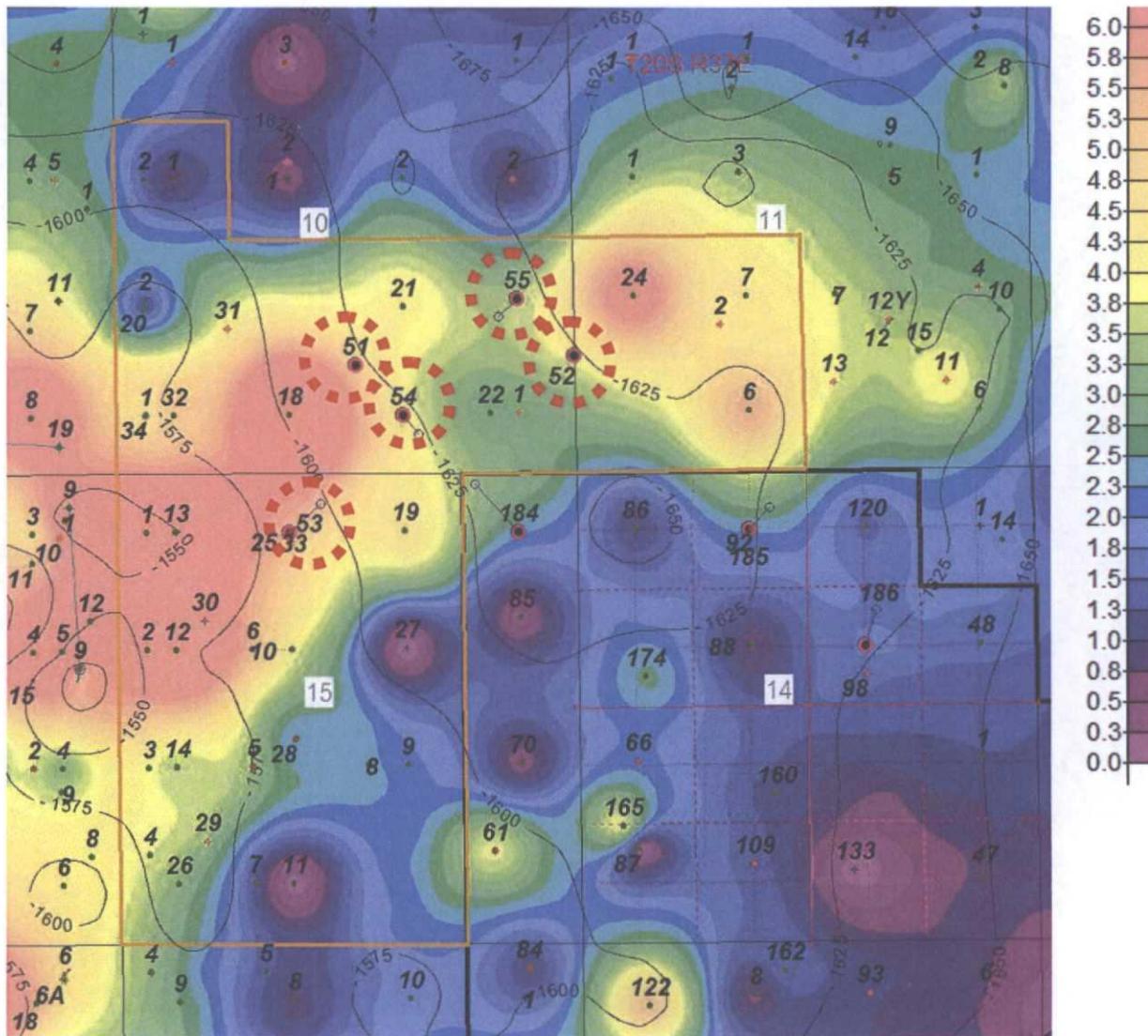
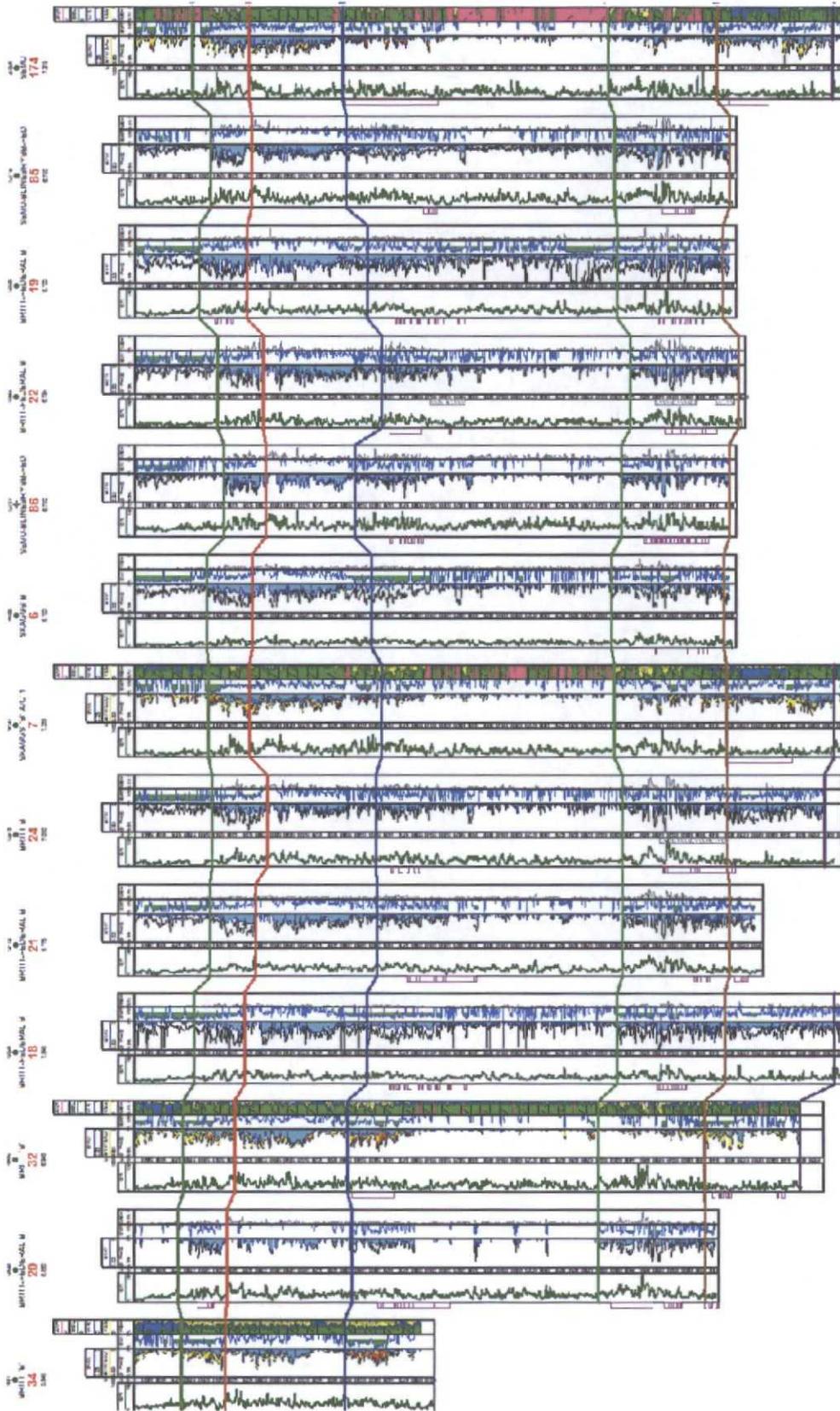


Figure 4: Glorieta, Paddock, Blinebry, Tubb, Drinkard cross-section



# Appendix A

Table 1: Blinebry/Tubb/Drinkard standalone economics

Inputs				Outputs				
Start Date	1/1/2015	Capital	\$1,800	Discount Rate	Pretax NPV [M\$]	After Tax NPV [M\$]	Pretax IRR	After Tax IRR
Working Interest	50%	Tax Rate	35%	0%	(622)	(937)	-9%	-15%
Net Rev Interest	43.8%	Gas Tax	7.5%	8%	(803)	(1,015)		
Oil Price (\$/bbl)	\$50	Oil Tax	4.6%	10%	(827)	(1,021)		
Gas Price (\$/mcf)	\$3.00	Ad Val Rate	2%	12%	(845)	(1,024)		
OpEx (\$/bbl)	\$7			15%	(864)	(1,025)		

	Gross Production		Net Production		Price		Revenue
	Oil MBbls	Gas MMcf	Oil MBbls	Gas MMcf	Oil \$/bbl	Gas \$/Mcf	\$M Total
2015	11.6	66.4	5.1	29.0	50.0	3.0	340
2016	8.8	50.4	3.8	22.1	50.0	3.0	258
2017	5.9	34.1	2.6	14.9	50.0	3.0	175
2018	4.4	25.0	1.9	10.9	50.0	3.0	128
2019	3.4	19.3	1.5	8.5	50.0	3.0	99
2020	2.7	15.5	1.2	6.8	50.0	3.0	80
2021	2.2	12.8	1.0	5.6	50.0	3.0	66
2022	1.9	10.8	0.8	4.7	50.0	3.0	55
2023	1.6	9.2	0.7	4.0	50.0	3.0	47
2024	1.4	8.0	0.6	3.5	50.0	3.0	41
2025	1.2	7.0	0.5	3.1	50.0	3.0	36
2026	1.1	6.3	0.5	2.7	50.0	3.0	32
2027	1.0	5.6	0.4	2.5	50.0	3.0	29
2028	0.9	5.1	0.4	2.2	50.0	3.0	26
2029	0.8	4.6	0.4	2.0	50.0	3.0	24
Total	54.3	311.4	23.7	136.2			1,596

	Cum Cash Flow									
	Prod Tax [M\$]	Ad Val Tax [M\$]	Operating Costs [M\$]	Operating CF [M\$]	CapEx	Pre Tax CF [M\$]	Taxes [M\$]	After Tax CF [M\$]	Pre Tax [M\$]	After Tax [M\$]
2015	18	7	36	279	1,800	-1,521	0	-1521	-1521	-1521
2016	14	5	27	212	0	212	74	138	-1309	-1383
2017	9	3	19	143	0	143	50	93	-1166	-1290
2018	7	3	14	105	0	105	37	68	-1061	-1222
2019	5	2	11	81	0	81	28	53	-979	-1169
2020	4	2	8	65	0	65	23	42	-914	-1126
2021	4	1	7	54	0	54	19	35	-860	-1091
2022	3	1	6	45	0	45	16	29	-815	-1062
2023	3	1	5	39	0	39	14	25	-776	-1037
2024	2	1	4	34	0	34	12	22	-742	-1015
2025	2	1	4	30	0	30	10	19	-713	-996
2026	2	1	3	26	0	26	9	17	-686	-978
2027	2	1	3	24	0	24	8	15	-663	-963
2028	1	1	3	21	0	21	7	14	-641	-949
2029	1	0	2	19	0	19	7	13	-622	-937
Total	85	32	170	1,309	1,800	-491	361	-851		

## **Preliminary Field Study Results**

The last drilling program in this part of SEMU that targeted the Blinebry, Tubb, and Drinkard was generally uneconomic, with the exception being SEMU 174 that had an IP of 48 BOPD and 273 MCFD. This will add an incremental 55 MBO and 310 MMCF per well. The gas curve is based on a GOR of ~5.7 MCF/STB (see Figures 5 and 6).

SEMU 174 had the best reservoir quality compared to the other wells in its program, as shown by logs. The Britt-B area tends to be of higher or comparable reservoir quality to SEMU 174. For this reason in conjunction of a modern completion design, the Blinebry/Tubb/Drinkard type-curve was chosen to be based on the performance of SEMU 174. The 40-acre Original Oil In Place (OOIP) for the Blinebry/Tubb/Drinkard in the Britt-B lease was calculated to be 3.3 MBO.

## **Justification for Commingle Proposal**

At current commodity prices, the estimated production (type curve) from the BTD in these wells is not sufficient to pay off the costs of a drilling program to this depth. With some successes being shown in the offsetting wells, in regards to producing the Glorieta and downhole commingling it with the Blinebry/Tubb/Drinkard, an uplift of 45 BOPD and 6 MCFD in the IP rate is expected (Figure 7). This will add an incremental 110 MBO and 14 MMCF per well.

The production curve is based on the production from wells inside and immediately surrounding the Britt-B lease (see Figure 1). The oil curve is based on an average of the IP rates and the decline rates of the wells. The gas curve is based on a GOR of 0.13 MCF/STB taken from the Britt-B #34, the only Glorieta only producer in the lease.

The reservoir quality for the Glorieta in the Britt-B area is comparable to the offsetting Glorieta producers. The P50<sup>‡</sup> 40-acre OOIP for the Glorieta producers was found to be ~1.1MMBO; there is confidence that the Glorieta will be a major production contributor. For convenience we include the BLM Downhole Commingle Worksheet.

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<sup>‡</sup> P50 refers to an estimate with 50% certainty.

**Supporting Details**

**Figure 5:** Weir-Blinebry/Weir-Blinebry East/Monument-Tubb/Skaggs-Drinkard type curve

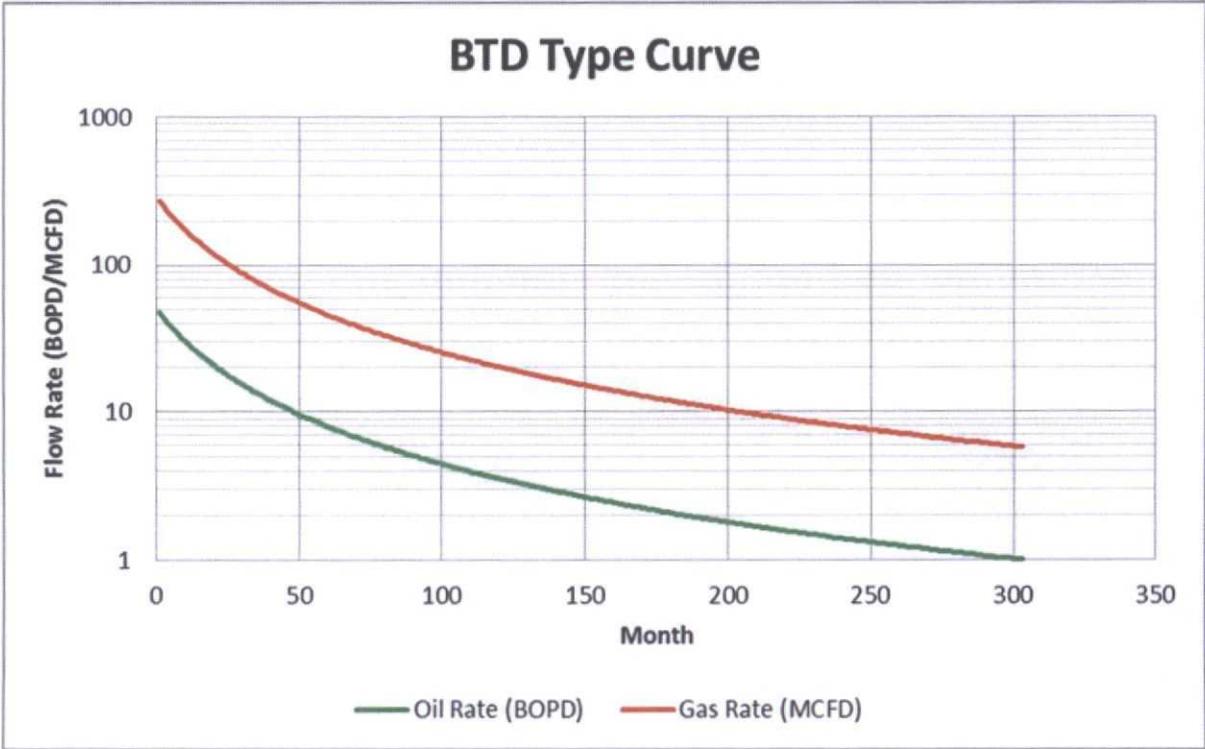


Figure 6: Type curve with SEMU 174 actual well test data

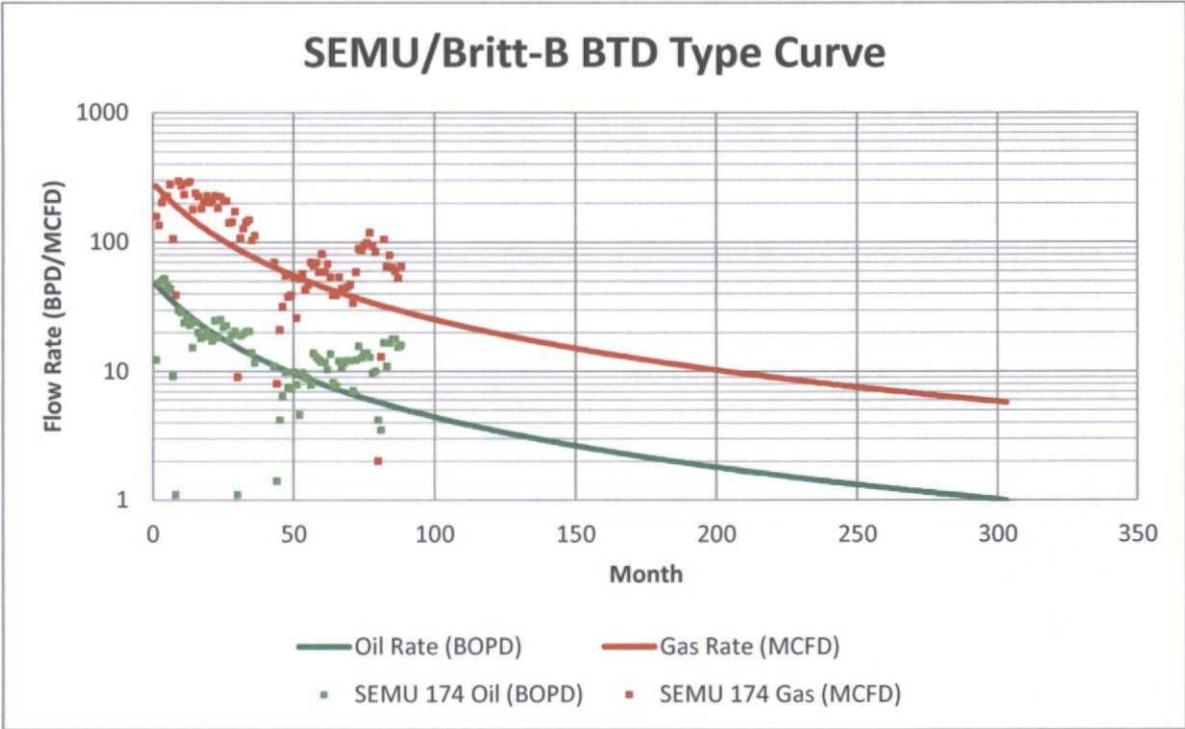


Figure 7: Skaggs-Glorieta type curve.

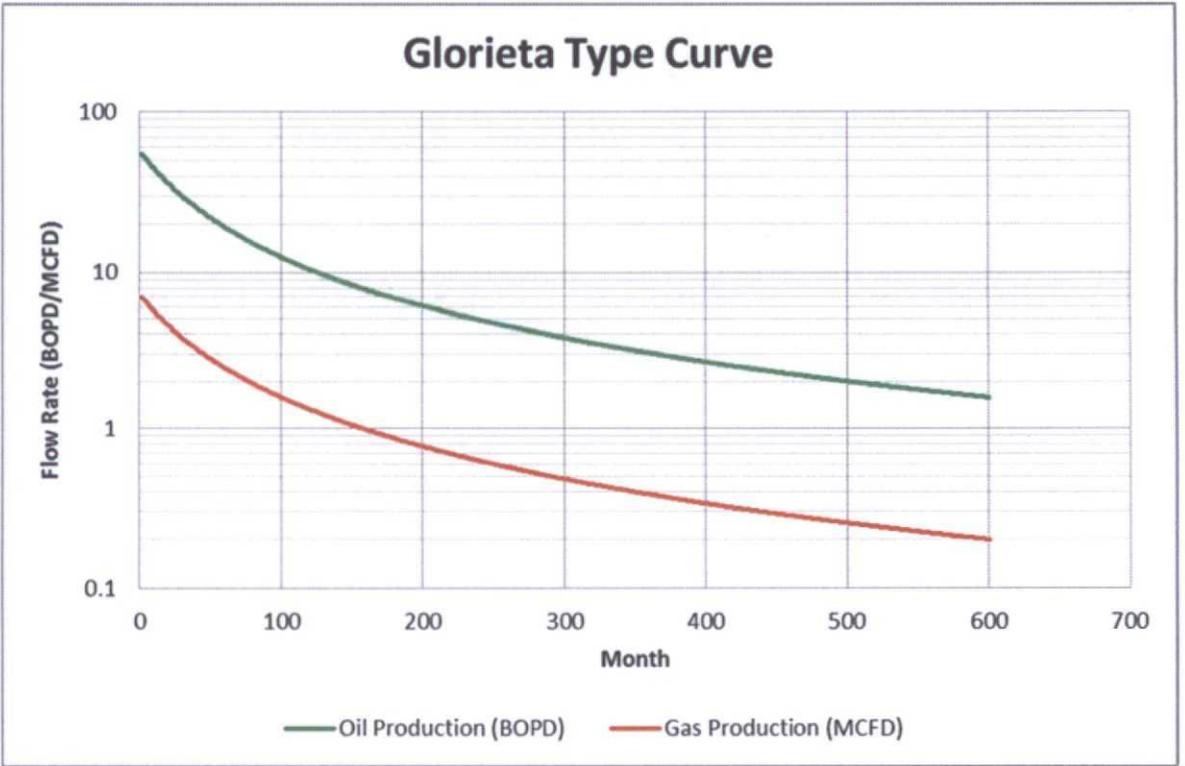
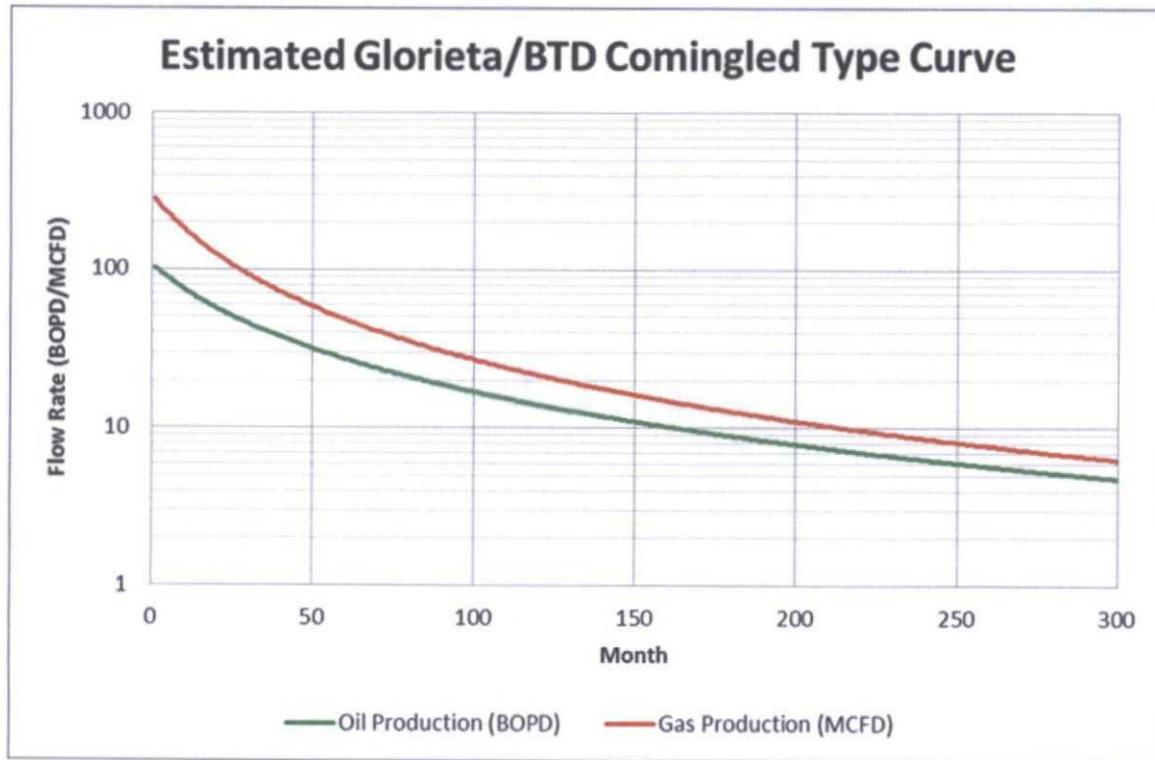


Figure 8: Type curve of Glorieta and BTD commingling





# LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For:	ConocoPhillips	Sample:	Meter Run
	Attention: Vernon Mackey	Identification:	Britt B #34
	1410 W. County Road	Company:	ConocoPhillips
	Hobbs, New Mexico 88240	Lease:	
		Plant:	

Sample Data:	Date Sampled	2/18/2014	12:52 PM		
	Analysis Date	2/19/2014			
	Pressure-PSIA	35		Sampled by:	Logan McIlroy
	Sample Temp F			Analysis by:	Vicki McDaniel
	Atmos Temp F	83			

H2S = 4,500 PPM

### Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S	0.450	
Nitrogen	N2	2.639	
Carbon Dioxide	CO2	1.329	
Methane	C1	74.780	
Ethane	C2	10.706	2.856
Propane	C3	5.398	1.483
i-Butane	IC4	0.779	0.254
n-Butane	NC4	1.919	0.604
i-Pentane	IC5	0.583	0.213
n-Pentane	NC5	0.628	0.227
Hexanes Plus	C6+	0.789	0.342
		100.000	5.978

### REAL BTU/CU.FT.

At 14.65 DRY	1261.3
At 14.65 WET	1239.3
At 14.696 DRY	1265.2
At 14.696 WET	1243.7
At 14.73 DRY	1268.1
At 14.73 Wet	1246.3

### Specific Gravity

Calculated 0.7683

Molecular Weight 22.2509



# LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

## ASTM DISTILLATION

ConocoPhillips  
Attention: Vernon Mackey  
1410 W. County Road  
Hobbs, New Mexico 88240

Sampled By: Logan McIlroy  
Sample Date: 2/18/14

Sample ID: Britt B #34

<u>Percent Distilled</u>	<u>Temperature</u>		
IBP	125		
5	165		
10	202		
20	261	% Recovered =	93.0
30	327	% Residue =	4.0
40	435	% Loss =	3.0
50	515		
60	610		
70	693		
80	738		
90	761		
EP	765		

<u>Total Sulfur</u>	<u>API Gravity</u>	<u>Specific Gravity</u>
0.6484 wt. %	39.3	0.8284



# LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For:	ConocoPhillips	Sample:	Casing
	Attention: Vernon Mackey	Identification:	SEMU 174
	1410 W. County Road	Company:	ConocoPhillips
	Hobbs, New Mexico 88240	Lease:	
		Plant:	

Sample Data:	Date Sampled	2/18/2014	11:58 AM		
	Analysis Date	2/19/2014			
	Pressure-PSIA			Sampled by:	Logan McIlroy
	Sample Temp F			Analysis by:	Vicki McDaniel
	Atmos Temp F	83			

H2S = 4,400 PPM

### Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S	0.440	
Nitrogen	N2	2.604	
Carbon Dioxide	CO2	0.618	
Methane	C1	75.574	
Ethane	C2	9.514	2.538
Propane	C3	5.478	1.505
i-Butane	IC4	0.754	0.246
n-Butane	NC4	2.143	0.674
i-Pentane	IC5	0.602	0.220
n-Pentane	NC5	0.815	0.295
Hexanes Plus	C6+	<u>1.458</u>	<u>0.631</u>
		100.000	6.108

REAL BTU/CU.FT.		Specific Gravity	
At 14.65 DRY	1299.6	Calculated	0.7809
At 14.65 WET	1276.9		
At 14.696 DRY	1303.6		
At 14.696 WET	1281.4	Molecular Weight	22.6163
At 14.73 DRY	1306.6		
At 14.73 Wet	1284.0		



# LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com  
575.397.3713 2609 W Marland Hobbs NM 88240

## ASTM DISTILLATION

ConocoPhillips  
Attention: Vernon Mackey  
1410 W. County Road  
Hobbs, New Mexico 88240

Sampled By: Logan McIlroy  
Sample Date: 2/18/14

Sample ID: SEMU 174

<u>Percent Distilled</u>	<u>Temperature</u>		
IBP	130		
5	180		
10	215		
20	280	%Recovered =	94.0
30	345	% Residue =	4.0
40	445	% Loss =	2.0
50	536		
60	617		
70	680		
80	703		
90	738		
EP	741		

<u>Total Sulfur</u>	<u>API Gravity</u>	<u>Specific Gravity</u>
0.3688 wt. %	39.4	0.8279

# NALCO Champion Water Analysis Report

An Ecolab Company

Attention: [Anthony.baeza@champ-tech.com](mailto:Anthony.baeza@champ-tech.com)

Customer: **ConocoPhillips (1500390)**

Location Code: **23130**

Region: **Eunice Field**

Sample ID: **AB42153**

Location: **Britt B Lease**

Login Batch: **2014-02-24\_MFA\_SWICPW**

System: **Production System**

Collection Date: **02/19/2014**

Equipment: **Well 34**

Receive Date: **02/24/2014**

Lab ID: **ABU-1031**

Report Date: **03/03/2014**

Sample Point: **Well Head Valve Up Stream of Choke**

Analyses	Result	Unit
Dissolved CO2	50	mg/L
Dissolved H2S	188.1	mg/L
pH	8	
Pressure	70	psi
Temperature	83	° F

Analyses	Result	Unit
Bicarbonate	634.4	mg/L
Conductivity	130163	µS - cm3
Ionic Strength	1.47	
Resistivity	0.077	ohms - m
Specific Gravity	1.055	
Total Dissolved Solids	83304.07	mg/L

Cations	Result	Unit
Iron	0.038	mg/L
Manganese	0.013	mg/L
Barium	0.056	mg/L
Strontium	66.68	mg/L
Calcium	2657	mg/L
Magnesium	804.1	mg/L
Sodium	28272.82	mg/L

Anions	Result	Unit
CHLORIDE	48988.96	mg/L
SULFATE	1880	mg/L

Scale Type	Result
Anhydrite CaSO4 SI	-0.52
Barite BaSO4 SI	-0.53
Calcite CaCO3 PTB	263.3
Calcite CaCO3 SI	1.17
Celestite SrSO4 SI	-0.07
Gypsum CaSO4 SI	-0.35
Hemihydrate CaSO4 SI	-0.35
Saturation Index Calculation (Tomson-Oddo Model)	

Comments:

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# NALCO Champion Water Analysis Report

An Ecolab Company

Attention: Anthony.baeza@champ-tech.com

Customer: ConocoPhillips (1500390)

Location Code: 23299

Region: Eunice Field

Sample ID: AB42154

Location: SEMU Tubb Lease

Login Batch: 2014-02-24\_MFA\_SWICPW

System: Production System

Collection Date: 02/19/2014

Equipment: Well 174

Receive Date: 02/24/2014

Lab ID: ABU-1031

Report Date: 03/03/2014

Sample Point: Well Head Valve Up Stream of Choke

Analyses	Result	Unit
Dissolved CO2	50	mg/L
Dissolved H2S	119.7	mg/L
pH	8	
Pressure	100	psi
Temperature	81	° F

Analyses	Result	Unit
Bicarbonate	475.8	mg/L
Conductivity	187614	µS - cm3
Ionic Strength	2.13	
Resistivity	0.053	ohms - m
Specific Gravity	1.082	
Total Dissolved Solids	120073.1	mg/L

Cations	Result	Unit
Iron	0.082	mg/L
Manganese	0.044	mg/L
Barium	0.078	mg/L
Strontium	95.58	mg/L
Calcium	3793	mg/L
Magnesium	1040	mg/L
Sodium	41169.79	mg/L

Anions	Result	Unit
CHLORIDE	71983.77	mg/L
SULFATE	1515	mg/L

Scale Type	Result
Anhydrite CaSO4 SI	-0.46
Barite BaSO4 SI	-0.55
Calcite CaCO3 PTB	195.3
Calcite CaCO3 SI	1.12
Celestite SrSO4 SI	-0.05
Gypsum CaSO4 SI	-0.34
Hemihydrate CaSO4 SI	-0.38
Saturation Index Calculation (Tomson-Oddo Model)	

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# NALCO Champion Water Analysis Report

An Ecolab Company

Attention: Anthony.baeza@champ-tech.com

Customer: ConocoPhillips (1500390)

Location Code: 23130

Region: Eunice Field

Sample ID: AB42153

Location: Britt B Lease

Login Batch: 2014-02-24\_MFA\_SWICPW

System: Production System

Collection Date: 02/19/2014

Equipment: Well 34

Receive Date: 02/24/2014

Lab ID: ABU-1031

Report Date: 03/03/2014

Sample Point: Well Head Valve Up Stream of Choke

Analyses	Result	Unit
Dissolved CO2	50	mg/L
Dissolved H2S	188.1	mg/L
pH	8	
Pressure	70	psi
Temperature	83	° F

Analyses	Result	Unit
Bicarbonate	634.4	mg/L
Conductivity	130163	µS - cm3
ionic Strength	1.47	
Resistivity	0.077	ohms - m
Specific Gravity	1.055	
Total Dissolved Solids	83304.07	mg/L

Cations	Result	Unit
Iron	0.038	mg/L
Manganese	0.013	mg/L
Barium	0.056	mg/L
Strontium	66.68	mg/L
Calcium	2657	mg/L
Magnesium	804.1	mg/L
Sodium	28272.82	mg/L

Anions	Result	Unit
CHLORIDE	48988.96	mg/L
SULFATE	1880	mg/L

Scale Type	Result
Anhydrite CaSO4 SI	-0.52
Barite BaSO4 SI	-0.53
Calcite CaCO3 PTB	263.3
Calcite CaCO3 SI	1.17
Celestite SrSO4 SI	-0.07
Gypsum CaSO4 SI	-0.35
Hemihydrate CaSO4 SI	-0.35
Saturation Index Calculation (Tomson-Oddo Model)	

Comments:

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Michael Fitzgerald  
SE New Mexico Permian  
ConocoPhillips Company  
600 N. Dairy Ashford  
P10-05-5055  
Houston, TX 77079

Phone: 281-206-5684  
Michael.d.fitzgerald@cop.com

June 9, 2015

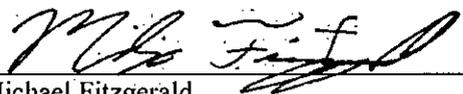
**RE:** Downhole Commingling Application  
Township 20 South, Range 37 East, N.M.P.M.  
Section 10: SW/4 SE4 and E/2 SE/4  
Section 15: NE/4 NW/4  
Containing 160.00 acres, more or less  
Lea County, New Mexico

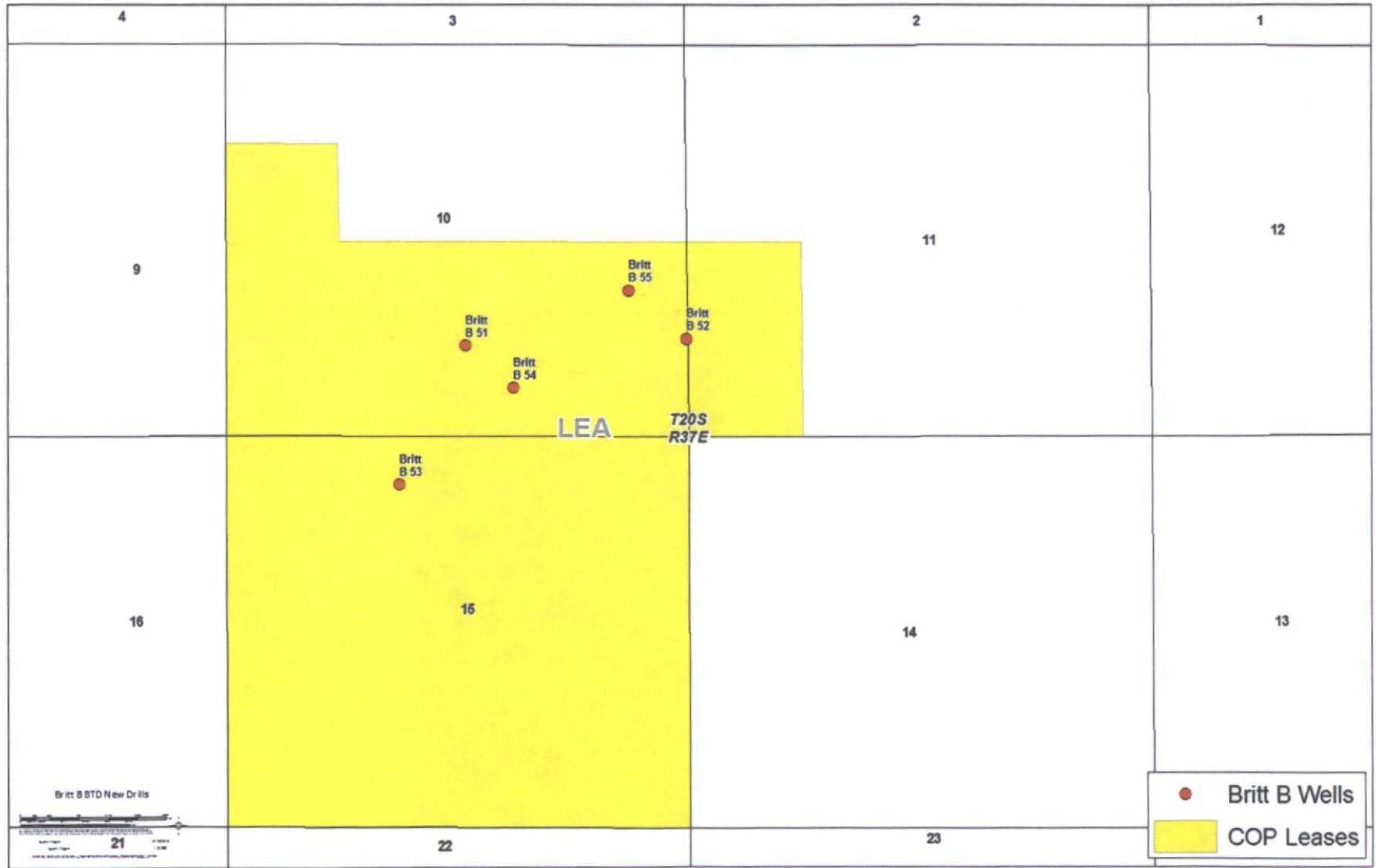
ConocoPhillips Company, as operator of the Britt-B Lease, is seeking approval to downhole commingle the wells referenced herein. (See attached map for specific locations).

Britt-B wells numbered 51, 52, 53, 54, and 55 are all located on the Britt-B Federal Lease (NMLC-031621B).

<u>Interest Owner</u>	<u>Working Interest</u>	<u>Net Revenue Interest</u>
ConocoPhillips Company	50.000%	43.750%
Chevron USA Inc.	25.000%	21.875%
ZPZ Delaware LLC	25.000%	21.875%
Office of Natural Resource Revenue	00.000%	12.500%
Total	100.000%	100.00%

I certify that the above information is true and correct.

  
\_\_\_\_\_  
Michael Fitzgerald  
Associate Landman  
ConocoPhillips Company



Britt B STD New Drills



21

<span style="color: red;">●</span>	Britt B Wells
	COP Leases



Ashley Bergen  
Regulatory Specialist  
Phone: (432) 688-6938

ConocoPhillips Company  
P.O. Box 51810  
Midland, TX 79710-1810

July 20, 2015

**QC COPY**

Chevron USA Inc.  
15 Smith Rd, Claydesta Plaza  
Midland, TX 79705

SUBJECT: REQUEST FOR APPROVAL OF DOWNHOLE COMMINGLE FOR BRITT B LEASE

To Whom It May Concern:

ConocoPhillips Company is requesting an approval to Downhole Commingle the Skaggs-Glorieta Pool (57190) with the pre-approved pools Weir-Blinebry (63780), Weir-Blinebry East (63800), Monument-Tubb (47090), and Skaggs-Drinkard (57000) pools in ConocoPhillips' Blinebry, Tubb, Drinkard development program in Sections 10 and 15, T20S, R37E, Lea County, New Mexico.

You are being provided notification of this action as an interest owner in the spacing unit. Any comments need to be provided to New Mexico Oil Conservation Division; 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 20 days.

If you have any questions regarding this request, I can be reached at 432-688-6938 or via email at [ashley.bergen@cop.com](mailto:ashley.bergen@cop.com)

Sincerely,

Ashley Bergen  
Regulatory Specialist



Ashley Bergen  
Regulatory Specialist  
Phone: (432) 688-6938

ConocoPhillips Company  
P.O. Box 51810  
Midland, TX 79710-1810

July 20, 2015

ZPZ Delaware LLC  
303 Veterans Airpark Lane  
Midland, TX 79705

sc COPY

SUBJECT: REQUEST FOR APPROVAL OF DOWNHOLE COMMINGLE FOR BRITT B LEASE

To Whom It May Concern:

ConocoPhillips Company is requesting an approval to Downhole Commingle the Skaggs-Glorieta Pool (57190) with the pre-approved pools Weir-Blinebry (63780), Weir-Blinebry East (63800), Monument-Tubb (47090), and Skaggs-Drinkard (57000) pools in ConocoPhillips' Blinebry, Tubb, Drinkard development program in Sections 10 and 15, T20S, R37E, Lea County, New Mexico.

You are being provided notification of this action as an interest owner in the spacing unit. Any comments need to be provided to New Mexico Oil Conservation Division; 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 20 days.

If you have any questions regarding this request, I can be reached at 432-688-6938 or via email at [ashley.bergen@cop.com](mailto:ashley.bergen@cop.com)

Sincerely,

Ashley Bergen  
Regulatory Specialist



Ashley Bergen  
Regulatory Specialist  
Phone: (432) 688-6938

ConocoPhillips Company  
P.O. Box 51810  
Midland, TX 79710-1810

July 20, 2015

Office of Natural Resource Revenue  
Room A 614  
Building 85 Denver Federal Center (6<sup>th</sup> Kipling)  
Denver, CO 80225

FC COPY

SUBJECT: REQUEST FOR APPROVAL OF DOWNHOLE COMMINGLE FOR BRITT B LEASE

To Whom It May Concern:

ConocoPhillips Company is requesting an approval to Downhole Commingle the Skaggs-Glorieta Pool (57190) with the pre-approved pools Weir-Blinebry (63780), Weir-Blinebry East (63800), Monument-Tubb (47090), and Skaggs-Drinkard (57000) pools in ConocoPhillips' Blinebry, Tubb, Drinkard development program in Sections 10 and 15, T20S, R37E, Lea County, New Mexico.

You are being provided notification of this action as an interest owner in the spacing unit. Any comments need to be provided to New Mexico Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 20 days.

If you have any questions regarding this request, I can be reached at 432-688-6938 or via email at [ashley.bergen@cop.com](mailto:ashley.bergen@cop.com)

Sincerely,

Ashley Bergen  
Regulatory Specialist

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Chevron  
 15 Smith Rd,  
 Claydesta Plaza,  
 Midland, TX 79705

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
 B. Received by (Printed Name) C. Date of Delivery  
 D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type  
 Certified Mail®  Priority Mail Express™  
 Registered  Return Receipt for Merchandise  
 Insured Mail  Collect on Delivery  
 4. Restricted Delivery? (Extra Fee)  Yes

2. Article Number (Transfer from service label) **7013 3020 0001 2047 9982**  
 PS Form 3811, July 2013 Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE  
**CERTIFIED MAIL™**

U.S. Postal Service™ <b>CERTIFIED MAIL™ RECEIPT</b> (Domestic Mail Only; No Insurance Coverage Provided)		Postmark Here
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>		
<b>OFFICIAL USE</b>		
Postage	\$	Postmark Here \$ Certified Fee Return Receipt Fee (Endorsement Required) Restricted Delivery Fee (Endorsement Required) Total Postage & Fees
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	
Sent To <b>Chevron</b> Street, Apt. No., or PO Box No. City, State, ZIP+4 <b>Britt B DHC</b>		Sent To <b>ZPZ</b> Street, Apt. No., or PO Box No. City, State, ZIP+4 <b>Britt B DHC</b>
PS Form 3800, August 2006		See Reverse for Instr

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 ZPZ  
 303 Veterans Airpark Lane  
 Midland, TX 79705

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  X  
 B. Received by (Printed Name)  
 D. Is delivery address different from item 1? If YES, enter delivery address:

3. Service Type  
 Certified Mail®  Priority Mail Express™  
 Registered  Return Receipt for Merchandise  
 Insured Mail  Collect on Delivery  
 4. Restricted Delivery? (Extra Fee)  Yes

2. Article Number (Transfer from service label) **7013 3020 0001 2047 9975**  
 PS Form 3811, July 2013 Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE  
**CERTIFIED MAIL™**

5266 2402 1000 020E 8702  
 5266 2402 1000 020E 8702

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Office of Natural  
 Resource Revenue  
 Room A 614  
 Building 85, Denver Federal  
 Center (6th Kipling)  
 Denver, CO, 80225

2. Article Number  
 (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
**X**

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type  
 Certified Mail®  Priority Mail Express™  
 Registered  Return Receipt for Merchandise  
 Insured Mail  Collect on Delivery

4. Restricted Delivery? (Extra Fee)  Yes

7013 3020 0001 2047 9999

PS Form 3811, July 2013

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS FOLD AT DOTTED LINE  
**CERTIFIED MAIL**

7013 3020 0001 2047 9999  
 7013 3020 0001 2047 9999

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark  
Here

Sent To office of Natural Resource  
 Street, Apt. No.; Revenue  
 or PO Box No. BH# BPHC  
 City, State, ZIP+4

PS Form 3800, August 2006

See Reverse for Instructions

## McMillan, Michael, EMNRD

---

**From:** Bergen, Ashley <Ashley.Bergen@conocophillips.com>  
**Sent:** Tuesday, September 01, 2015 2:52 PM  
**To:** McMillan, Michael, EMNRD  
**Subject:** Britt B Wells No. 51,52,53,54,55 Lea Co. DHC  
**Attachments:** Copy of SEMU #174 Production Allocation.xls

Good Afternoon Mr. McMillan,

We will use the historical data from the analog well of our new drills, SEMU 174, to determine the production allocation for the three zones (Blinebry, Tubb and Drinkard). SEMU 174 is recently drilled targeting Blinebry, Tubb and Drinkard formations in 2007 in the same area as those that we are planning to drill in the DHC proposal. The approved allocation for SEMU 174 is

	Oil	Water	Gas
Blinebry Allocation	90%	85%	24%
Tubb Allocation	5.0%	7.5%	38%
Drinkard Allocation	5.0%	7.5%	38%

The above allocation percentage for SEMU 174 was determined by production test and calculation based on open perf distribution. The details can be found in the attached excel sheet.

Please let me know if you have any questions.

Thanks,

**Ashley Bergen**

Regulatory Specialist - MCBU

ConocoPhillips Lower 48

3300 North A St.- Bldg 6 Midland, TX 79705-5406

T: 432.688.6938 | M: 432.640.7012 | [ashley.bergen@conocophillips.com](mailto:ashley.bergen@conocophillips.com)

## SEMU #174-Production Allocation Report

**Opetator:** ConocoPhillips  
**API #:** 3002538105  
**Surface Location:** SEC 14, R37E,T20S  
**Formations completed:** Blinebry, Tubb & Drinkard

Allocation is based on production tests

**PRODUCTION TEST---Tubb/Drinkard stabilized test from 5/22/07 to 6/6/07**  
**First Production---5/02/07**

Date	Oil Prod	Water Prod	Gas Prod
	BBI/D	BBL/D	MCF/D
05/22/07	9	39	183
05/23/07	8	36	183
05/24/07	6	23	183
05/25/07	12	36	183
05/28/07	8	24	178
05/29/07	10	27	178
05/31/07	8	22	169
06/01/07	8	24	178
06/04/07	8	36	178
06/06/07	9	22	188
<b>Average</b>	<b>8.60</b>	<b>28.90</b>	<b>180.10</b>

**PRODUCTION TEST---Blinebry, Tubb and Drinkard (commingled) stabilized test from 6/28/07 to 7/2/07**  
**First Production---6/23/07**

Date	Oil Prod	Water Prod	Gas Prod
	BBI/D	BBL/D	MCF/D
06/28/07	90	238	219
06/29/07	81	211	204
06/30/07	55	156	296
07/01/07	81	201	220
07/02/07	125	181	243
<b>Average</b>	<b>86.40</b>	<b>197.40</b>	<b>236.40</b>

**CALCULATION--- of Blinebry allocation using subtraction method**

Oil Prod	Water Prod	Gas Prod
BBI/D	BBL/D	MCF/D
77.80	168.50	56.30

**CALCULATION---% allocation per formation**

	Oil Prod	Water Prod	Gas Prod
Blinebry Allocation =	90.05%	85.36%	23.82%
Tubb/Drinkard Allocation=	9.95%	14.64%	76.18%

Tubb/Drinkard allocation is based on open perf distribution:		% Allocation	Total Well % Allocation
Tubb/Drinkard net perf interval=	40 ft	100%	
Tubb perf interval=	20 ft	50%	5%
Drinkard perf interval=	20 ft	50%	5%

	Oil	Water	Gas
Blinebry Allocation	90%	85%	24%
Tubb Allocation	5.0%	7.5%	38%
Drinkrad Allocation	5.0%	7.5%	38%

\*Allocation is based on production tests and Net perf intervals