

FORM NO. 22 R 10/09 SUBMIT IN QUADRUPPLICATE TO: ARM 36.22.307
 ARM 36.22.601

MONTANA BOARD OF OIL AND GAS CONSERVATION
2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102

Lease Name: Baird Federal

Lease Type (Private/State/Federal): Federal/Private **RECEIVED**

Application for Permit To:

Drill Deepen Re-enter
 Oil Gas Other

Well Number: 2-34H **OCT - 3 2018**

Operator: Continental Resources, Inc.
 Address: P O Box 268870
 City: Oklahoma City State: OK Zip: 73126
 Telephone Number: (405) 234-9000

Field Name or Wildcat: **MONTANA BOARD OF OIL & GAS CONSERVATION • BILLINGS**
 Wildcat

Unit Name (if applicable):

Surface Location of Well (quarter-quarter and footage measurements):
 265' FNL & 1608' FWL, NENW Sec 34-27N-53E

Objective Formation(s): Bakken

Township, Range, and Section:
 Sec. 34-27N-53E

County: Richland

Elevation (indicate GL or KB):
 2174' GL

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:
 200' FSL & 550' FWL, Sec 3-26N-53E, SWSW
 19058' MD; 9052' TVD

Size and description of drilling/spacing unit and applicable order, if any:	Formation at total depth:	Anticipated Spud Date:
34-27N-53E & 3-26N-53E; 1056.89 acres; Order #278-2013	Bakken	10/15/2018

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
26"	16"	42#	X-42	60'	48	Grout
13 1/2"	9 5/8"	36#	J-55	1200'	453	35/65 Poz/C, Class C, 3% CaCl
8 3/4"	7"	32#	P-110 IC	9267'	744	35/65 Poz/C, Class G, 3% KCl

Describe Proposed Operations:
 Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.
 Plans are to drill a vertical wellbore to the Lodgepole, then build angle at 13°/100 to land 7" casing in the Bakken formation @ approximately 90°. A 6" horizontal wellbore will be drilled in the Bakken formation. The lateral will be fracture stimulated via an uncemented liner. See attached diagram of BOP, Mud, and Casing program. Plans are to use a closed pit system for this well in place of using a reserve pit. Drilling fluids will be recycled and used on future wells. Cuttings will be solidified with fly ash and buried onsite in cuttings pit.

Request variance to not run openhole logs. Offset logs used will be Husky Oil Ltd., Schmitz 4-35, Sec 35-27N-53E, Richland County, MT.

BOARD USE ONLY

Approved (date) OCT 31 2018 Permit Fee \$1500.00

By [Signature] Check Number 209848

Title Professional Engineer Permit Expires MAY 01 2019

Permit Number 32357

API Number: 25 - 083 - 23363

THIS PERMIT IS SUBJECT TO THE CONDITIONS OF APPROVAL STATED ON THE BACK

The undersigned hereby certifies that the information contained on this application is true and correct:

Signed (Agent) Christi Scitelfield

Title Regulatory Compliance Specialist

Date 10/2/2018

Telephone Number (405) 234-9257

Samples Required: NONE ALL _____ FROM _____ feet to _____ feet

Core chips to address below, full cores to USGS, Core Laboratory, Arvada, CO. Required samples must be washed, dried and delivered prepaid to:

Montana Board of Oil and Gas Conservation
 2535 St. Johns Avenue
 Billings, MT 59102

Proposal # 98826

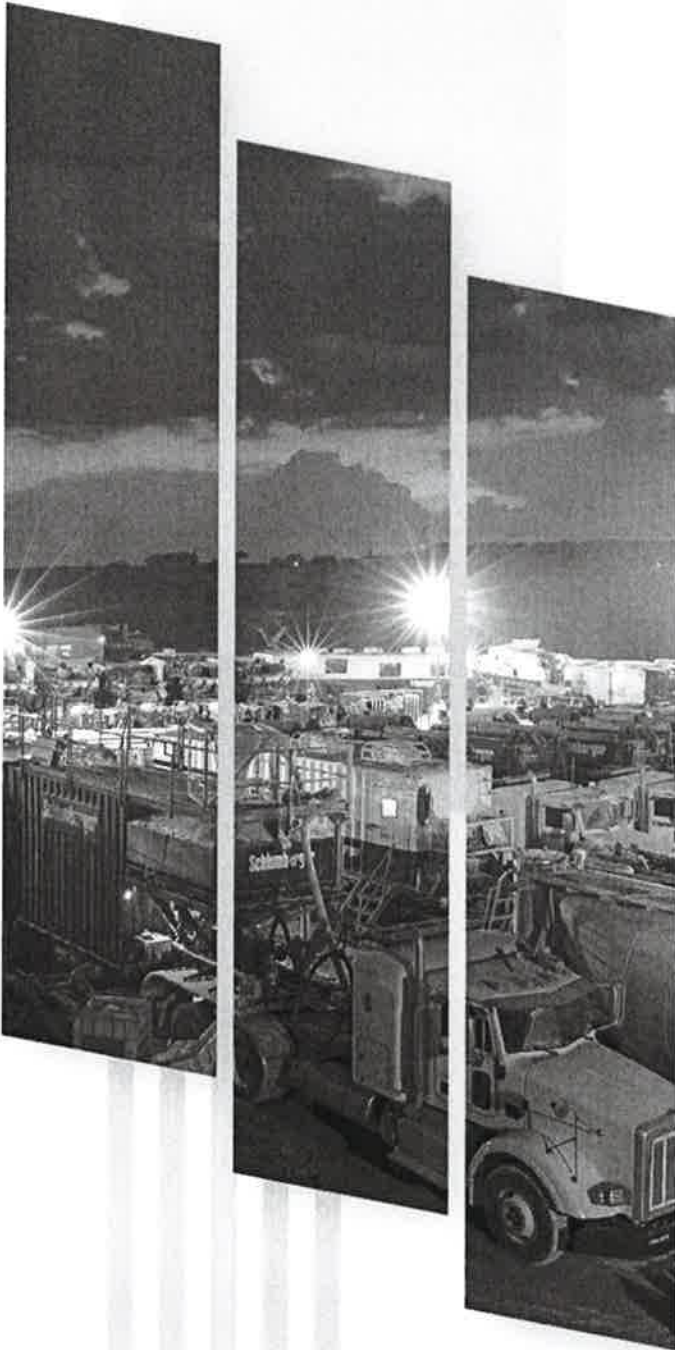
Stimulation

Company	CONTINENTAL RESOURCES INC-EDI ONLY
Well Name	Baird Federal 2-34H
UWI Number	
Formation	Middle Bakken
Objective	Preliminary proposal 34 stages
Service From District	Williston
Date	10/12/2018
Primary Contact	Tito Abiseid
Alternative Contacts	Nevil Kunnath Aven / +1 405 595 9542

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Executive Summary

Enclosed is our proposed commercial submission for Schlumberger intervention; and, for illustrative purposes, an estimate is also provided for the referenced well. This proposal includes well data, job design data, materials and resources requirements, and cost estimates. The purpose of our services is to perform Fracturing Hybrid.

Schlumberger has a safety policy to which all Schlumberger personnel must adhere. A pre-job safety meeting will be held with customer representatives and other personnel on location to familiarize everyone with existing and anticipated hazards and safety procedures. We would appreciate close cooperation between the customer representative and the Schlumberger representative to ensure a safe operation.

All work will be subject to Schlumberger then-current General Terms and Conditions or to the terms and conditions of a Master Service Agreement if one is in effect between Schlumberger and Customer. This quote is valid for a period of thirty (30) days from the date submitted. Work under this proposal shall not begin until an agreement regarding commercial terms and conditions has been executed. In the event work begins without a commercial agreement in place, all work done shall be subject to Schlumberger standard commercial terms which can be provided upon request.

Thank you for considering Schlumberger.

Please do not hesitate to contact me with any questions or concerns.

Sincerely,

Tito Abiseid
Sales Engineer
jabiseid@exchange.slb.com

Alternate Contacts

Nevil Kunmath Aven
DESC Engineer
NAven@exchange.slb.com
Office: +1 405 595 9542

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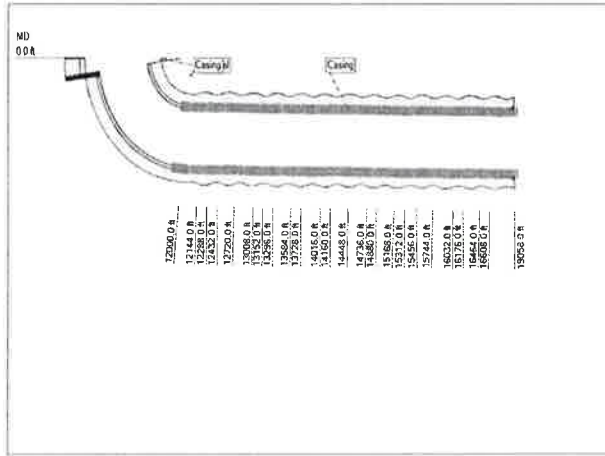
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Well Data

IMPORTANT

The well data shown on this page is based on information available when this treatment program was prepared. This data must be confirmed on location with the customer representative prior to the treatment. Any changes in the well design need to be reviewed for their impact on the treatment design.



Well Data	
Well Name:	Baird Federal 2-34H
Well Location UWI:	Sec 29-T156N-R99W
Status, Drilling For:	Oil
Formation:	Middle Bakken
Pump Treatment Down:	Casing
MD:	19,058.0 ft
TVD:	9,056.0 ft
Well Geometry:	Horizontal

Casing									
Top Depth, ft	Bottom Depth, ft	OD, in	ID, in	Weight, lbm/ft	Grade	Burst Pressure, psi	Collapse Pressure, psi	Casing Capacity, bbl/ft	
0.0	8,580.0	7	6.094	32.0	P110	12,460	10,760	0.03608	
8,580.0	19,058.0	4 1/2	3.920	13.5	P110	12,410	10,670	0.01493	

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Pumping Schedule

Baird Federal 2-34H Stages 1-34

Stage: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34

Clean Fluid Totals	
HCl 15%	500 gal
Slick Water	114,306 gal
Slick Water HV	45,000 gal
Slick Water HV	26,300 gal
Broadband Pill	4,200 gal
Slick Water HV	13,150 gal

Proppant Totals	
White Sand 100M	36,600.0 lbm
White Sand 40/70	146,400.0 lbm

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Bottom Hole Pumping Schedule												
Stage	Fluid Type	Clean Fluid Vol gal	Cum Clean Fluid gal	Prop Type	B.H. Prop Conc PPA	Prop Per Stage lbm	Cum Prop Amt lbm	Stage Slurry Vol bbl	Cum Slurry Vol bbl	Pump Time h	Clean Rate bbl/min	Slurry Rate bbl/min
15% HCl	HCl 15%	500	500		0.0	0.0	0.0	11.9	11.9	0.04	5.0	5.0
Pad	Slick Water	8,000	8,500		0.0	0.0	0.0	190.5	202.4	0.04	80.0	80.0
Slickwater	Slick Water	10,000	18,500	White Sand 100M	0.3	2,500.0	2,500.0	240.8	443.2	0.05	79.1	80.0
Slickwater	Slick Water	10,000	28,500	White Sand 100M	0.5	5,000.0	7,500.0	243.5	686.6	0.05	78.2	80.0
Slickwater	Slick Water	4,700	33,200	White Sand 100M	1.0	4,700.0	12,200.0	117.0	803.6	0.02	76.5	80.0
1.5gpt HVFR SW	Slick Water HV	15,000	48,200	White Sand 40/70	1.5	22,500.0	34,700.0	381.6	1,185.3	0.08	74.9	80.0
2.0gpt HVFR SW	Slick Water HV	13,150	61,350	White Sand 40/70	2.0	26,300.0	61,000.0	341.7	1,527.0	0.07	73.3	80.0
Slickwater - Spacer	Slick Water	2,100	63,450		0.0	0.0	61,000.0	50.0	1,577.0	0.01	80.0	80.0
Slickwater - Diverter	Broadband Pill	2,100	65,550		0.0	0.0	61,000.0	50.0	1,627.0	0.01	80.0	80.0
Slickwater - Spacer	Slick Water	12,500	78,050		0.0	0.0	61,000.0	297.6	1,924.6	0.06	80.0	80.0
Slickwater	Slick Water	10,000	88,050	White Sand 100M	0.5	5,000.0	66,000.0	243.5	2,168.1	0.05	78.2	80.0
Slickwater	Slick Water	7,200	95,250	White Sand 100M	1.0	7,200.0	73,200.0	179.2	2,347.3	0.04	76.5	80.0
1.5gpt HVFR SW	Slick Water HV	15,000	110,250	White Sand 40/70	1.5	22,500.0	95,700.0	381.6	2,728.9	0.08	74.9	80.0
2.0gpt HVFR SW	Slick Water HV	13,150	123,400	White Sand 40/70	2.0	26,300.0	122,000.0	341.7	3,070.7	0.07	73.3	80.0
Slickwater - Spacer	Slick Water	2,100	125,500		0.0	0.0	122,000.0	50.0	3,120.7	0.01	80.0	80.0
Slickwater - Diverter	Broadband Pill	2,100	127,600		0.0	0.0	122,000.0	50.0	3,170.7	0.01	80.0	80.0
Slickwater - Spacer	Slick Water	12,500	140,100		0.0	0.0	122,000.0	297.6	3,468.3	0.06	80.0	80.0
Slickwater	Slick Water	10,000	150,100	White Sand 100M	0.5	5,000.0	127,000.0	243.5	3,711.7	0.05	78.2	80.0
Slickwater	Slick Water	7,200	157,300	White Sand 100M	1.0	7,200.0	134,200.0	179.2	3,890.9	0.04	76.5	80.0
1.5gpt HVFR SW	Slick Water HV	15,000	172,300	White Sand 40/70	1.5	22,500.0	156,700.0	381.6	4,272.6	0.08	74.9	80.0
2.0gpt HVFR SW	Slick Water HV	13,150	185,450	White Sand 40/70	2.0	26,300.0	183,000.0	341.7	4,614.3	0.07	73.3	80.0
Slickwater Preflush	Slick Water	1,500	186,950		0.0	0.0	183,000.0	35.7	4,650.0	0.01	80.0	80.0



Bottom Hole Pumping Schedule

Stage	Fluid Type	Clean Fluid Vol gal	Cum Clean Fluid gal	Prop Type	B.H. Prop Conc PPA	Prop Per Stage lbm	Cum Prop Amt lbm	Stage Slurry Vol bbl	Cum Slurry Vol bbl	Pump Time h	Clean Rate bbl/min	Slurry Rate bbl/min
Flush	Slick Water	16,506	203,456		0.0	0.0	183,000.0	393.0	5,043.0	0.08	80.0	80.0
Totals:		203,456					183,000.0	5,043.0		1.09		

Pad 8,000 gal
 Frac 143,550 gal
 Pad% 5.3 %

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Material Summary

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Fluid Summary			
Fluid Description		Additives	
HCl 15%	A264	Corrosion Inhibitor	5.00 Gal/mGal
	B526	Non-Emulsifying Agent B526	2.00 Gal/mGal
	L058	Iron Control/Reducing	5.000 lb/mGal
Slick Water	B526	Non-Emulsifying Agent B526	0.50 Gal/mGal
	J475	Breaker Encapsulated	0.500 lb/mGal
	J627	Friction Reducer	0.50 Gal/mGal
	L069	Scale Inhibitor	0.500 lb/mGal
	M300	Biocide	0.30 Gal/mGal
Slick Water HV	B526	Non-Emulsifying Agent B526	0.50 Gal/mGal
	J475	Breaker Encapsulated	0.500 lb/mGal
	J694	Friction Reducer	1.50 Gal/mGal
	L069	Scale Inhibitor	0.500 lb/mGal
Broadband Pill	M300	Biocide	0.30 Gal/mGal
	A140	Glycerine	0.010 lb/mGal
	B526	Non Emulsifying Agent	0.50 Gal/mGal
	J475	Breaker Encapsulated	0.500 lb/mGal
	J622	Fiber	50.000 lb/mGal
	J636	BroadBand Material	50.000 lb/mGal

Totals By Stage					
Stage	Fluids	Clean Fluid Volume	Proppants	Proppant Mass	Pump Time
1	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
2	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
3	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
4	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
5	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
6	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
7	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h



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Totals By Stage					
Stage	Fluids	Clean Fluid Volume	Proppants	Proppant Mass	Pump Time
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
8	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
9	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
10	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
11	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
12	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
13	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
14	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
15	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
16	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
17	Slick Water HV	26,300 gal			
	Slick Water HV	45,000 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water	114,306 gal	White Sand 100M	36,600.0 lbm	1.09 h



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Totals By Stage					
Stage	Fluids	Clean Fluid Volume	Proppants	Proppant Mass	Pump Time
18	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
19	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
20	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
21	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
22	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
23	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
24	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
25	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
26	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
27	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
28	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h



Totals By Stage					
Stage	Fluids	Clean Fluid Volume	Proppants	Proppant Mass	Pump Time
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
29	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
30	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
31	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
32	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
33	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			
34	HCl 15%	500 gal	White Sand 100M	36,600.0 lbm	1.09 h
	Slick Water	114,306 gal	White Sand 40/70	146,400.0 lbm	
	Slick Water HV	45,000 gal			
	Slick Water HV	26,300 gal			
	Broadband Pill	4,200 gal			
	Slick Water HV	13,150 gal			

Job Totals				
Fluids	Clean Fluid Volume	Proppants	Proppant Mass	Pump Time
HCl 15%	17,000 gal	White Sand 100M	1,244,399.7 lbm	36.99 h
Slick Water	3,886,404 gal	White Sand 40/70	4,977,598.7 lbm	
Slick Water HV	2,871,300 gal			
Broadband Pill	142,800 gal			

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Load Out Summary

Loadouts		
Fluid/Material Type	Code	Loadout Quantity
Glycerine	A140	1.4 lbm
Corrosion Inhibitor	A264	85.0 gal
Non-Emulsifying Agent B526	B526	3,484.3 gal
Breaker Encapsulated	J475	3,450.3 lbm
Fiber	J622	7,140.0 lbm
Friction Reducer	J627	1,943.2 gal
BroadBand Material	J636	7,140.0 lbm
Friction Reducer	J694	5,201.2 gal
BroadBand Sequence Product Charge J964	J964	57.0 lbm
Iron Control/Reducing	L058	85.0 lbm
Scale Inhibitor	L069	3,378.9 lbm
Biocide	M300	2,070.2 gal
White Sand 40/70	S012-4070	4,977,598.7 lbm
White Sand 100M	S100	1,244,399.7 lbm

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Client: Continental Resources, Inc.
 Well: Baird Federal 2-34H
 Basin/Field:
 State: Montana
 County/Parish: Richland
 Case:
 Disclosure Type: Post-Job
 Well Completed: 11/10/2018
 Date Prepared: 10/18/2018 4:12 PM
 Report ID: RPT-58092

Fluid Name & Volume	Additive	Additive Description	Concentration	Volume
Slickwater, WF110,WF120, HCl 15%, Broadband 6,917,504 Gal	A140	Lubricating Agent	0.0002 Lb / 1000 Gal	1.4 Lb
	A264A	Corrosion Inhibitor	0.01 Gal / 1000 Gal	85.0 Gal
	B525	Flowback Surfactant	1 Gal / 1000 Gal	6,968.6 Gal
	H015	Acid	2.5 Gal / 1000 Gal	17,000.0 Gal
	J475	Breaker	0.5 Lb / 1000 Gal	3,450.3 Lb
	J622	Low Temperature Fiber	1 Lb / 1000 Gal	7,140.0 Lb
	J627	Friction Reducer	0.3 Gal / 1000 Gal	1,943.2 Gal
	J636	Diverting Agent	1 Lb / 1000 Gal	7,140.0 Lb
	J694	High Viscosity Friction Reducer J694	0.8 Lb / 1000 Gal	5,201.2 Lb
	L058	Iron Control Agent	0.01 Lb / 1000 Gal	85.0 Lb
	L069	Scale Inhibitor	0.5 Lb / 1000 Gal	3,378.9 Lb
	M300	Myacide GA 25	0.3 Gal / 1000 Gal	2,070.2 Gal
	S012-4070	Propping Agent	varied concentrations	4,977,599.0 Lb
	S100	Fluid Loss Additive	varied concentrations	1,244,400.0 Lb

The total volume listed in the tables above represents the summation of water and additives. Water is supplied by client.

CAS Number	Chemical Name	Mass Fraction
-	Water (Including Mix Water Supplied by Client)*	90.16203 %
14808-60-7	Quartz, Crystalline silica	9.72752 %
7647-01-0	Hydrochloric acid	0.03327 %
9051-89-2	1,4-Dioxane-2,5-dione, 3,6-dimethyl-, (3Rcis)-, polymer with (3S-cis)-3,6-dimethyl-	0.02217 %
64742-47-8	Distillates, petroleum, hydrotreated light	0.00879 %
111-30-8	Glutaraldehyde	0.00716 %
68002-97-1	Alcohols, C10-16, ethoxylated	0.00655 %
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol	0.00636 %
65997-18-4	Calcium magnesium sodium phosphate frit	0.00528 %
26100-47-0	Acrylamide/ammonium acrylate copolymer	0.00527 %
7727-54-0	Diammonium peroxodisulphate	0.00440 %
12125-02-9	Ammonium chloride	0.00343 %
53845-65-1	2-Propenoic acid, sodium salt (1:1), polymer with 2-propenamide and sodium 2-methyl-2-[(1-oxo-2-propen-1-yl)amino]-1-propanesulfonate (1:1)	0.00303 %
25038-72-6	Vinylidene chloride/methylacrylate copolymer	0.00095 %
1338-43-8	Sorbitan monooleate	0.00073 %
9004-96-0	Ethoxylated oleic acid	0.00066 %
67-56-1	Methanol	0.00044 %
78330-21-9	Alcohol, C11-14, ethoxylated	0.00020 %
61723-83-9	Sorbitol Tetraoleate	0.00020 %
224635-63-6	Reaction product of: acetophenone, formaldehyde, cyclohexylamine, methanol and acetic acid	0.00018 %
540-72-7	Sodium sulfocyanate	0.00017 %
9005-65-6	Sorbitan monooleate, ethoxylated	0.00017 %
10604-69-0	2-Propenoic acid, ammonium salt	0.00016 %
6381-77-7	Sodium erythorbate	0.00013 %
104-55-2	Cinnamaldehyde	0.00010 %
68551-12-2	Alcohols, C12-C16, ethoxylated	0.00010 %
68439-50-9	Alcohols, C12-C14, ethoxylated	0.00010 %
84133-50-6	C14 alpha olefin ethoxylate	0.00010 %
68439-46-3	Alcohol, C9-C11, Ethoxylated	0.00008 %
7783-18-8	Ammonium thiosulfate	0.00005 %
79-06-1	2-Propenamid (impurity)	0.00003 %
14807-96-6	Magnesium silicate hydrate (talc)	0.00003 %
557-04-0	Magnesium stearate	0.00003 %
64-19-7	Acetic acid (impurity)	0.00002 %
98-86-2	Acetophenone	0.00002 %
61791-26-2	Amines, tallow alkyl, ethoxylated	0.00002 %



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Date Prepared: 10/18/2018 4:12 PM
Report ID: RPT-58092

CAS Number	Chemical Name	Mass Fraction
9002-84-0	poly(tetrafluoroethylene)	0.00001 %
50-00-0	Formaldehyde (impurity)	0.00001 %
72283-36-4	Oxirane, 2-methyl-, polymer with oxirane, mono-(9Z)-9-octadecenoate, methyl ether	0.00001 %
110-30-5	N,N'-ethylenedi(stearamide)	0.00001 %
39322-78-6	Phosphoric acid, dodecyl ester, potassium salt	0.00001 %
9016-88-0	1,4-Benzenedicarboxylic acid, polymer with 1,2-ethanediol and a-hydro-w-hydroxypoly (oxy-1,2-ethanediyl)	0.00001 %
56-81-5	1, 2, 3 - Propanetriol	< 0.00001 %
112-53-8	C12 fatty alcohol	< 0.00001 %
9043-30-5	C13 alcohol ethoxylate	< 0.00001 %
52-51-7	2-bromo-2-nitropropane-1,3-diol	< 0.00001 %
Total		100%

* Mix water is supplied by the client. Schlumberger has performed no analysis of the water and cannot provide a breakdown of components that may have been added to the water by third-parties.

* The evaluation of attached document is performed based on the composition of the identified products to the extent that such compositional information was known to GRC-Chemicals as of the date of the document was produced. Any new updates will not be reflected in this document.