

BC Operating, Inc.

WSYU #117

October 17, 2011



Name: Christian Castro

Location: Midland, TX



October 17, 2011
Mr. Jason Wacker
BC Operating, Inc.

Dear Mr. Wacker

Enclosed is a comprehensive fracturing post job report for the WSYU #117 . The stimulation treatment was performed on October 15 , 2011. Included in the report are the real time data, which incorporates treatment plots.

ProPetro Services appreciates the opportunity to provide stimulation services on this well. Please contact me if you have any questions or comments.

Sincerely,
Christian Castro
Technical Specialist
ProPetro Services Inc.

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Midland, Texas 79701
Office: 432-688-0012
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Email: christian.castro@propetroservices.com



BC Operating, Inc.

WSYU #117
Section 13, Block 16
Ward County, Texas

Stimulation Cost Estimate

ProBor 20 Treatment
Single Stage

Wickett South Yates Field

Prepared For Jason Wacker
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Fax Number
Mobile (432) 631-2142
E-mail jwacker@bcoperating.com

Service Center Midland, TX
Operations Oscar M. Dominguez
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Reviewed By Oscar Dominguez

10/13/2011
Recommendation Version: 1



Well Information

Casing	5-1/2", 15.5#, J-55
Treatment Conductor	Casing
Perforated Intervals	2,568' - 2,691'
Number of Perforations	38
Perforation Size, in	0.42
Formation	Yates
Bottom Hole Temperature, F	100
Est. Frac Gradient, psi/ft	0.65
Est. Bottom Hole Frac Pressure, psi	1709



Treatment Specifications

Stage 1: Yates

PRE-PAD	5,000 gallons	20# Linear	gel fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		1	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
ACID	1,500 gallons	15% HCL Acid	containing per Kgals:
		5	gl IC-5 - Pro Iron Control
		2	gl CI-200 - Corrosion Inhibitor
		1	gl NE-602 - Non-Emulsifier/Surfactant
SPACER	2,500 gallons	20# Linear	gel fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		1	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
PAD	15,000 gallons	ProBor 20	crosslinked fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		2	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
		0.8	gl CL-3 - Internally Buffered Crosslinker
SAND LADEN	20,000 gallons	ProBor 20	crosslinked fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		2	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
		0.8	gl CL-3 - Internally Buffered Crosslinker
SAND LADEN (Resin Coated)	7,000 gallons	ProBor 20	crosslinked fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		2	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
		0.8	gl CL-3 - Internally Buffered Crosslinker
		15	gl Activator W (Momentive)
FLUSH	2,567 gallons	20# Linear	gel fluid containing per Kgals:
		5	gl Liquid Gellant
		0.25	lb X-CIDE 207 - Dry Biocide
		0.5	gl NE-602 - Non-Emulsifier/Surfactant
		2	lb BR-1 - Chemical Gel Breaker
		0.1	gl LEB-1 - Liquid Enzyme Breaker (Low Temp)
PROPPANT	320 cwt	16/30 Cadre Sand	
	24,000 lb	16/30 SiberProp	
RATE & PRESSURE	25 bpm at 872 psi via Casing (max pressure is 4250 psi)		



Procedure

1. MIRU Pro Petro Services frac equipment.
2. Hold safety meeting with all personnel on location.
3. Perform QA/QC testing and prepare location for treatment.
4. Test lines to max pressure plus 1000 psi.
5. Pump using the treatment schedule listed below.
6. Shut down and obtain ISIP, 5, 10 and 15 minute SIP pressure information.
7. RDMO Pro Petro Services equipment.

Operator to Supply

Clean Frac tanks with fresh water.

Wellhead connections and/or isolation tool if needed.



Treatment Schedule

TREATMENT SCHEDULE										
Yates (2,568' - 2,691') 38 holes										
Stage 1	Name	Fluid Type	Stage Volume	Slurry Volume	Slurry Rate	Stage Time	Prop Conc.	Stage Prop	Cum Prop	Prop Type
			(gals)	(gals)	(bpm)	(min)	(ppg)	(lbs)	(lbs)	
1	Pre-Pad	20# Linear	5000	5000	25	4.76	0	0	0	
2	Acid Spear	15% HCL	1500	1500	25	1.43	0	0	0	
3	Spacer	20# Linear	2500	2500	25	2.38	0	0	0	
4	Pad	ProBor 20	15000	15000	25	14.29	0	0	0	
5	Proppant	ProBor 20	10000	10450	25	9.95	1	10000	10000	16/30 Cadre
6	Proppant	ProBor 20	8000	8720	25	8.30	2	16000	26000	16/30 Cadre
7	Proppant	ProBor 20	2000	2270	25	2.16	3	6000	32000	16/30 Cadre
8	Proppant	ProBor 20	4000	4540	25	4.32	3	12000	44000	16/30 SiberProp
9	Proppant	ProBor 20	3000	3540	25	3.37	4	12000	56000	16/30 SiberProp
10	Flush	20# Linear	2567	2567	25	2.44	0	0	56000	
TOTALS			53567	56087	gals	53.42	min.		56000	lbs



Price Estimate

Chemicals	UOM	QTY	Extended Price
10.1% to 15% Uninhibited HCL Acid	gl	1,500	\$2,400.00
IC-5 - Pro Iron Control	gl	8	\$113.76
CI-200 - Corrosion Inhibitor	gl	3	\$61.56
Liquid Gellant	gl	261	\$9,102.38
X-CIDE 207 - Dry Biocide	lb	20	\$831.60
NE-602 - Non-Emulsifier/Surfactant	gl	31	\$441.24
BR-1 - Chemical Gel Breaker	lb	98	\$303.41
LEB-1 - Liquid Enzyme Breaker (Low Temp)	gl	8	\$921.60
CL-3 - Internally Buffered Crosslinker	gl	34	\$550.80
Activator W (Momentive)	gl	105	\$5,103.00
		Subtotal	\$17,254.02
Proppant	UOM	QTY	Extended Price
16/30 Cadre Sand	cwt	320	\$3,072.00
16/30 SiberProp	lb	24,000	\$8,832.00
Sand Master Services	ea/day	1	\$780.00
Delivery Charge, Proppant	tm	3,500	\$4,725.00
		Subtotal	\$17,409.00
Equipment	UOM	QTY	Extended Price
4" Valve Rental	ea/day	1	\$300.00
Crane Truck	day	1	\$570.00
Computer Blender, 1st 2 hrs, 21 - 30 BPM	ea	1	\$1,380.00
Hydration Unit, first 2 hrs	ea	1	\$2,139.00
Minimum Charge 2000 HHP Unit, first 2 hrs	ea	4	\$14,124.00
Compu-Frac Monitoring Van	day	1	\$1,779.90
Densimeter	ea	1	\$384.00
QC Van & Operator	day	1	\$647.10
Unit Mileage - Auto, Pick-up or Van	mi	560	\$672.00
Unit Mileage - Heavy Equipment	mi	1,680	\$3,528.00
Stimulation Chemical Truck (4 hr min)*	hr	4	\$417.60
Acid Transport - 4 hour minimum	hr	4	\$256.80
Prop Concentration Charge, 0.1 to 4.0 lb/gal	gl	27,000	\$1,134.00
Fuel Surcharge	ea	1	\$2,354.81
Personnel Charge	ea	1	\$1,500.00
		Subtotal	\$31,187.21
		TOTAL	\$68,425.55

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**BC Operating
WSYU #117
Stage 1-Yates**

Wickett South Yates Field

**Ward County, TX
10/15/2011**

Treatment Summary

Service Supervisor: Kyle Smith

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Operators Name: BC Operating
Well Name: WSYU #117
Stage No.: 1-Yates
Job Description: ProBor 20
Date: October 15, 2011



Section I - Well Data

Reservoir Data

Formation: 1-Yates
Depth to Middle Perforation: 2629.5 ft
Fracture Gradient: 1.07 psi/ft
Bottom Hole Static Pressure: 165 ° F

TUBULAR'S

Pump Via

CASING

TUBULAR'S GEOMETRY

Type	Size		Weight	Top	Bottom
	O.D.	I.D.			
J-55	5 1/2	4.892	15.5#	0	

PERFORATED INTERVAL

DEPTH (FT)		Shots Per Foot	Perf. Diameter (in)	Total Perfs
MEASURED	TRUE VERTICAL			
2568	2691			38

Operators Name: BC Operating
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Section II - MATERIAL UTILIZATION

VOLUMES

LABEL	Clean Volumes		Unit
	PROPOSED	ACTUAL	
Acid	1,500	1,512	gal
Pad	22,500	17,766	gal
Sand Laden Fluid	27,000	27,006	gal
Flush	2,567	2,646	gal
Other			gal
			gal
FLUID TO RECOVER		48,930	gal
		1,165	bbl

Proppant Properties

LABEL	PROPOSED	ACTUAL	Unit
16/30 Cadre	32000	31940	lbs
16/30 Siber Prop	24000	24072	lbs
Total Proppant	56000	56012	lbs

Max/Min

Rate / Pressure	Rate	Pressure
Maximum	30	1,798
Minimum	10	1,140

Average's

Rate / Pressure	Rate	Pressure
During Pad	29	1584
During Sand	30	1,447
During Flush	30	1649
Average	30	1,560

ISIP'S

READING	Pressure	Unit
ISIP	1663	psi
5 MINUTE ISIP	1234	psi
10 MINUTE ISIP	1182	psi
15 MINUTE ISIP	1140	psi

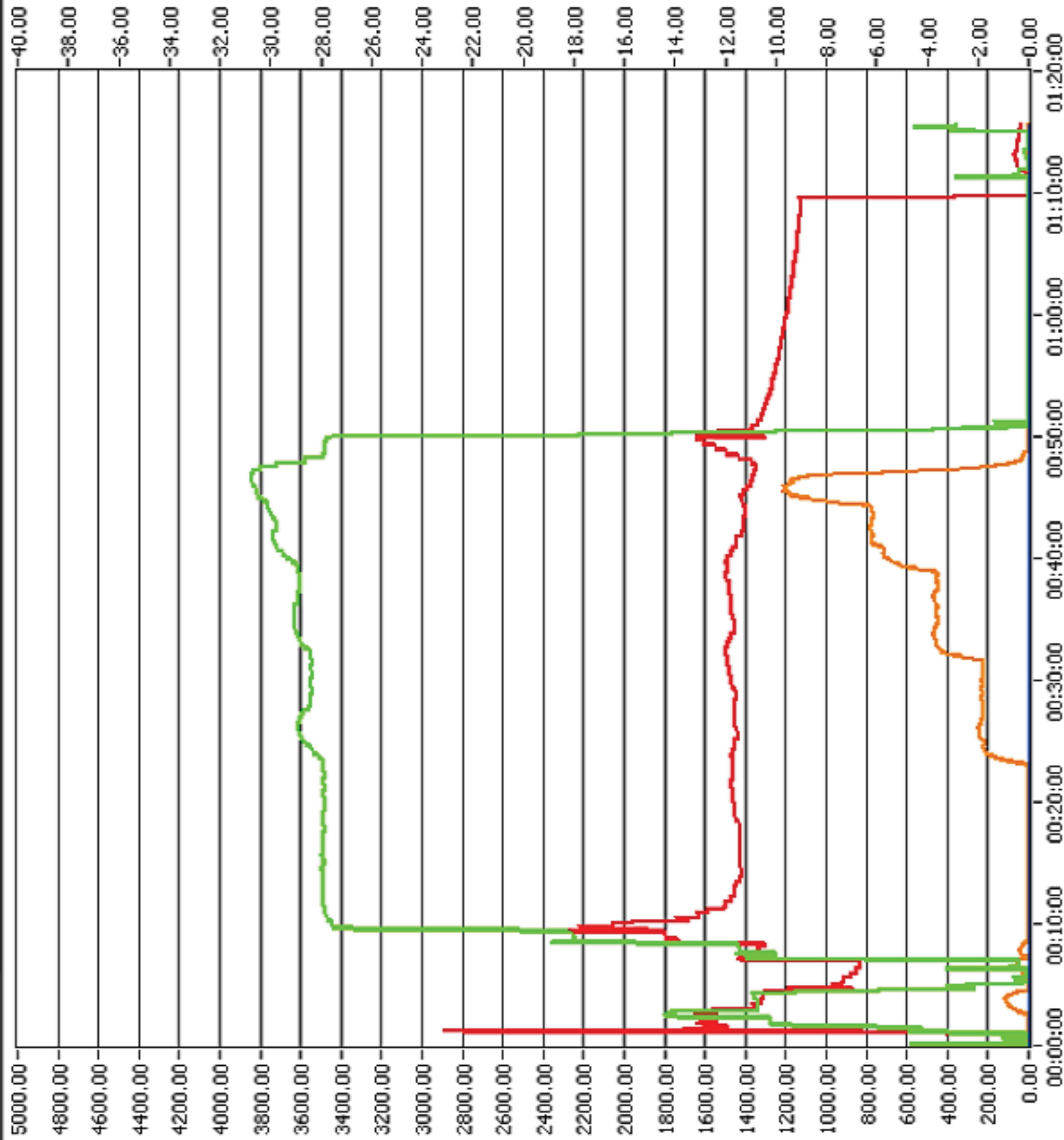


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Treatment Report

Pressure, Density 1



Clean Rate

Slurry Rate

Pressure 1

Pressure 2

Density