

# HALLIBURTON

iCem<sup>®</sup> Service

## **BP AMERICA PROD CO - NAG - EBUS**

**For: MIKE COLBERT**

Date: Sunday, September 20, 2015

## **TAICHERT 31-01 #4**

TAICHERT 31-01 #4

BP

Job Date: Saturday, September 19, 2015

Sincerely,

**LEMONT JOJOLA**

## Legal Notice

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*The Road to Excellence Starts with Safety*

Sold To #: 358135	Ship To #: 3676729	Quote #: 0022102257	Sales Order #: 0902758686
Customer: BP AMERICA PROD CO-SORAC/NAG EBIZ		Customer Rep:	
Well Name: TAICHERT 31-01		Well #: 4	API/UWI #: 05-067-09938-00
Field: IGNACIO BLANCO	City (SAP): IGNACIO	County/Parish: LA PLATA	State: COLORADO
Legal Description: NW SW-31-33N-6W-2413FSL-1083FWL			
Contractor: AZTEC WELL SERVICING CO		Rig/Platform Name/Num: AZTEC 507	
Job BOM: 7523			
Well Type: COAL DE-GAS			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor:	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type			BHST
Job depth MD	3776ft		Job Depth TVD
Water Depth			Wk Ht Above Floor
Perforation Depth (MD)	From		To

**Well Data**

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		8.625	8.097	24	STC	J-55	0	514	0	514
Casing		5.5	4.95	15.5	LTC	J-55	0	3810	0	3810
Open Hole Section			7.875				514	3810	514	3810

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			3776	Top Plug	5.5	1	HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5				SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		HES
Stage Tool	5.5				Centralizers	5.5		HES

**Fluid Data**

Stage/Plug #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	10 lb/gal Tuned Spacer III	Tuned Spacer III	20	bbl	10	8.73			
64.30 lbm/bbl		BAROID 41 - 50 LB BAG(478095)							
38.32 gal/bbl		FRESH WATER							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
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2	Lead Cement	VARICEM (TM) CEMENT	215	sack	12.3	2.42		4	13.59	
13.59 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
3	Lead Cement (with Super CBL)	VARICEM (TM) CEMENT	40	sack	12.3	2.43		5	13.62	
13.62 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
4	Tail Cement	VARICEM (TM) CEMENT	125	sack	13.5	1.87		5	9.39	
9.39 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
5	Displacement	Displacement	89.8	bbl	8.33					
Cement Left In Pipe		Amount	ft		Reason			Shoe Joint		
Mix Water:		pH ##	Mix Water Chloride:## ppm			Mix Water Temperature:## °F °C				
Cement Temperature:## °F °C		Plug Displaced by:## lb/gal kg/m3 XXXX				Disp. Temperature:## °F °C				
Plug Bumped?		Yes/No	Bump Pressure:#### psi MPa			Floats Held?Yes/No				
Cement Returns:## bbl m3		Returns Density:## lb/gal kg/m3			Returns Temperature:## °F °C					
Comment										

## 1.0 Real-Time Job Summary

## 1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Pass-Side Pump Rate (bbl/min)	PS Pmp Stg Tot (bbl)	Recirc Density (ppg)	Comments
Event	1	Call Out	Call Out	9/18/2015	19:30:00	USER						CREW CALLED @ 730 PM
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/18/2015	21:15:00	USER						SAFETY MEETING HELD WITH CREW @ 11:30 PM
Event	3	Depart Home for Location	Depart Home for Location	9/18/2015	21:30:00	USER						1- PICKUP 11583927, 1- RED TIGER 12660112, 2- BULK TRUCKS 11338219/10001398, 11328239/10011433, 1- BODYLOAD 10793626
Event	4	Arrive At Loc	Arrive At Loc	9/18/2015	23:00:00	USER						CEMENT CREW ARRIVED @ LOCATION @ 11:00 PM
Event	5	Other	TUBULARS	9/18/2015	23:30:00	USER						TD = 3815 FT, 5 1/2 15.5# CASING SET @ 3810.5 FT, 7 7/8 OH 8 5/8 24# SURFACE SET @ 514 FT MUD WEIGHT 9.9# YIELD 12
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/19/2015	00:45:00	USER						SAFETY MEETING HELD WITH CREW @ 1245 AM
Event	7	Rig-Up Equipment	Rig-Up Equipment	9/19/2015	01:00:00	USER						CEMENT CREW RIGGED UP EQUIPMENT
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/19/2015	02:00:00	USER	19.00	8.54	0.00	25.0	0.04	SAFETY MEETING HELD WITH EVERYONE ON LOCATION
Event	9	Start Job	Start Job	9/19/2015	07:22:51	COM5						
Event	10	Pressure Test	Pressure Test	9/19/2015	07:25:54	USER	2389.00	8.33	0.00	2.1	8.12	PRESSURE TEST GOOD TO 3100 PSI
Event	11	Pump Spacer 1	Pump Spacer 1	9/19/2015	07:31:58	USER	110.00	8.33	2.00	0.7	8.15	PUMPED 10 BBLS H2O

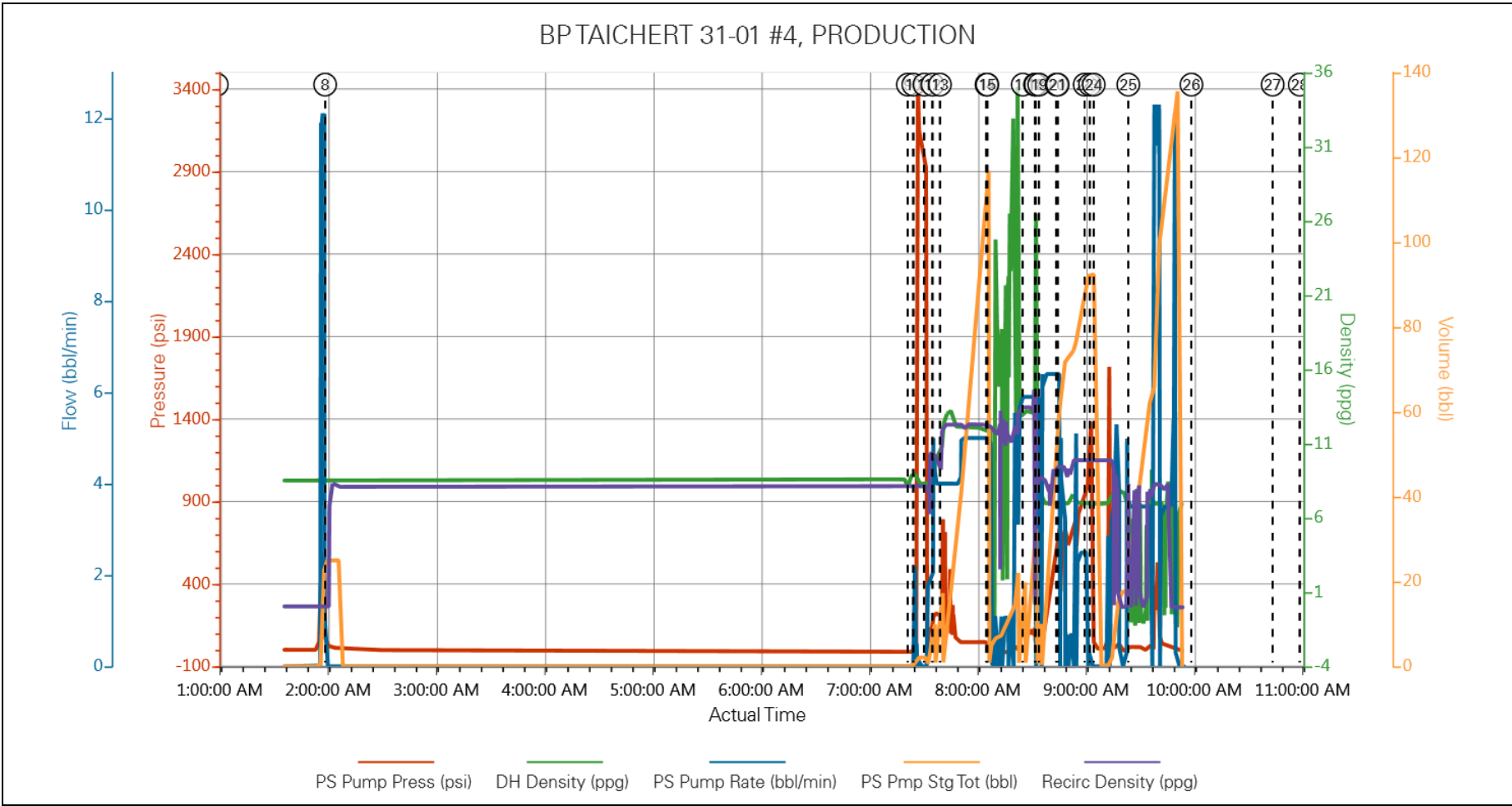
Event	12	Pump Spacer 2	Pump Spacer 2	9/19/2015	07:36:33	USER	212.00	10.38	4.00	3.2	10.04	PUMPED 20 BBLS TUNED SPACER
Event	13	Pump Lead Cement	Pump Lead Cement 1	9/19/2015	07:40:39	USER	358.00	12.41	4.00	2.3	12.28	215 SKS 2.42 CUFT/SK 13.59 GAL/SK = 96.7 BBLS @ 12.3# 69.6 BBLS H2O REQ VARIFIED CEMENT WEIGHT WITH MUD SCALES
Event	14	Pump Lead Cement	Pump Lead Cement 2	9/19/2015	08:06:23	USER	43.00	12.03	5.00	3.8	12.31	40 SKS 2.43 CUFT/SK 13.62 GAL/SK = 17.3 BBLS @ 12.3# 13 BBLS H2O REQ VARIFIED CEMENT WEIGHT WITH MUD SCALES
Event	15	Other	Other	9/19/2015	08:06:56	USER	-3.00	-3.31	1.10	5.0	12.21	PUMP TRUCK STOPPED PUMPING, WAS DOWN FOR 3 MINUTES
Event	16	Pump Tail Cement	Pump Tail Cement	9/19/2015	08:26:33	USER	97.00	13.23	5.90	4.8	13.56	125 SKS 1.87 CUFT/SK 9.39 GAL/SK = 41.6 BBLS @ 13.5# 27.9 BBLS H2O REQ VARIFIED CEMENT WEIGHT WITH MUD SCALES
Event	17	Shutdown	Shutdown	9/19/2015	08:33:16	USER	49.00	7.01	5.90	4.2	8.87	SHUTDOWN DROP PLUG
Event	18	Clean Lines	Clean Lines	9/19/2015	08:33:46	USER	63.00	7.09	5.90	7.1	8.61	WASH PUMPS & LINES
Event	19	Pump Displacement	Pump Displacement	9/19/2015	08:35:34	USER	103.00	6.97	6.40	2.9	8.57	CALCULATED 89.8 BBLS TO DISPLACE PLUG, ACTUALLY PUMPED 90 BBLS TANK TO TANK MARK TO MARK
Event	20	Other	Other	9/19/2015	08:45:14	USER	338.00	6.97	0.60	62.4	9.46	PUMP TRUCK STOPPED PUMPING, WAS DOWN FOR 2 MINUTES
Event	21	Cement Returns to Surface	Cement Returns to Surface	9/19/2015	08:45:54	USER	652.00	6.98	4.00	64.8	9.58	CALCULATED 35.2 BBLS OF CEMENT BACK TO SURFACE, ACTUALLY CIRCULATED 28 BBLS OF CEMENT BACK TO SURFACE
Event	22	Bump Plug	Bump Plug	9/19/2015	09:00:49	USER	1180.00	6.99	0.00	92.3	9.90	CALCULATED 858 PSI TO

LAND PLUG, PLUG BUMPED  
@ 1031 PSI PRESSURED UP  
TO 1378 PSI

Event	23	Check Floats	Check Floats	9/19/2015	09:03:46	USER	33.00	6.95	0.00	92.4	9.86	CHECK FLOATS, FLOATS HELD .5 BBLS BACK
Event	24	End Job	End Job	9/19/2015	09:05:52	COM5						
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/19/2015	09:25:00	USER	5.00	5.03	3.50	28.1	-0.02	SAFETY MEETING HELD WITH CREW @ 9:25 AM
Event	26	Rig-Down Equipment	Rig-Down Equipment	9/19/2015	10:00:00	USER						CREW RIGGED DOWN EQUIPMENT
Event	27	Depart Location Safety Meeting	Depart Location Safety Meeting	9/19/2015	10:45:00	USER						SAFETY MEETING HELD WITH CREW @ 1045 AM
Event	28	Depart Location for Home	Depart Location for Home	9/19/2015	11:00:00	USER						CREW LEAVES LOCATION @ 1130 AM

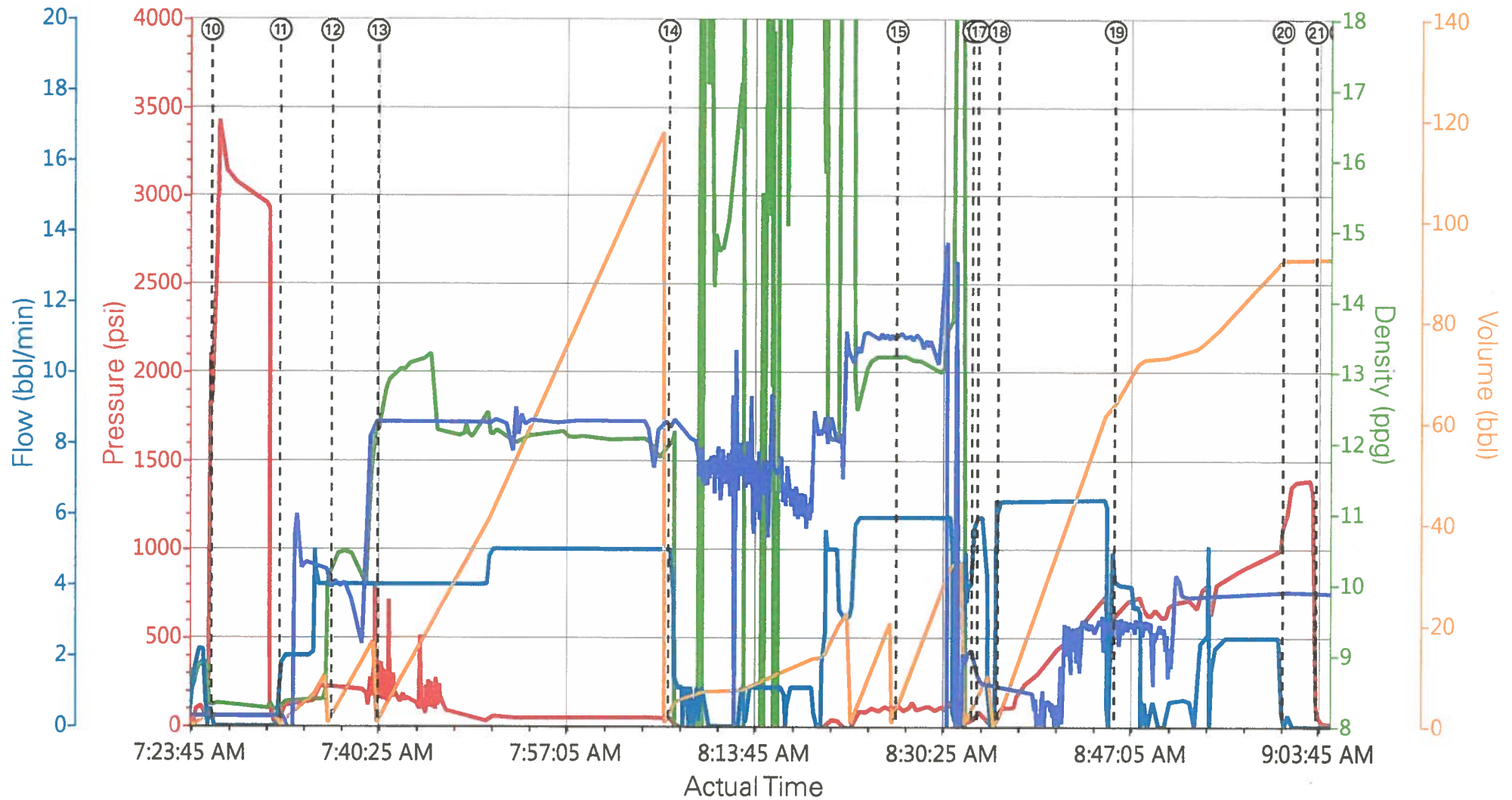
2.0 Custom Graphs

2.1 Custom Graph





# BPTAICHERT 31-01 #4, PRODUCTION



PS Pump Press (psi) 0 DH Density (ppg) 7.09 PS Pump Rate (bbl/min) 3.5 PS Pmp Stg Tot (bbl) 116.2 Recirc Density (ppg) 8.29

- |                              |                             |                      |                             |                                   |                             |
|------------------------------|-----------------------------|----------------------|-----------------------------|-----------------------------------|-----------------------------|
| ① Call Out                   | ⑥ Pre-Rig Up Safety Meeting | ⑪ Pump Spacer 1      | ⑮ Shutdown                  | 21 Check Floats                   | 26 Depart Location for Home |
| ② Depart Yard Safety Meeting | ⑦ Rig-Up Equipment          | ⑫ Pump Spacer 2      | ⑯ Clean Lines               | 22 End Job                        |                             |
| ③ Depart Home for Location   | ⑧ Pre-Job Safety Meeting    | ⑬ Pump Lead Cement 1 | ⑰ Pump Displacement         | 23 Pre-Rig Down Safety Meeting    |                             |
| ④ Arrive At Loc              | ⑨ Start Job                 | ⑭ Pump Lead Cement 2 | ⑱ Cement Returns to Surface | 24 Rig-Down Equipment             |                             |
| ⑤ TUBULARS                   | ⑩ Pressure Test             | ⑯ Pump Tail Cement   | 20 Bump Plug                | 25 Depart Location Safety Meeting |                             |

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Created: 2015-09-17 14:17:40, Version: 4.1.107

Edit

Customer: BP AMERICA PROD CO - NAG - EBUS  
Representative: LEMONT JOJOLA

Job Date: 9/19/2015 1:33:01 AM  
Sales Order #: 902758686

Well: TAICHERT 31-01 #4  
COMPANY MAN: MIKE COLBERT

HALLIBURTON

CEMENTING

WATER ANALYSIS REPORT

COMPANY: BP

DATE RECORDED: September 19, 2015

SUBMITTED BY: LEMONT JOJOLA

SO#: 902758686

LEASE: TAICHERT 31-01

JOB TYPE: LINER

WELL: #4

CAMP LOCATION: 4109 E MAIN FARMINGTON NM

ITEM	RECORDED VALUE	UNITS	MAX ACCEPTABLE LIMIT
PH	7	-	6.0 – 8.0
IRON	0	PPM	300 PPM
CHLORIDES	0	PPM	3000 PPM
SULFATES	<200	PPM	1500 PPM
HARDNESS	50	PPM	500 mg/L
POTASSIUM	700	PPM	5000 PPM
TEMPERATURE	69	°F	50 – 80 °F
TDS	300	PPM	

SUBMITTED BY 

<b>Sales Order #:</b> 0902758686	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 9/19/2015
<b>Customer:</b> BP AMERICA PROD CO-SORAC/NAG EBIZ		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b> MIKE COLBERT		<b>API / UWI: (leave blank if unknown)</b> 05-067-09938-00
<b>Well Name:</b> TAICHERT 31-01		<b>Well Number:</b> 0080737158
<b>Well Type:</b> COAL DE-GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> LA PLATA

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

### CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	9/19/2015
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HX37471
Customer Participation	Did the customer participate in this survey? (Y/N)	Yes
Customer Representative	Enter the Customer representative name	MIKE COLBERT
HSE	Was our HSE performance satisfactory? Circle Y or N	Yes
Equipment	Were you satisfied with our Equipment? Circle Y or N	Yes
Personnel	Were you satisfied with our people? Circle Y or N	Yes
Customer Comment	Customer's Comment	

<b>CUSTOMER SIGNATURE</b>
---------------------------

<b>Sales Order #:</b> 0902758686	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 9/19/2015
<b>Customer:</b> BP AMERICA PROD CO-SORAC/NAG EBIZ		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b> MIKE COLBERT		<b>API / UWI: (leave blank if unknown)</b> 05-067-09938-00
<b>Well Name:</b> TAICHERT 31-01		<b>Well Number:</b> 0080737158
<b>Well Type:</b> COAL DE-GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> LA PLATA

### KEY PERFORMANCE INDICATORS

General	
<b>Survey Conducted Date</b> The date the survey was conducted	9/19/2015

Cementing KPI Survey	
<b>Type of Job</b> Select the type of job. (Cementing or Non-Cementing)	0
<b>Select the Maximum Deviation range for this Job</b> What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	Vertical
<b>Total Operating Time (hours)</b> Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	4
<b>HSE Incident, Accident, Injury</b> HSE Incident, Accident, Injury. This should be recordable incidents only.	Yes
<b>Was the job purpose achieved?</b> Was the job delivered correctly as per customer agreed design?	No
<b>Pumping Hours</b> Total number of hours pumping fluid on this job. Enter in decimal format.	1.5
<b>Type of Rig Classification Job Was Performed</b> Type Of Rig (classification) Job Was Performed On	Drilling Rig (Portable)
<b>Number Of JSAs Performed</b> Number Of Jsas Performed	5
<b>Was this a Primary Cement Job (Yes / No)</b> Primary Cement Job= Casing job, Liner job, or Tie-back job.	Yes
<b>Number of Unplanned Shutdowns</b> Unplanned shutdown is when injection stops for any period of time.	0
<b>Customer Non-Productive Rig Time (hrs)</b>	0

<b>Sales Order #:</b> 0902758686	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 9/19/2015
<b>Customer:</b> BP AMERICA PROD CO-SORAC/NAG EBIZ		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b> MIKE COLBERT		<b>API / UWI: (leave blank if unknown)</b> 05-067-09938-00
<b>Well Name:</b> TAICHERT 31-01		<b>Well Number:</b> 0080737158
<b>Well Type:</b> COAL DE-GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> LA PLATA

Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	
<b>Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?</b> Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?	No
<b>Did We Run Wiper Plugs?</b> Did We Run Top And Bottom Casing Wiper Plugs?	Top
<b>If a top plug was run, was the plug bumped? (Yes/No/N/A)</b> If a top plug was run, was the plug bumped? (Yes/No/N/A)	Yes
<b>If applicable, was Halliburton float equipment used? (Yes/No/N/A)</b> If applicable, was Halliburton float equipment used? (Yes/No/N/A)	No
<b>If applicable, did the floats hold? (Yes/No/N/A)</b> If applicable, did the floats hold? (Yes/No/N/A)	Yes
<b>Mixing Density of Job Stayed in Designed Density Range (0-100%)</b> Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	98
<b>Pump Rate (percent) of Job Stayed At Designed Pump Rate</b> Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	98
<b>If applicable, were there returns throughout the job? (Yes/No/N/A)</b> If applicable, were there returns throughout the job? (Yes/No/N/A)	Yes
<b>Nbr of Remedial Plug Jobs Rqd - HES</b> Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
<b>Nbr of Remedial Sqz Jobs Rqd - HES</b> Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0