

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP - EBUS

Date: Friday, June 20, 2014

NRC 3C-32HZ

Case 1

Sincerely,
Joshua Prudhomme

Table of Contents

| | | |
|------------|---------------------------------|-----------|
| 1.1 | Executive Summary | 3 |
| 1.2 | Cementing Job Summary | 4 |
| 1.3 | Planned Pumping Schedule | 8 |
| 1.4 | Job Overview | 8 |
| 1.5 | 9 | |
| 1.6 | Job Event Log | 10 |
| 2.0 | Custom Graphs | 12 |
| 2.1 | Custom Graph | 12 |
| 3.0 | Appendix | 13 |

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **NRC 3C-32HZ** cement **Surface** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton [Brighton]

Job Times

| | Date | Time | Time Zone |
|--------------------------|-------------|-------------|------------------|
| Called Out | 5/1/2014 | 15:00:00 | MT |
| On Location | 5/1/2014 | 17:35:21 | MT |
| Job Started | 5/1/2014 | 22:21:12 | MT |
| Job Completed | 5/1/2014 | 23:32:31 | MT |
| Departed Location | 5/2/2014 | 00:10:02 | MT |

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

| | | | |
|--|--------------------|----------------------------------|---------------------------|
| Sold To #: 300466 | Ship To #: 3471405 | Quote #: | Sales Order #: 0901317970 |
| Customer: ANADARKO PETROLEUM CORP - EBUS | | Customer Rep: Bob Porter | |
| Well Name: NRC | Well #: 3C-32HZ | API/UWI #: 05-123-39292-00 | |
| Field: WATTENBERG | City (SAP): ION | County/Parish: WELD | State: COLORADO |
| Legal Description: NE NW-8-1N-67W-612FNL-2065FWL | | | |
| Contractor: | | Rig/Platform Name/Num: Majors 42 | |
| Job BOM: 7521 | | | |
| Well Type: HORIZONTAL GAS | | | |
| Sales Person: HALAMERICA\HX46524 | | Srcv Supervisor: Devin Birchell | |
| Job | | | |

| | | | |
|------------------------|--------|--|-------------------|
| Formation Name | | | |
| Formation Depth (MD) | Top | | Bottom |
| Form Type | | | BHST |
| Job depth MD | 1233ft | | 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 | | 9.625 | 8.921 | 36 | | J-55 | 0 | 1233 | | 0 |
| Open Hole Section | | | 13.5 | | | | 0 | 1233 | | 0 |

| Tools and Accessories | | | | | | | | | |
|-----------------------|---------|-----|------|----------|----------------|---------|-----|------|--|
| Type | Size in | Qty | Make | Depth ft | Type | Size in | Qty | Make | |
| Guide Shoe | 9.625 | | | 1233 | Top Plug | 9.625 | 1 | HES | |
| Float Shoe | 9.625 | | | 1223 | Bottom Plug | 9.625 | | HES | |
| Float Collar | 9.625 | | | 1182 | SSR plug set | 9.625 | | HES | |
| Insert Float | 9.625 | | | | Plug Container | 9.625 | 1 | HES | |
| Stage Tool | 9.625 | | | | Centralizers | 9.625 | 10 | HES | |

| Miscellaneous Materials | | | | | | | | | |
|-------------------------|------|------------|------|-----------|------|------|---------------|------|--|
| Gelling Agt | Conc | Surfactant | Conc | Acid Type | Qty | Conc | Treatment Fld | Conc | |
| | | Inhibitor | | Sand Type | Size | Qty | | | |

| 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 | Mud Flush III (Powder) | Mud Flush III | 12 | bbl | 8.4 | | | | | |
| | | 42 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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Cementing Job Summary

| | | | | | | | | | |
|----------------------------|-------------------|----------------------|------------|----------------|-------------------------------|-----------------------|----------------------|---------------------|----------------------------|
| 2 | Lead Cement | SWIFTCEM (TM) SYSTEM | 439 | sack | 14.2 | 1.54 | | 6 | 7.64 |
| 7.64 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 | Displacement | Displacement | 91.5 | bbl | 8.33 | | | | |
| Cement Left In Pipe | Amount | 42 ft | | Reason | Shoe Joint | | | | |
| Comment | | | | | | | | | |

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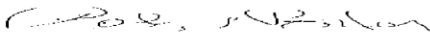


Summary Report

Crew: _____
 Job Start Date: 5/1/2014

Sales Order #: 0901317970
 WO #: 0901317970
 PO/AFE #: NA

| | | | | | |
|-------------------|--------------------------------|-------------------|-------------|---------------------|------------------------|
| Customer: | ANADARKO PETROLEUM CORP - EBUS | Field: | WATTENBERG | Job Type: | CMT SURFACE CASING BOM |
| UWI / API Number: | 05-123-39292-00 | County/Parish: | WELD | Service Supervisor: | Devin Birchell |
| Well Name: | NRC | State: | COLORADO | | |
| Well No: | 3C-32HZ | Latitude: | 40.071245 | Cust Rep Name: | Bob Porter |
| | | Longitude: | -104.916556 | Cust Rep Phone #: | |
| | | Sect / Twn / Rng: | 8/1/67 | | |

| | | |
|---|---|------------------|
| Remarks: | | |
| The Information Stated Herein Is Correct | Customer Representative Signature  | Date 5/2/2014 |
| | Customer Representative Printed Name Bob Porter | |

1.3 Planned Pumping Schedule

| Stage /Plug # | Fluid # | Fluid Type | Fluid Name | Surface Density lbm/gal | Avg Rate bbl/min | Surface Volume | Downhole Volume |
|---------------|---------|---------------|--------------------|-------------------------|------------------|----------------|-----------------|
| 1 | 1 | Spacer | Fresh Water Spacer | 8.33 | 3.0 | 10.0 bbl | 10.0 bbl |
| 1 | 1 | Spacer | Mud Flush | 8.40 | 3.0 | 12.0 bbl | 12.0 bbl |
| 1 | 1 | Spacer | Fresh Water Spacer | 8.33 | 3.5 | 10.0 bbl | 10.0 bbl |
| 1 | 2 | Cement Slurry | SwiftCem B2 | 14.2 | 5.0 | 439.0 sacks | 439.0 sacks |

1.4 Job Overview

| | | Units | Description |
|----|--|---------|-------------|
| 1 | Surface temperature at time of job | °F | |
| 2 | Mud type (OBM, WBM, SBM, Water, Brine) | - | WBM |
| 3 | Actual mud density | lb/gal | |
| 4 | Time circulated before job | HH:MM | |
| 5 | Mud volume circulated | Bbls | |
| 6 | Rate at which well was circulated | Bpm | |
| 7 | Pipe movement during hole circulation | Y/N | N |
| 8 | Rig pressure while circulating | Psi | |
| 9 | Time from end mud circulation to start of job | HH:MM | |
| 10 | Pipe movement during cementing | Y/N | N |
| 11 | Calculated displacement | Bbls | 91.5 |
| 12 | Job displaced by | Rig/HES | HES |
| 13 | Annular before job)? | Y/N | Y |
| 14 | Annular flow after job | Y/N | Y |
| 15 | Length of rat hole | Ft | |
| 16 | Units of gas detected while circulating | Units | |
| 17 | Was lost circulation experienced at any time ? | Y/N | N |

1.5

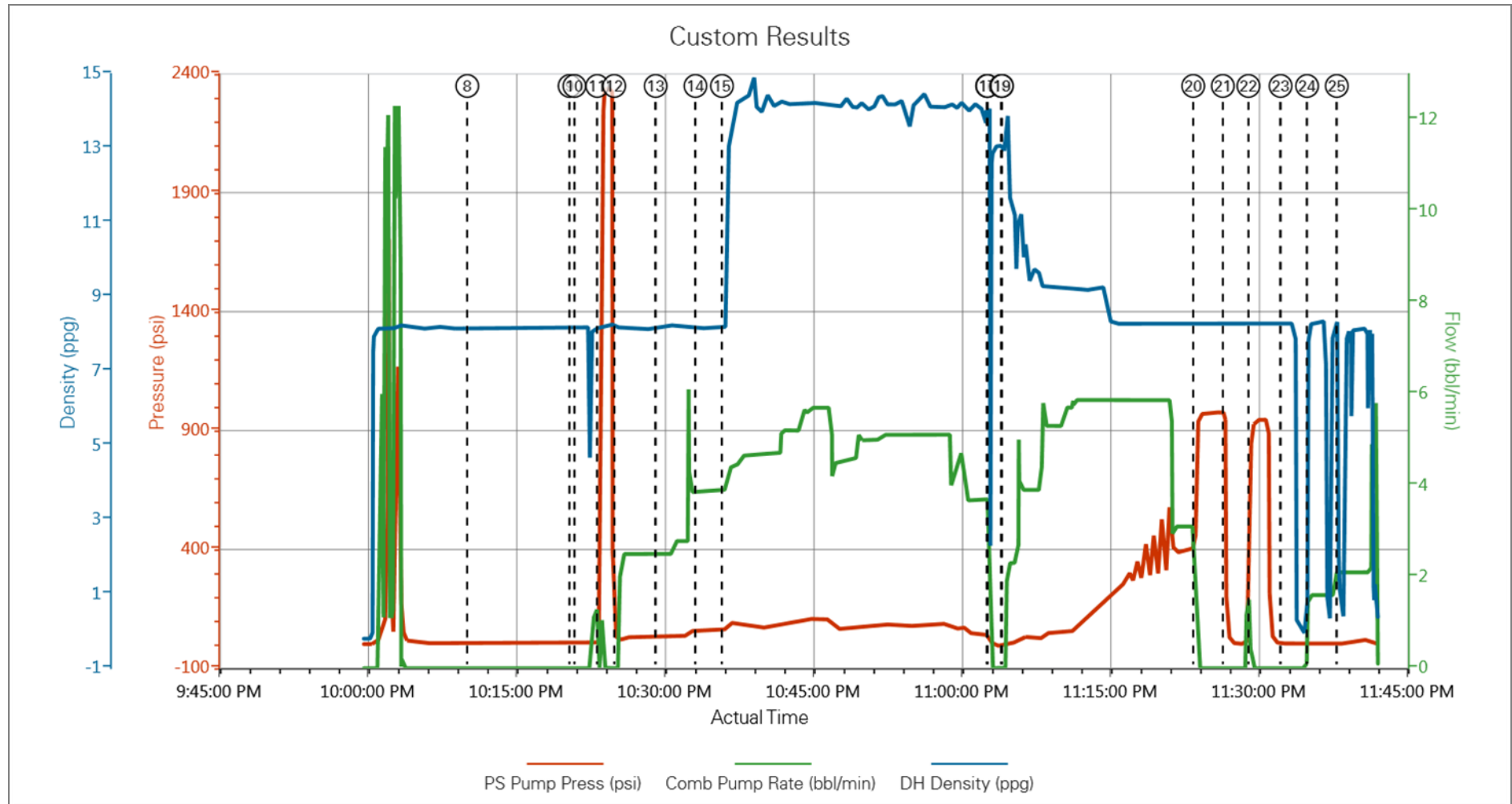
1.6 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | PS Pump Press (psi) | Comb Pump Rate (bbl/min) | DH Density (ppg) | Comment |
|-------|----------|--|--|----------|----------|--------|---------------------|--------------------------|------------------|---|
| Event | 1 | Call Out | Call Out | 5/1/2014 | 15:00:00 | USER | | | | called cement crew for anadarko nrc 3c-32hz surface |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 5/1/2014 | 17:00:23 | USER | | | | discussed route, weather, other traffic, following distance |
| Event | 3 | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 5/1/2014 | 17:15:34 | USER | | | | called journey gate checked and left for location |
| Event | 4 | Arrive At Loc | Arrive At Loc | 5/1/2014 | 17:35:21 | USER | | | | ended journey talked with company rep on depth, rates, pressures and volumes of job |
| Event | 5 | Wait on Customer or Customer Sub-Contractor Equip - Start Time | Wait on Customer or Customer Sub-Contractor Equip - Start Time | 5/1/2014 | 17:45:23 | USER | | | | waited for rig crew to finish pulling drill string and run casing |
| Event | 6 | Pre-Rig Up Safety Meeting | Pre-Rig Up Safety Meeting | 5/1/2014 | 21:25:43 | USER | | | | discussed hand placement, pinch points, swing path |
| Event | 7 | Rig-Up Equipment | Rig-Up Equipment | 5/1/2014 | 21:30:23 | USER | | | | rigged up ground iron, hoses to rig floor |
| Event | 8 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 5/1/2014 | 22:10:23 | USER | 6.00 | 0.00 | 8.17 | discussed job procedures to rig and cement crews |
| Event | 9 | Rig-Up Completed | Rig-Up Completed | 5/1/2014 | 22:20:43 | USER | 4.00 | 0.00 | 8.23 | rigged up cement head and stand pipe |
| Event | 10 | Prime Pumps | Prime Pumps | 5/1/2014 | 22:21:12 | USER | 3.00 | 0.00 | 8.22 | primed pump and lines for pressure test |
| Event | 11 | Test Lines | Test Lines | 5/1/2014 | 22:23:30 | COM1 | 5.00 | 0.00 | 8.19 | test pump and lines to 2330 psi |
| Event | 12 | Pump Spacer 1 | Pump Spacer 1 | 5/1/2014 | 22:25:13 | COM1 | 12.00 | 0.00 | 8.18 | pump 10 bbls fresh water spacer |
| Event | 13 | Pump Spacer 2 | Pump Spacer 2 | 5/1/2014 | 22:29:24 | COM1 | 29.00 | 2.50 | 8.18 | pump 12 bbls mud flush III spacer |

| | | | | | | | | | | |
|-------|----|--|--|----------|----------|------|--------|------|-------|---|
| Event | 14 | Pump Spacer 1 | Pump Spacer 1 | 5/1/2014 | 22:33:25 | COM1 | 56.00 | 3.90 | 8.16 | pump 10 bbls fresh water spacer |
| Event | 15 | Pump Lead Cement | Pump Lead Cement | 5/1/2014 | 22:36:06 | COM1 | 62.00 | 3.90 | 8.18 | pump 120 bbls (439sks) 14.2 ppg slurry, γ:1.54 ft3/sk w:7.64 gal/sk |
| Event | 16 | Shutdown | Shutdown | 5/1/2014 | 23:02:52 | COM1 | 13.00 | 0.00 | 10.66 | shutdown to clean cement head and drop plug |
| Event | 17 | Clean Lines | Clean Lines | 5/1/2014 | 23:02:55 | COM1 | 9.00 | 0.00 | 12.24 | clean pump and lines on plug |
| Event | 18 | Drop Top Plug | Drop Top Plug | 5/1/2014 | 23:04:18 | COM1 | -6.00 | 0.00 | 12.98 | dropped plug with driller witnessing |
| Event | 19 | Pump Displacement | Pump Displacement | 5/1/2014 | 23:04:23 | COM1 | -5.00 | 0.00 | 13.17 | pump 91.5 bbls fresh water displacement |
| Event | 20 | Bump Plug | Bump Plug | 5/1/2014 | 23:23:42 | COM1 | 906.00 | 0.00 | 8.29 | bumped plug with 406 psi took pressure to 976 psi |
| Event | 21 | Check Floats | Check Floats | 5/1/2014 | 23:26:41 | USER | 141.00 | 0.00 | 8.25 | checked floats, floats held with .5 bbls back |
| Event | 22 | Other | Double Bump | 5/1/2014 | 23:29:16 | COM1 | 902.00 | 0.00 | 8.22 | pressured up on plug for a second time |
| Event | 23 | End Job | End Job | 5/1/2014 | 23:32:31 | COM1 | 4.00 | 0.00 | 8.24 | job completed |
| Event | 24 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 5/1/2014 | 23:35:12 | USER | 3.00 | 1.60 | 8.27 | discussed hand placement, pinch points, swing path |
| Event | 25 | Rig-Down Equipment | Rig-Down Equipment | 5/1/2014 | 23:38:12 | USER | 4.00 | 2.10 | 0.93 | rig down iron and hoses |
| Event | 26 | Rig-Down Completed | Rig-Down Completed | 5/1/2014 | 23:55:21 | USER | | | | rig down complete call in journey and depart for service center |
| Event | 27 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 5/1/2014 | 23:59:01 | USER | | | | discussed hand placement, pinch points, swing path |
| Event | 28 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 5/2/2014 | 00:10:02 | USER | | | | thank you for using halliburton energy services |

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix

Insert Planned Pump Schedule from Proposal or actual Job Procedure built for job