



**Andrews, David**

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**From:** Andrews, David  
**Sent:** Monday, January 03, 2011 10:22 AM  
**To:** 'Caplis, Chris'; King, Kevin  
**Cc:** Conger, Jeremy; Harris, Steven; Harris, Howard  
**Subject:** RE: PA 31-20 Braden Head pressure

Chris,

Your procedure is acceptable. Provided that BLM concurs, please proceed.

Thanks,

**David D. Andrews, P.E., P.G.**  
Engineering Supervisor - Western Colorado

**State of Colorado**  
**Oil and Gas Conservation Commission**  
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Website: <http://www.colorado.gov/cogcc>

**CC: COGCC Well File, API No. 045-18107**

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**From:** Caplis, Chris [mailto:Chris.Caplis@Williams.com]  
**Sent:** Thursday, December 30, 2010 8:51 AM  
**To:** Andrews, David; King, Kevin  
**Cc:** Conger, Jeremy; Harris, Steven; Harris, Howard  
**Subject:** RE: PA 31-20 Braden Head pressure

Dave,

I've attached our remediation plan for the PA 31-20. We will have a rig on location soon after the first of the year to begin remediation operations.

If you have any questions let me know.

Thanks,

**Chris Caplis**  
Completions Engineer  
Williams Production Co.  
Ofc: 303-606-4041  
Cell: 303-601-4884  
[chris.caplis@williams.com](mailto:chris.caplis@williams.com)

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**From:** Andrews, David [mailto:David.Andrews@state.co.us]  
**Sent:** Monday, December 13, 2010 9:21 AM  
**To:** Caplis, Chris; King, Kevin

**Cc:** Conger, Jeremy; Harris, Steven; Harris, Howard

**Subject:** RE: PA 31-20 Braden Head pressure

Chris,

Based on your 3-week timeline below, the rig should be moving off location soon. Please copy both Kevin and me when you have your remediation procedure ready.

Thanks,

Dave

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**From:** Caplis, Chris [mailto:Chris.Caplis@Williams.com]

**Sent:** Monday, November 22, 2010 11:21 AM

**To:** Andrews, David; King, Kevin

**Cc:** Conger, Jeremy; Harris, Steven; Harris, Howard; Caplis, Chris

**Subject:** PA 31-20 Braden Head pressure

Mr. King,

Per the voicemail I left you this morning, below is a summary of what occurred this weekend regarding the PA 31-20:

- We perforated the MV4 at 13:00 on 11/19/2010 in preparation to stimulate that zone the following morning. It is the last zone to be frac'd on this well. The previous 5 stages were completed with no BH pressures. I have posted the post job charts showing BH pressure on the previous 5 stages on our FTP site along with the CBL and the completion procedure.
- When we arrived on location the following morning, 11/20/2010, we rigged up HES and pressure tested. We then opened the braden head, it had pressure so we installed a gauge and plumbed a hard line to a tank. The BH had ~900 psi on it.
- We bled the pressure down and decided to set a CBP just above the flow-through plug from the MV3 stage and just below the MV4 perforations, ~7,300' TMD.
- We shut the BH in while setting the CBP and the BH pressure built up to 120 psi in just over an hour.
- We then bled off the pressure again. Once the CBP was set all pressures went to zero both on the casing and the braden head.
- We have been producing up casing since with 400 psi on the casing on a 20 choke.

I will notify you of our remediation procedure once the drilling rig moves off of location in 3 weeks or so.

Let me know of any questions.

Thanks,

**Chris Caplis**

Completions Engineer

Williams Production Co.

Ofc: 303-606-4041

Cell: 303-601-4884

chris.caplis@williams.com

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**From:** Andrews, David [mailto:David.Andrews@state.co.us]

**Sent:** Wednesday, September 08, 2010 8:35 AM → SEE DOCUMENT NO. 2054545  
**To:** Caplis, Chris FOR 9/8/2010 CONTINUATION  
OF THIS EMAIL. D.A.



## Williams Production RMT Co. Production Casing Remediation Procedure

Wellname: PA 31-20  
Date: 12/28/2010  
Field: Parachute

Prepared By: Chris Caplis  
Cell phone: 303-601-4884

Purpose: Remediate low TOC to frac MV4 stage (final frac stage of well)

### Well Information:

API Number:	05-045-18107
Production Casing:	4-1/2" 11.6# E-80
Shoe Depth:	9,209 ft
Float Collar Depth	9,175 ft
Surface Casing Depth	1,101 ft
Top of Mesaverde:	5,629 ft
Top of Gas:	6,915 ft
Correlate Log:	Baker OH Log dated 7/6/2010
Max pressure:	7,000 psi

### Well History:

- The well has been completed through the MV3 stage, the MV4 has been perforated only
- Current TOC is at 6,890 ft. Current Top Perf is at 7,042 ft. (**PERFS 7042' - 7242'**)
- 980 psi was on the braden head the morning after the MV4 was perforated, 0 psi prior during all frac stages
- A CBP was installed above the MV3 FlowThru plug at 7,253 ft.

DA

### Proposed Procedure:

- 1 MIRU Wireline unit  
Set CBP at 7,060 ft to isolate top perfs at 7,043 ft (3 holes)  
RIH with wireline and perforate second set of squeeze holes at 6,770 ft (2 holes)
- 2 MIRU, RIH with 2 3/8" tbg and packer to 6,943 ft and circulate casing  
Set packer at 6,943 ft  
Perform injection rate test on bottom perfs (7,043 ft) - DO NOT EXCEED 1,000 psi on rig pump during injection test  
Record pump rate(s) and pressure(s) - **Contact Denver with results: Chris Caplis - 303-601-4884**  
Alternate trying to circulate between bottom perfs at 7,043 ft and top perfs at 6,770 ft, again, do not exceed 1,000 psi on rig pump
- 3 Once we're confident we have attempted to establish circulation MIRU HES cement crew and prep to squeeze bottom perfs (7,043 ft)  
**Pump 100 sx 17.0 ppg cement w/0.5% CFR-3**, hesitate and attempt to squeeze with braden head open  
Displace to within 1 bbl of EOT  
Unseat packer, pull up ~30 ft and reverse circulate tbg to get any cement out of the casing that might have circulated on top of the packer  
POOH to 6,670 ft and wait 1 hr
- 4 Set packer at 6,670 ft and prep to squeeze top perfs (6,770 ft)  
**Pump 100 sx 17.0 ppg cement w/0.5% CFR-3**, hesitate and attempt to squeeze with braden head open  
Displace to within 1 bbl of EOT  
Unseat packer, pull up ~30 ft and reverse circulate tubing  
POOH with tubing and packer
- 5 Allow at least 24 hrs cement set time.  
Install gauge on braden head and check for pressure, record pressure (if any) and call Denver  
Once the pressure check is done re-open the braden head
- 6 RIH with bit and 2 3/8" tubing.  
Drill out cement and clean out to top of CBP at 7,060 ft.  
Run CBL from CBP at 7,060 ft up to 5,429 ft. Call Denver with results.  
No need to pressure test as these perfs will see fracture pressure

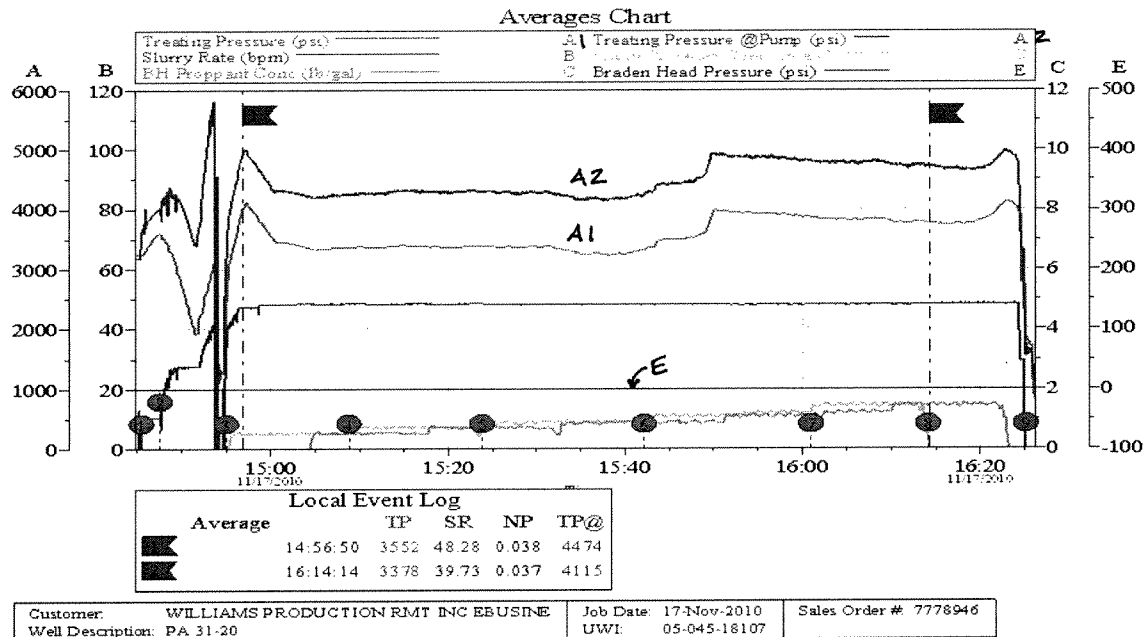
If all successful, continue with completion operations.

**MV3**      7323' - 7538'

HALLIBURTON

WILLIAMS PRODUCTION RMT INC EBUSINE  
PA 31-20 Stage 3  
PA 31-20 Mesaverde 3

### 5.3 Averages Chart



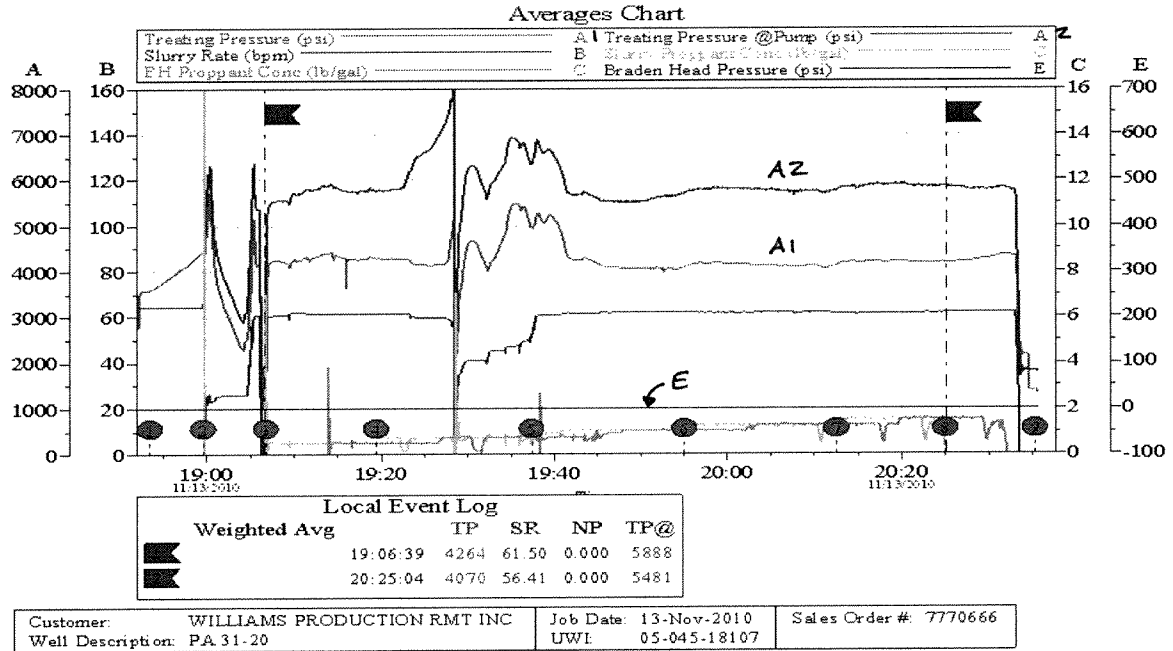
MV2

7658' - 7825'

85-11-10-10-10-10

WILLIAMS PRODUCTION RMT INC  
PA 31-20 Stage 1  
PA 31-20 Merapada 2

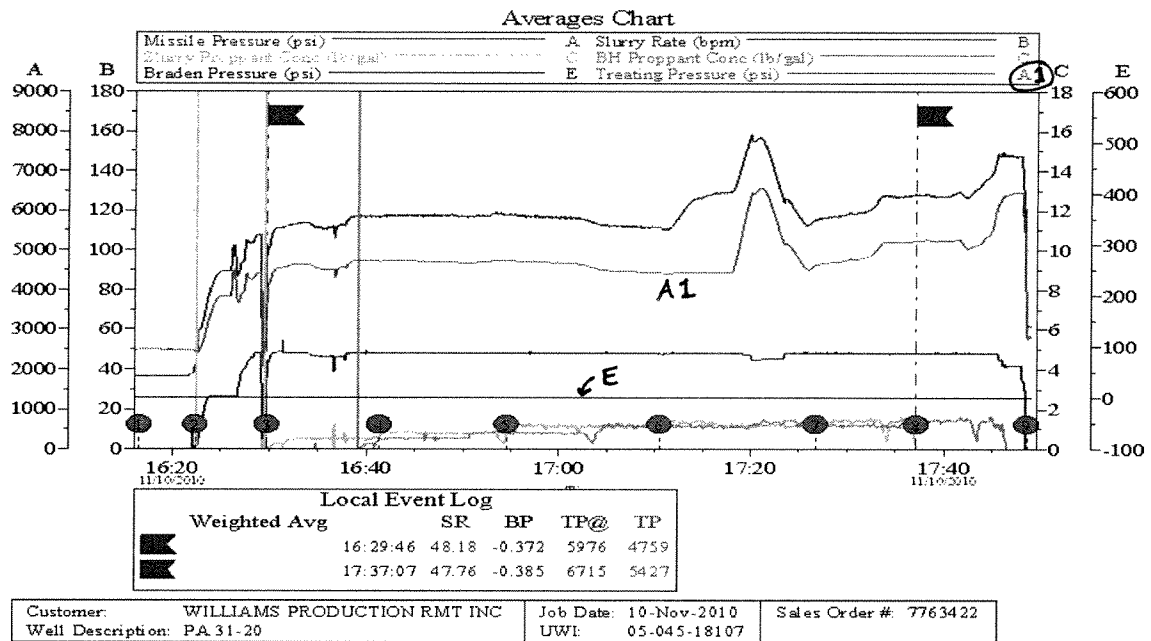
### 5.3 Averages Chart



**MV1**

**8227' - 8455'**

### 5.3 Averages Chart



8519' - 8765'

WILLIAMS PRODUCTION ENT INC  
PA 11-23 Stage 2  
PA 11-23 Carbons

Customer:	WILLIAMS PRODUCTION RMT INC	Job Date:	08-Nov-2010	Sales Order #:	7758905
Well Description:	PA 31-20	UWI:	05-045-18107		

## PA 31-20 – BRADEN HEAD PRESSURE MONITORING

LOWER CAMEO      8822' - 9009'

### 5.3 Averages Chart

