

Bob Koehler - DNR

From: Bob Koehler - DNR
Sent: Wednesday, December 10, 2014 8:16 AM
To: 'Neel Duncan'
Cc: Stuart Ellsworth - DNR
Subject: RE: Select Energy Services: LSDW #1 Change In Maximum Injection Pressure Approved Sundry # 400694071

Neel,

I remember our discussion and also the one Stuart and I had regarding your question. I have corrected the maximum injection pressure to 2000 psi. The following is the RemindmE note I put in our electronic files.

"12/10/2014 API: 123-30367

Corrected math error in Sundry Doc # 400694071 that revised maximum injection pressure. Request was for an increase (Correspondence # 400694097) from 1354 psi (based on MIT) to 2190 psi (based on original step rate test data) a difference of 836 psi. In Sundry 400694071 80% of the friction loss value of 708 psi was incorrectly granted instead of 80% of requested increase. Using 708 psi, incorrect maximum injection pressure was set at 1921 psi. Using 836 psi, correct maximum injection pressure should be 2023 psi. For ease of reading gauge and to not go above 80% limit this was rounded to 2000 psi."

Reasoning:

80% of requested increase: $836 \text{ psi} \times 0.8 = 668.8 \text{ psi}$

$1354 \text{ psi (original maximum injection pressure)} + 669 \text{ psi (increase)} = 2023 \text{ psi (calculated new maximum injection pressure)}$

Question is whether to round up for ease of gauge reading to 2050 psi or drop to 2000 psi to stay below 80% safety factor. I decided to go with 2000 psi as the new maximum injection pressure to keep within the 80% limit.

Sincerely,

Robert P. (Bob) Koehler, PhD
Underground Injection Control Lead, Geology Advisor



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From: Neel Duncan [mailto:neel.duncan@iptenergyservices.com]
Sent: Tuesday, December 09, 2014 6:02 PM
To: Bob Koehler - DNR
Subject: FW: Select Energy Services: LSDW #1 Change In Maximum Injection Pressure Approved Sundry # 400694071

Hi Bob,

You responded to this at one point that the UIC page was going to be corrected due to the math error in the approved sundry and the maximum injection pressure would be revised to 2050 psi. (80% of what I was asking for got us to 2050 PSI not 1921 PSI as in the sundry. The 80% was mistakenly applied to friction pressure.)

I have checked the COGCC Website and do not find any corrections to the permitted injection pressure. How do we go about implementing the change?

CONDITIONS OF APPROVAL, IF ANY:

COA Type Description

Maximum Daily Injection Rate is limited to a maximum of 10,000 bbl/day for the entire well.

After discussion with Stuart Ellsworth operator will get 80% of requested increase in Maximum Injection Pressure. 708 psi x 80 % = 567 psi. Current Maximum Injection [Note: 708 was friction. The requested increase was 836]

Pressure 1354 psi + Increase 567 PSI = New Maximum Injection Pressure of 1921 psi.

On Oct 13, 2014, at 3:42 PM, "Neel Duncan" <neel.duncan@iptenergyservices.com> wrote:

Hi Bob,

I just went back and reviewed my letter and the 708 psi referred to below was the friction pressure. The requested increase was 2190 psig (requested) minus 1354 psig (present) equals 836 psi.

So if you are looking for a margin of error by granting 80% that would be an increase of 669 psi for a new injection pressure of 1354+669 = 2023 psig. I can read 2050 on a gauge a lot easier if you can do that.

Thanks,
Neel

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C: +1.303.947.9402

www.cred.org
www.studyfracking.com
<image001.png>
<image002.jpg>

Integrated Petroleum Technologies, Inc.
1707 Cole Blvd, Suite 200
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www.iptenergyservices.com

From: Neel Duncan [<mailto:neel.duncan@iptenergyservices.com>]

Sent: Wednesday, October 08, 2014 7:25 PM

To: Jeff Anderson

Subject: Fwd: Select Energy Services: LSDW #1 Change In Maximum Injection Pressure Approved Sundry # 400694071

Sundry approved. See email below.

Neel L. Duncan, PE
VP Operations
Integrated Petroleum Technologies
neel.duncan@iptenergyservices.com

C: [+1.303.947.9402](tel:+13039479402)



Begin forwarded message:

From: Bob Koehler - DNR <bob.koehler@state.co.us>
Date: October 8, 2014 at 18:25:47 MDT
To: Neel Duncan <neel.duncan@iptenergyservices.com>, Paul Gottlob <paul.gottlob@iptenergyservices.com>
Cc: Stuart Ellsworth - DNR <stuart.ellsworth@state.co.us>
Subject: Select Energy Services: LSDW #1 Change In Maximum Injection Pressure Approved Sundry # 400694071

Neel and Paul,

After discussion with Stuart we approved an increase of the Maximum Injection Pressure at the LSDW #1 well from 1354 psi to 1921 psi. This was based on giving you 80% of the requested 708 psi increase.

$708 \text{ psi} \times 80\% = 567 \text{ psi}$.

Current Maximum Injection Pressure 1354 psi + Increase 567 psi = New Maximum Injection Pressure of 1921 psi.

Note that there is a COA stating that the Maximum Daily Injection Rate for the entire well will be limited to 10,000 bbl/day.

Sundry # 400694071
Select Energy Services
LSDW #1
NENW 18-3N-64W 6PM
Weld County
API: 123-30367

Sincerely,

Robert P. (Bob) Koehler, PhD
Underground Injection Control Lead, Geology Advisor



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<20140918 LSWD Injection Pressure Revision Request.pdf>

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