State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Dylan M. Fuge, Division Director (Acting)
Oil Conservation Division

BY ELECTRONIC MAIL ONLY

Matthias Sayer
Regulatory Affairs
NGL Water Solutions Permian, LLC
Email: Matthias.Sayer@nglep.com

RE: SUBSEQUENT MECHANICAL INTEGRITY TESTING AND FUTURE OPERATION OF THE SCOTT B SWD WELL NO. 1 (API NO. 30-015-44061)

Dear Mr. Sayer:

The Oil Conservation Division ("OCD") has reviewed the submission of NGL Water Solutions Permian, LLC ("NGL"; OGRID 372338) dated October 31, 2022, regarding a failed mechanical integrity test ("MIT") conducted as part of the conditions stipulated in SWD Order 1642-A. The OCD has also reviewed the results of the subsequent MIT conducted on January 17, 2023.

As a result of the well passing the subsequent MIT, the OCD has determined that the well satisfies the requirement to recommence injection operations. However, as a result of the prior reported gas accumulation along with the failed MIT, OCD will need to address the well's integrity with continued operation and ensure that this reoccurring issue is addressed. Therefore, OCD is requesting that NGL consent to issuance of a new UIC permit which will include operational conditions that can be address the current well situation.

On December 18, 2020, OCD adopted a new form of order granting injection authority for UIC wells to ensure the prevention of waste and the protection of correlative rights, public health, and the environment as required by the Oil and Gas Act and OCD's delegation of authority from the U.S. Environmental Protection Agency. A copy of the new form of order is attached for your review. If NGL consents to the new form of order, it may continue injection in the interim. If not, OCD requests that NGL continue not to inject until the appropriate operational conditions can be agreed to.

The items the OCD would address in the new order as Special Conditions of Approval are:

- An increase in frequency of MIT from a five-year period to annual.
    - Based on prior results, at least one MIT will need to be conducted at less than

500 PSI max.
    - The operator can elect to perform a higher-pressure MIT separately from the first MIT.
- Requirement for all casing annuluses to be consistently (hourly) monitored for pressure with this information retained as to be made available to the OCD upon request. The operator shall also summarize this data every six months and submit attached to a Form C-103.
- If any pressure abnormality is observed, a gas analysis shall be taken from the annulus with the pressure increase and the analytical results along with a description of the event shall be reported using a Form C-103.
- Requirement for NGL to prepare a remedial plan for the well when the tubing is serviced or replaced.

Please advise whether you concur in the granting of injection authority using the new form of order as set forth.

Date: 1/23/2023

Dylan M. Fuge
Director (Acting)

DMF/drc

cc: OCD Engineering Bureau
Well File (30-015-44061)
Admin Order SWD-1642-A file

CONSENT TO ISSUANCE OF PERMIT USING NEW TEMPLATE AND WAIVER OF RIGHT OF APPEAL

NGL Water Solutions Permian, LLC, having reviewed the new form of order for injection authority for UIC wells, consents to issuance of an order based thereon, and waives its right of appeal of such order or any condition in such order to any forum or tribunal. NGL Water Solutions Permian, LLC, understands that OCD may determine that additional conditions are necessary and appropriate to prevent waste and protect correlative rights, public health, and the environment, and retains its right of appeal with respect to such additional conditions. NGL Water Solutions Permian, LLC further warrants that the undersigned person is authorized to execute this Consent and Waiver on its behalf.

_____
Agent for NGL Water Solutions Permian, LLC

State of New Mexico
Energy, Minerals and Natural Resources Department

Date: 1/17/2023

API# 30-015-44061

A **Mechanical Integrity Test (M.I.T.)** was performed on, **Well** South B SWD #1

✓ M.I.T**. is successful,** the original chart has been retained by the Operator on site. Send a **legible** scan of the chart with an attached **Original C-103 Form** indicating reason for the test, via post mail to District NMOCD field office. A scanned image will appear online via NMOCD website, 7 to 10 days after postdating.

____ M.I.T. **is unsuccessful**, the original chart is returned to the Operator. Repairs will be made; Operator is to schedule for a re-test within a 90-day period. If this is a test of a repaired well currently in non-compliance, all dates and requirements of the original are still in effect.
No expectation of extension should be construed because of this test.

____ M.I.T. **for Temporary Abandonment**, shall include a detailed description on **Form C-103**, including the location of the CIBP and any other tubular goods in the well including the Operator's request for TA status timeline.

____ M.I.T**. is successful**, after the secondary request of a scheduled M.I.T. is performed. Therefore, Operator has within a 30-day period from the M.I.T. to submit a current C-103 along with a legible scan of the Chart, including a detailed description of the repair(s). ***Only after receipt of the C-103 will the non-compliance be closed.***

____M.I.T.**is successful**, Initial of an injection well, you must submit a **form C-103** to NMOCD within 30 days. A **C-103 form** must include a detailed description of the work performed on this well Including the position of the packer, tubing Information, the date of first Injection, the tubing pressure and Injection volume.

Please contact me for verification to ensure documentation requirements are in place prior to injection process.

If I can be of additional assistance, please feel free to contact me at (575) 626-0836

Thank You,

Barbara Lydick, Compliance Officer
EMNRD-O.C.D.
South District – Artesia, NM

~~DISTRICT~~
South District-Artesia

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division Hobbs District Office

BRADENHEAD TEST REPORT

Operator Name	API Number
NGL Water Solutions Permian	30-015-44061
Property Name	**Well No.**
Scott B SWD	#1

Surface Location

UL - Lot	Section	Township	Range		Feet from	N/S Line	Feet From	E/W Line	County
N	23	24S	28E		274	S	2165	W	Eddy

Well Status

TA'D WELL		SHUT-IN		INJECTOR		PRODUCER		DATE
YES	(NO)	(YES)	NO	INJ	(SWD)	OIL	GAS	11/17/2023

OBSERVED DATA

	(A)Surface	(B)Interm(1)	(C)Interm(2)	(D)Prod Csng	(E)Tubing
Pressure	0	0		0	1100
Flow Characteristics					
Puff	Y / (N)	Y / (N)	Y / N	Y / (N)	CO2 ___
Steady Flow	Y / (N)	Y / (N)	Y / N	Y / (N)	WTR ✓
Surges	Y / (N)	Y / (N)	Y / N	Y / (N)	GAS ___
Down to nothing	(Y) / N	(Y) / N	Y / N	(Y) / N	Type of Fluid Injected for Waterflood if applies.
Gas or Oil	Y / (N)	Y / (N)	Y / N	Y / (N)	
Water	Y / (N)	Y / (N)	Y / N	Y / (N)	

Remarks – Please state for each string (A,B,C,D,E) pertinent information regarding bleed down or continuous build up if applies.

5yr Retest BHT - BHT OK

Signature:		OIL CONSERVATION DIVISION
Printed name:		Entered into RBDMS
Title:		Re-test
E-mail Address:		
Date: 11/17/2023	Phone:	
	Witness: [signature]	

INSTRUCTIONS ON BACK OF THIS FORM

IPT Well Solutions
1707 Cole Boulevard, Suite 200
Golden, Colorado 80401
720.420.5700
iptwellsolutions.com

PROPOSED MIT TEMPLATE
NEW MEXICO OIL CONSERVATION DIVISION

Introduction

A template is required for testing a generation of deep SWDs completed to inject below high pressure Wolfcamp, Pennsylvanian and Mississippian age gas zones in the Delaware Basin. Many of these wells are completed open-hole, with liner sections from the Wolfcamp into the top of the Devonian / Silurian formation. Some of these liner sections are now seeing low rates of gas seepage through casing threads and/or liner hangers, and as long as the rates are low do not pose mechanical integrity risk.

This template provides a medium-term solution and is designed to comport with existing NMOCD Rules.

Definitions

Existing definitions in the NMAC apply. Additional definitions are:

Hydraulically Competent – A pipe, or connection passing a pressure test using liquid as a test medium but may permit gas to pass through in small quantities.

Applicability

This Mechanical Integrity Test methodology applies only to Class II wells completed at depths between 11,700' – 19,000' in the Delaware Basin where a liner was as production casing to isolate Wolfcamp, Pennsylvanian and Mississippian gas formations. These wells are experiencing low rates of gas seepage into the liner sections that are otherwise hydraulically competent.

Commented [TH1]: These are the permitted depths for currently active Devonian SWD's in NM during the period 2015-current.

This methodology shall be subject to administrative review before 12/31/2028.

Test Procedure

Mechanical integrity may be tested in a two-step process. Chart recording is required for the tubing-casing annulus as well as all other annuli.

1. **Gas Sampling.** If well has casing pressure, a sample of the gas is required which is dated not more than 5 years prior to the MIT date. Gas must be demonstrated to have 20 ppm or less H2S consistent with the operating guidelines of NMAC 19.15.11.11.

2. **Blow Down** – Blow gas pressure down from annulus to no more than 100 psi. Do not release any liquids such as packer fluid.

3. **Pressure Test**. Conduct a pressure test of the tubing casing annulus using a demonstration pressure selected by the operator. Pressure selected must be at least 300 psig but not more than the maximum permitted injection pressure for the well. A well shall fail if there is a pressure variance of more than 10 percent positive or negative in the tubing casing annulus during 30 minutes. All bradenhead pressures shall remain at 0 psig.

Test Certification

NMOCD shall be duly notified of all mechanical integrity tests. Should the NMOCD decline to witness the test, the test must be certified by a Professional Engineer who has been accepted to provide testimony to the Oil Conservation Division.

Test Frequency

Test frequency shall be every five years as per the rule unless the Director requires an additional test(s) based on operations conducted or any special circumstances.

Rose-Coss, Dylan, EMNRD

From: Rose-Coss, Dylan, EMNRD
Sent: Monday, January 23, 2023 9:39 AM
To: Matthias Sayer; Goetze, Phillip, EMNRD; Gebremichael, Million, EMNRD
Cc: neel.duncan@iptwell.com; Powell, Brandon, EMNRD; Wrinkle, Justin, EMNRD; Cordero, Gilbert, EMNRD
Subject: RE: [EXTERNAL] MIT and deep SWDs
Attachments: Scott B SWD_NGL_Operation and Order consent (signed).pdf

Matthias,

Here is an letter as signed by the acting director providing complete with a signature line for NGL to consent to an updated order. The letter also include a copy of the new order template for review.

Let us know if there are any questions.

Regards,

Dylan Rose-Coss

Petroleum Specialist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

C: (505) 372-8687

From: Matthias Sayer <Matthias.Sayer@nglep.com>
Sent: Friday, January 20, 2023 10:46 AM
To: Rose-Coss, Dylan, EMNRD <DylanH.Rose-Coss@emnrd.nm.gov>; Goetze, Phillip, EMNRD <phillip.goetze@emnrd.nm.gov>; Gebremichael, Million, EMNRD <Million.Gebremichael@emnrd.nm.gov>
Cc: neel.duncan@iptwell.com; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Cordero, Gilbert, EMNRD <Gilbert.Cordero@emnrd.nm.gov>
Subject: RE: [EXTERNAL] MIT and deep SWDs

Dylan,

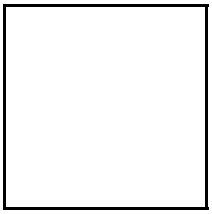
Thank you for the update.

We will look for the letter and perhaps work to schedule a time to discuss with this group once it is received.

Thank you for your time and consideration,

Matthias

From: Rose-Coss, Dylan, EMNRD <DylanH.Rose-Coss@emnrd.nm.gov>
Sent: Thursday, January 19, 2023 3:18 PM
To: Matthias Sayer <Matthias.Sayer@nglep.com>; Goetze, Phillip, EMNRD <phillip.goetze@emnrd.nm.gov>; Gebremichael, Million, EMNRD <Million.Gebremichael@emnrd.nm.gov>
Cc: neel.duncan@iptwell.com; Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; Wrinkle, Justin, EMNRD <Justin.Wrinkle@emnrd.nm.gov>; Cordero, Gilbert, EMNRD <Gilbert.Cordero@emnrd.nm.gov>
Subject: RE: [EXTERNAL] MIT and deep SWDs



Matthias and Neel,

After internal discussion of the results of the subsequent MIT, it was determined that the Scott B SWD [30-015-44061] satisfies the requirements to recommence injection.

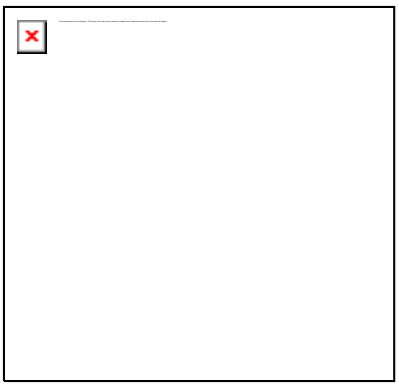
We will reach out shortly with the letter re: consenting to a new order with conditions to address the mechanical integrity.

Regards,

Dylan Rose-Coss

Petroleum Specialist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

C: (505) 372-8687



From: Matthias Sayer <Matthias.Sayer@nglep.com>
Sent: Friday, November 18, 2022 3:25 PM
To: Rose-Coss, Dylan, EMNRD <DylanH.Rose-Coss@emnrd.nm.gov>; Goetze, Phillip, EMNRD <phillip.goetze@emnrd.nm.gov>; Tremaine, Jesse, EMNRD <JesseK.Tremaine@emnrd.nm.gov>; Gebremichael, Million, EMNRD <Million.Gebremichael@emnrd.nm.gov>
Subject: [EXTERNAL] MIT and deep SWDs

All,

Thank you for your time earlier this week.

As I mentioned at the end of the call, is it possible to schedule a meeting with this group after Thanksgiving to discuss MIT issues as applied to deep disposal wells, e.g. issues being examined in the context of the NGL Scott B and other deep wells?

This issue is likely to continue arising and we are hoping to dialogue a bit in attempt to get ahead of it.

Thank you for your time and help!

Matthias

Note, I did not include Kaitlyn here because I do not have her email—please forward. Thank you.

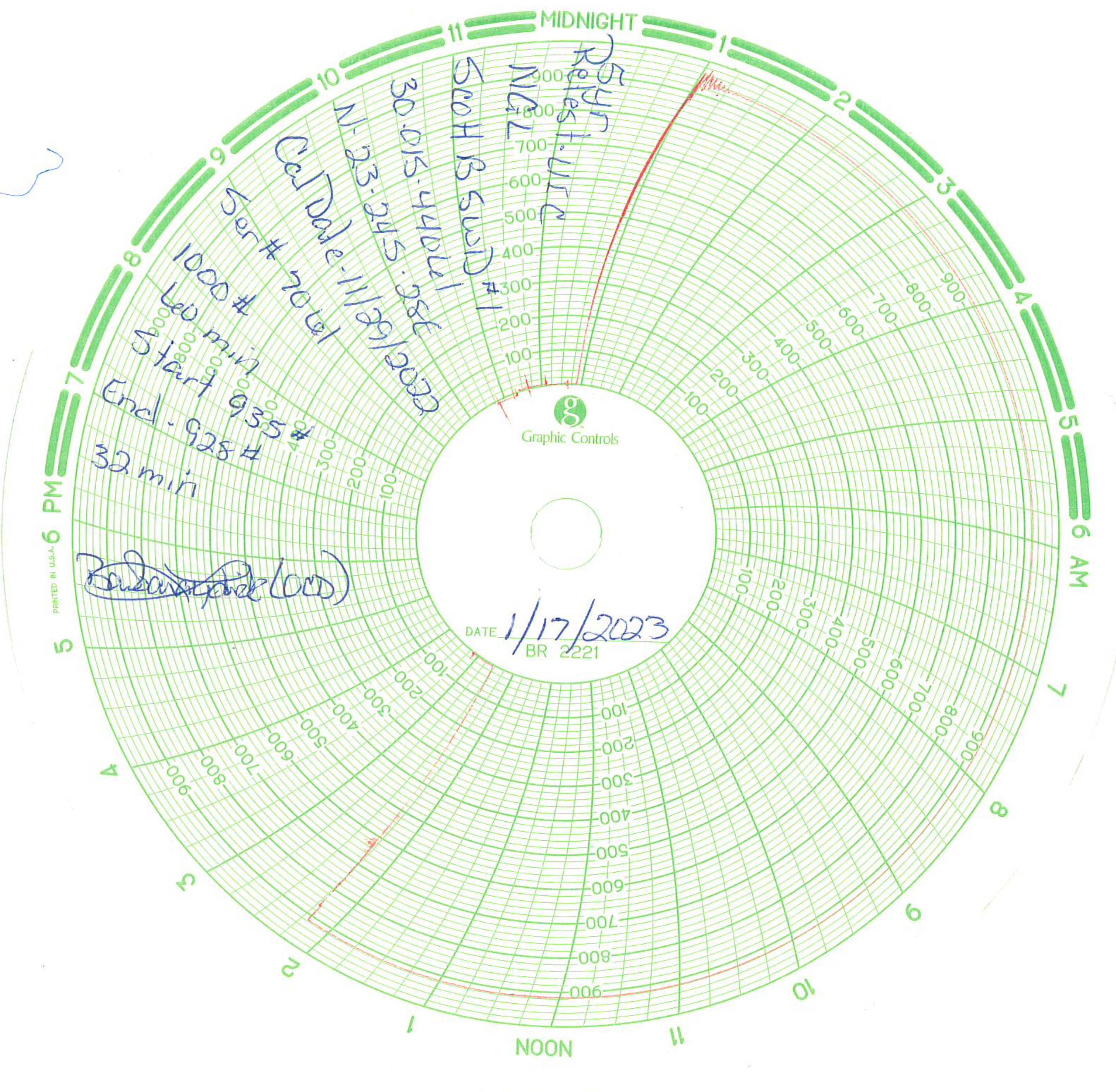
From: Matthias Sayer
Sent: Monday, October 31, 2022 10:01 AM
To: Rose-Coss, Dylan H, EMNRD <DylanH.Rose-Coss@state.nm.us>
Subject: MIT for IPI

Dylan,

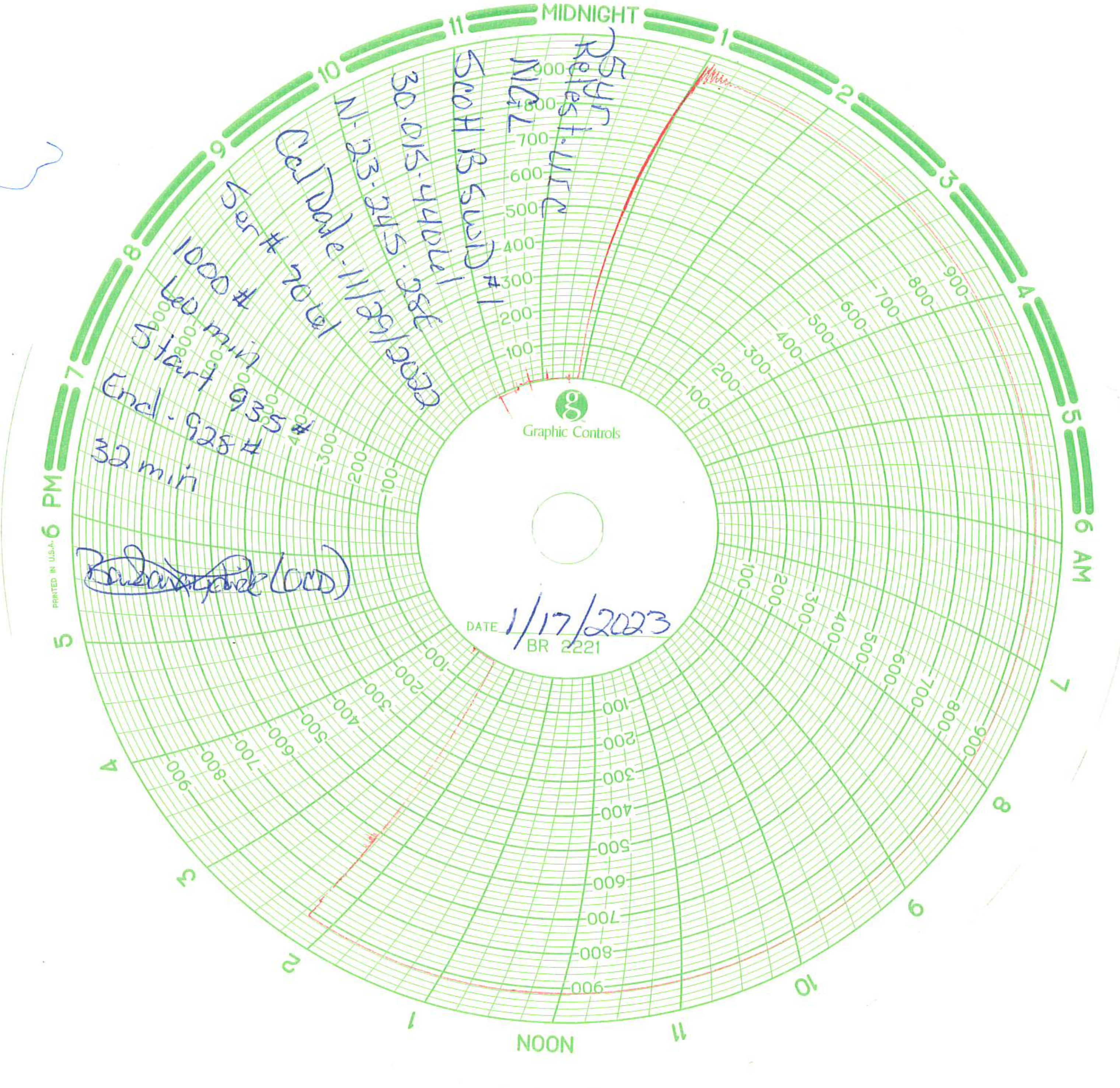
Regarding the IPI process, specifically the associated MIT. If an MIT has been recently completed (within the past few months—the well is new and MIT was done prior to commencement of initial injection), is an additional MIT necessary as part of the IPI or would SRT be sufficient?

Thank you,

Matthias



MIDNIGHT
NOON
6 AM
6 PM
5yr
Retest. UIC
NGL
SCOH B SWD #1
30-015-44061
N-23-24S-28E
Cal Date-11/29/2022
Ser# 7061
1000#
60 min
Start 935#
End 925#
32 min
(OCD)
Graphic Controls
DATE 1/17/2023
BR 2221
PRINTED IN U.S.A.



MIDNIGHT
NOON
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Graphic Controls
DATE 1/17/2023
BR 2221
PRINTED IN U.S.A.
BSYR
Retest. UIC
NGL
SCOH 13 SWD #1
30-015-44061
N-23-24S-28E
Cal Date-11/29/2022
Ser# 7061
1000#
60 min
Start 935#
End 928#
32 min
(OCD)

Scott B SWD #1 MIT

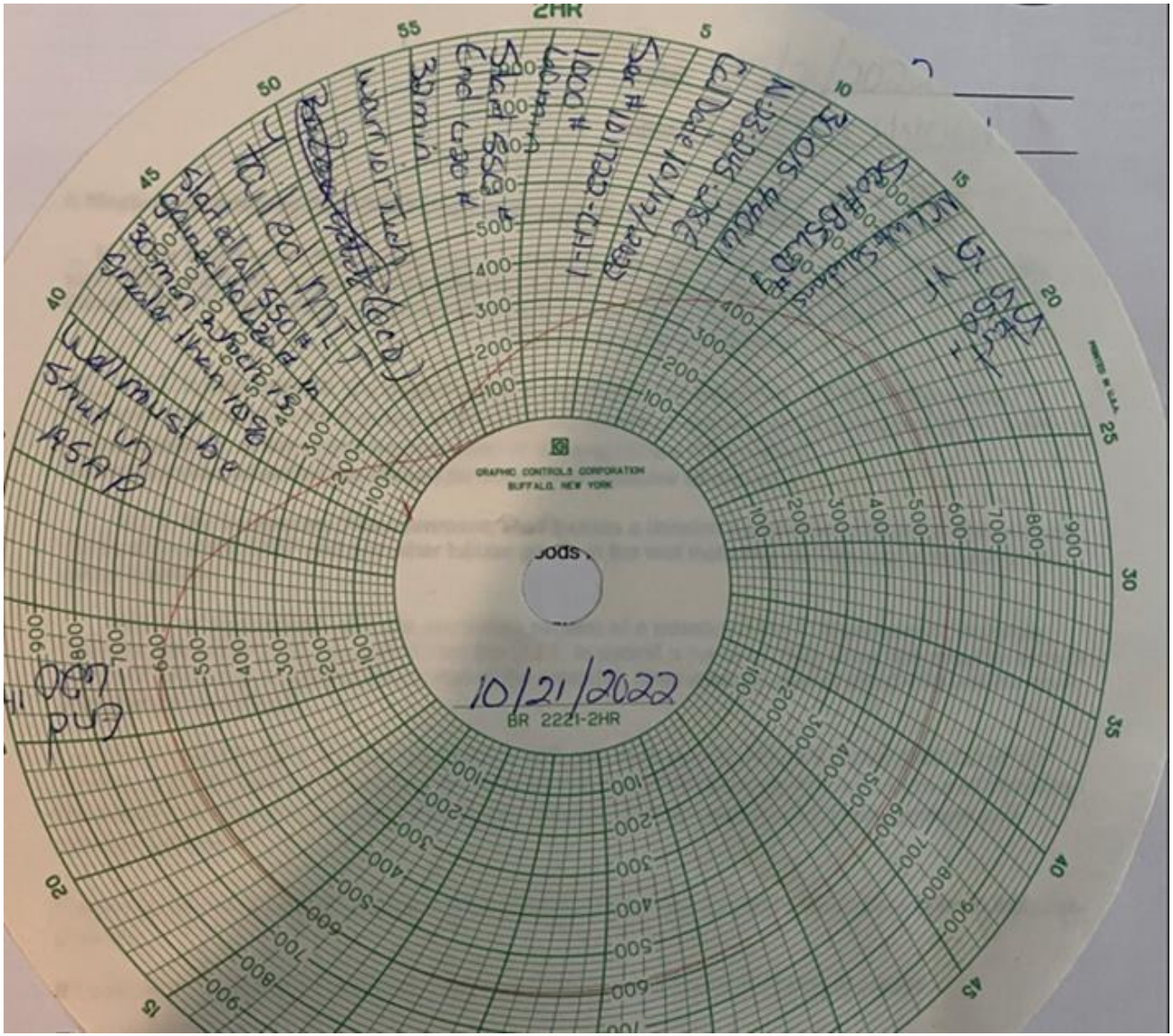
Review with OCD

December 13th, 2022

Energy Partners LP

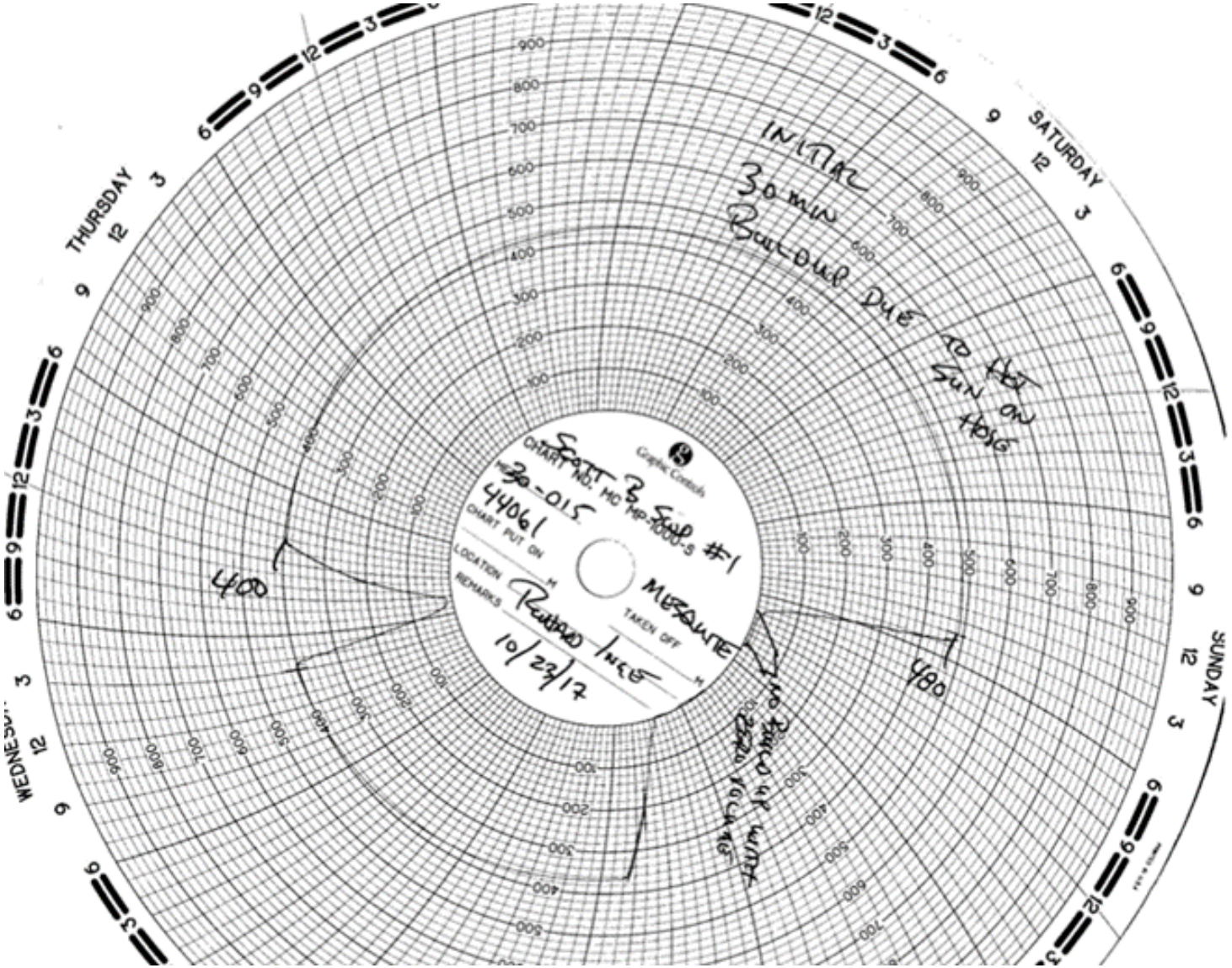
Scott B #1 SWD Well Failed 5-yearly MIT in October

- Pressure increased during test from 550 psig to 620 psig, 70 psi (12.7%).



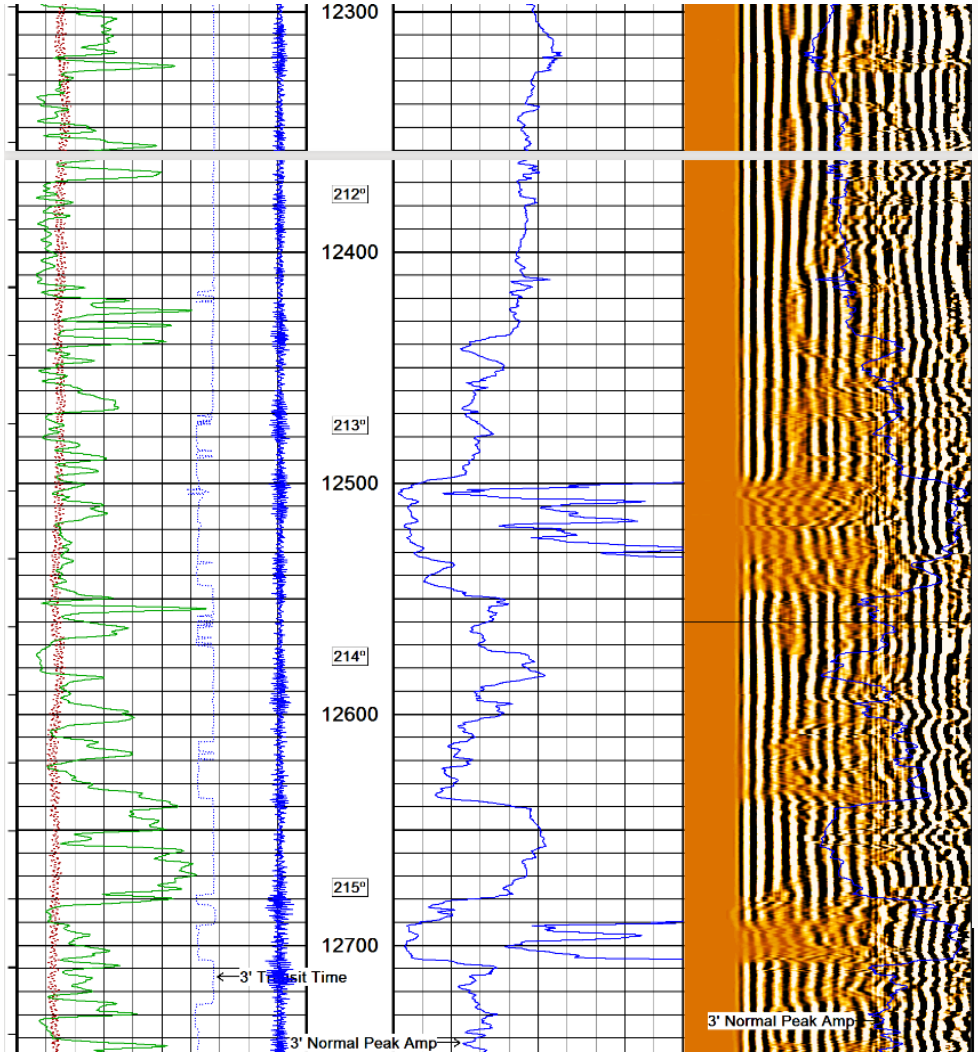
Well Passed Initial MIT in 2017

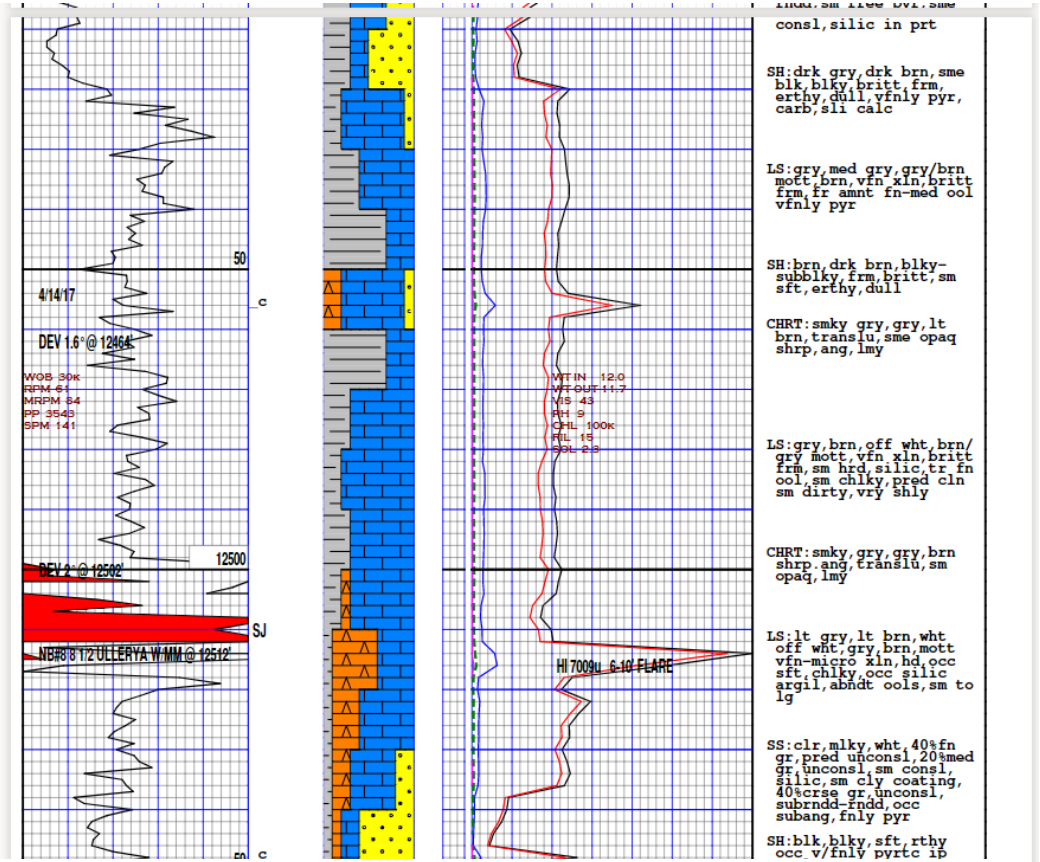
- Pressure *increased* from 400 psig to 480 psig, 80 psi (20%)
- Passed



Issue is Gas Seepage via Casing Threads

Atoka is an Area of Concern in Scott B SWD #1





Mud Weight 12.2 ppg with 10’ flare

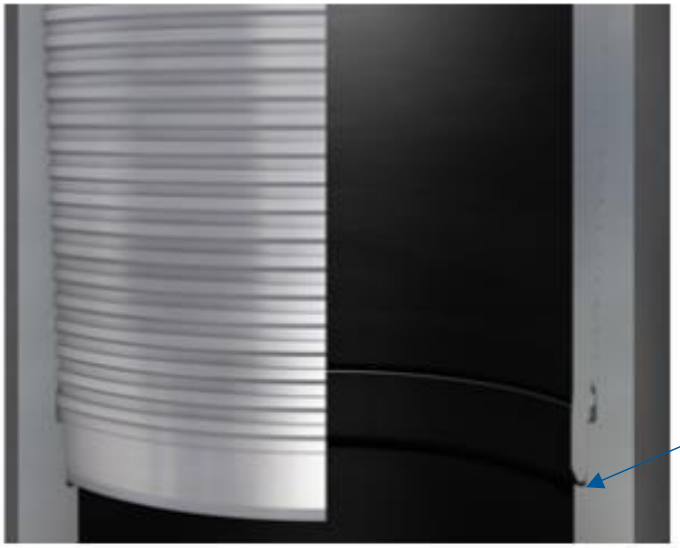
Packer fluid 8.4 ppg.

ΔP = 2470 psi from formation to inside of casing.

Gas Seepage Can Occur in Most Connection Types

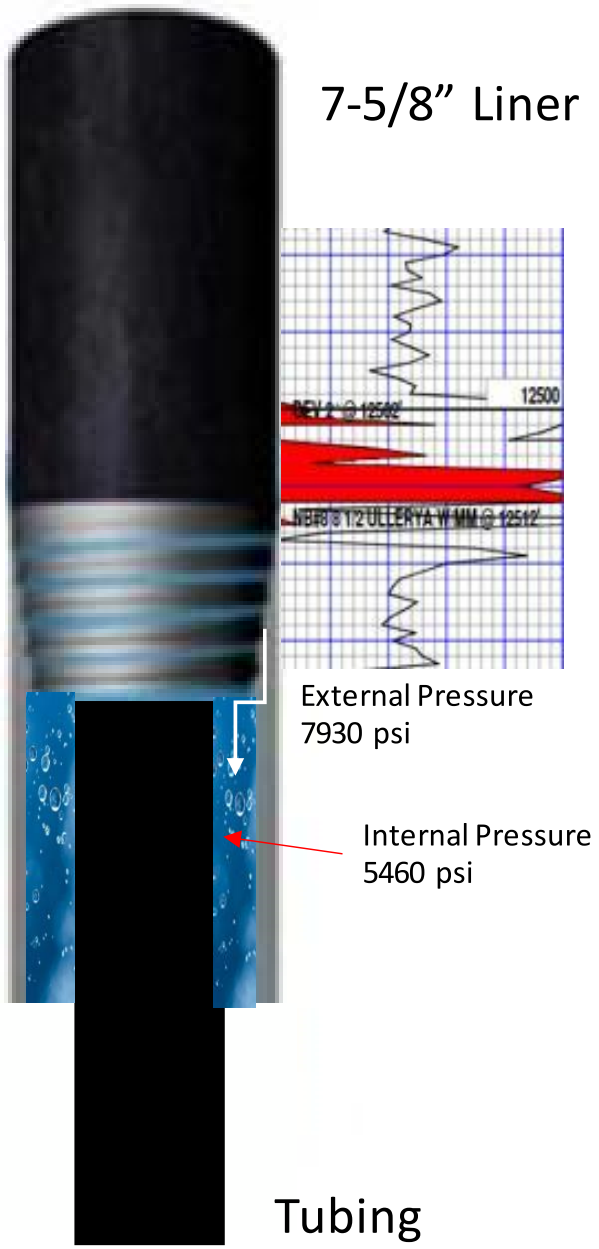
Scott B SWD #1 was completed with 7-5/8" 39# ECP-110 J-2/STL Flush Joint Casing. Although this is a premium connection for hydraulic sealing, internal pressure and collapse, and high tensile loads, it is not gas-tight unless run with an optional Teflon seal ring.

ST-L™



Seal Ring Gap

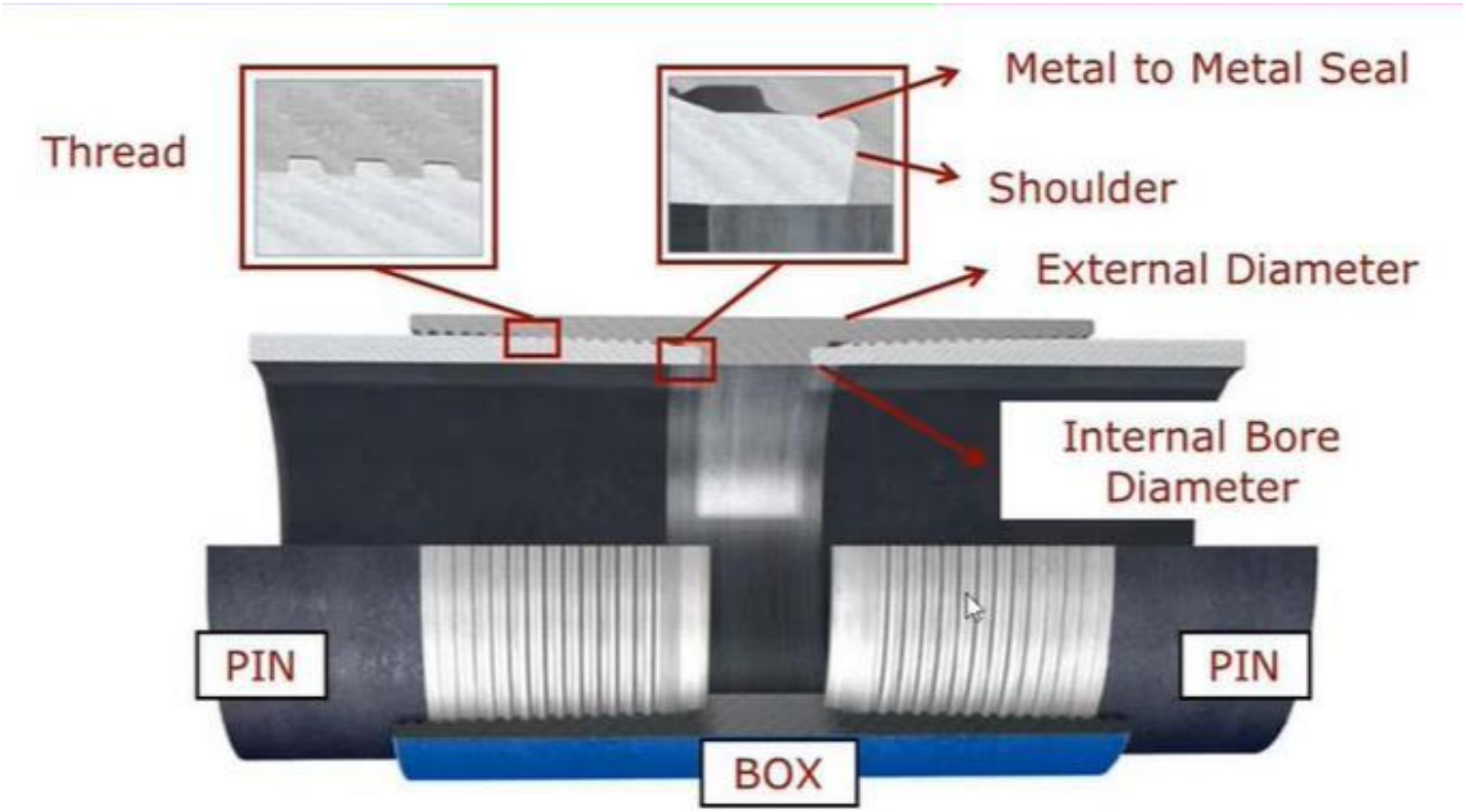
Gas Can Work Through a Connection that is otherwise Hydraulically Tight



- Gas "sealability" is not tested in API pipe. Sometimes gas tests are made on premium connections, but only when specified as gas tight.
- Even "gas tight" designed seals are not perfect, as gas sealing ability also depends on doping, running practices and pipe make-up.
- Threads will hold water whilst not always holding gas. This is primarily due to the high surface tension of fluids.

Gas Storage Operations Now use Verified "Gas Tight" Connections

- Aliso Canyon incident brough gas tight connections into PHMSA regulation.
- Gas Tight Connections have single or multiple metal-to-metal seals *specially designed* to be gas tight.
- Gas Tight is still highly dependent on make-up. Over time, make-up and doping issues can come unmasked.



Way Forward should Consider Direction of Pressure

Low-rate gas seepage into protected annular space is not a wellbore integrity risk.

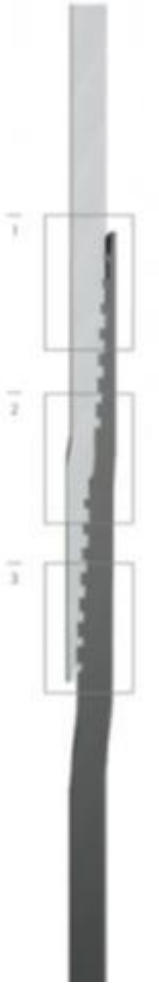
- Influx rate is slow – build of hundreds of psi over hours. There is no well control risk.
- Annulus is full of packer fluid.
- No leakage at wellhead.
- Pressure bleeds to zero in seconds so volume is small.

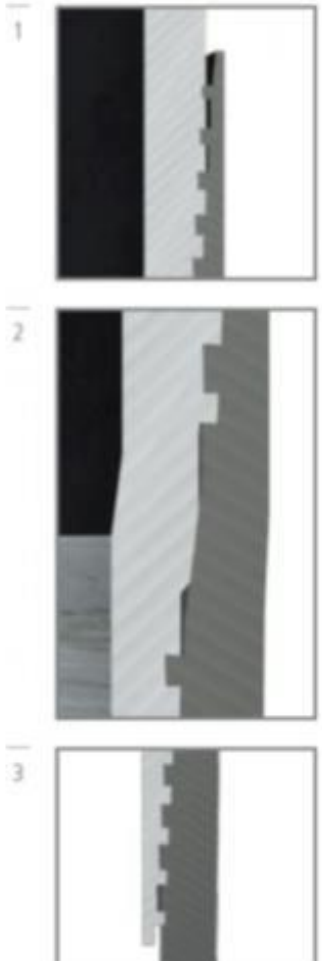
Casing passes positive pressure test with zero reduction in pressure, showing that casing connections are hydraulically competent. There has been no change in well integrity since 2017.

Scott B SWD #1 is not the only well for which this is a feature. Pressure gains (particularly when gas) should be subject to further review but not automatic failure.

Wedge 625

- Tenaris Hydril Wedge 625 is an example of a gas tight flush joint connection.





- Roller-stenciled make-up confirmation band.
- Vanishing thread for optimum tensile efficiency in the pin.
- Trouble-free make-up is developed with the rugged, coarse pitch thread.
- Outstanding torque, bending, and compression strength through the engagement of opposing flanks of the two-step, double hooked dovetail threads.
- Exceptional torque retention developed by the step-to-step Wedge™ feature.
- 100% internal and external pressure rated locked-in metal seal maintains sealing capability under high tension, compression, bending, and torsional loads.
- Vanishing thread for optimum tensile efficiency in the box.
- The steep taper, two-step thread allows for deep stabbing.